

Long-term implications of Covid-19 on transport planning and policy: a perspective from the transport sector

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EXECUTIVE SUMMARY

Covid-19 has had broad ranging impacts on society and its behaviours and habits. It has impacted how and where we conduct work, how we use our leisure time as well as our shopping and consumer patterns. Some of these changes were being observed across society prior to the pandemic, but it is suspected that the pandemic has acted as a catalyst to increase the rate of change. As travel demand is derived from access to opportunities and services, changes to the way in which these are accessed will have implications for the transport planning sector in the short, medium and longer-term.

Whilst other research of Covid-19's impact on transport has focused on the immediate reaction to the pandemic and the short-term future in relation to post-Covid recovery, this research aims to consider the potential long-term (5-10 years) implications of Covid-19 for transport planning and policy. This research is also unique in that it aims to do this through gauging the opinions of transport practitioners to understand whether there are areas of consensus and divergence in the views of experts, specifically in respect of Covid-19's long-term impact on travel patterns and transport and land use, policy and funding and decarbonisation.

An online survey was produced and shared to ask about the expected change in trends as a result of the pandemic with multiple choice questions ensuring that responses could be compared to highlight areas of consensus and divergence. Following on from this, a series of semi-structured interviews and a roundtable discussion were held with interested survey respondents to discuss the thematic areas identified, the uncertainty associated with trends and what the wider implications may be for transport planning discussions went into further detail in our thematic areas and discussed the rationale for responses provided, the uncertainty associated with trends and wider implications for transport planning and policy.

A brief summary of some of our key findings from the survey responses, semi-structured interviews and roundtable discussion are listed below:

- A reduced demand for city centre travel
- A shift to less dense housing development
- Demise of city and town centre shopping
- Increase in Government spending on transport
- More funding for active travel infrastructure
- Uncertainty remaining on future funding for road and rail
- Convenience still the dominant factor in the future for determining modal choice
- Uncertainty over Covid-19's long term impact on decarbonisation
- Reduction in travel demand presents an opportunity to reduce carbon emissions from the sector

Based on the research findings, a set of recommendations have been identified with a particular focus on the areas of greatest uncertainty. The researchers are supportive of the 'decide and provide'ⁱ approach to transport planning and see these areas of uncertainty as areas with the greatest opportunity for influence. It is hoped the recommendations offered by this research will be considered by decision makers to seize the opportunity for change that Covid-19 could provide in transport planning and policy, to ensure the achievement of key objectives, such as decarbonisation.

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1 INTRODUCTION

1.1 ABOUT THE FUTURE TRANSPORT VISIONS GROUP

The Future Transport Visions Group (FTVG) is an annual research and development competition funded by the Rees Jeffreys Road Fund that encourages early career professionals across the transport industry to explore the challenges and opportunities posed by ongoing changes in the world around them.

The vision of FTVG is to sustain a diverse group of early career professionals to consider some of the challenges and opportunities posed by ongoing changes in the transportation industry and outline how these changes are pertinent to the future careers of transport professionals.

The objectives to achieve these aims are:

1. To ensure that the FTVG represents the interests of a diverse range of early career professionals
2. To demonstrate a clear evolution from the original Transport Visions Network
3. To provide early career professionals with a voice to address key challenges and opportunities facing the transport industry
4. To deliver a lasting legacy that can be utilised by future transport professionals

1.2 OUR PROJECT AIMS

Our research aims to consider the possible long-term (5-10 years) implications of Covid-19 for transport planning and policy. To do this we have undertaken a survey and a series of semi-structured interviews and roundtables with transport practitioners. Through these means we have aimed to assess and consider the likelihood of different trends and theories persisting over the long-term and what the implications may be for the transport sector. Based on our findings we have synthesised the implications for the transport planning sector and future policy development, identifying recommendations that could respond to the findings and present opportunities for a 'decide and provide' approach to future planning.

2 COVID-19 & TRANSPORTATION

2.1 COVID-19 AND TRANSPORTATION: DURING THE PANDEMIC

On 31st January 2020 the UK confirmed the first two cases of Covid-19 in the country. On 16th March Prime Minister Boris Johnson advised everyone in the UK against "non-essential" travel and contact with others to curb coronavirus, as well as to work from home if possible and avoid visiting social venues such as pubs, clubs or theatres. Groups such as pregnant women, people over the age of 70 and those with certain health conditions are urged to consider the advice "particularly important".ⁱⁱ On 20th March he then announced that all the UK's nightclubs, theatres, cinemas, gyms and leisure centres are told to close "as soon as they reasonably can" with cafes, pubs and restaurants being ordered to close by the end of that day.ⁱⁱⁱ On 23rd March the Government announced strict new rules to slow the spread of the disease and that the British public must stay at home except for very limited purposes.

In the days leading up to the 23rd March transport usage had started to decline, with rail and bus at around 50% of usual patronage. By 2nd April patronage was at 5% and 11% respectively. Vehicle use declined in the aftermath of the lockdown announcement, but not by as much as public transport, falling to only 25% of pre-pandemic levels in early April. As the restrictions put in place started to affect a reduction in the transmission of the virus over the summer, the restrictions were gradually eased and resultantly transport usage started to rebound. Again, during this rebound private vehicle usage recovered faster and to higher levels than public transport, recovering to pre-pandemic levels during the summer of 2020. Bus and rail recovered to around 40% - 50% of pre-pandemic levels during the same time period. As infections rose again during the winter months of 2020-2021 and restrictions were re-imposed, transport usage again declined, following a similar pattern to March 2020. These changes as shown below in Figure 1.

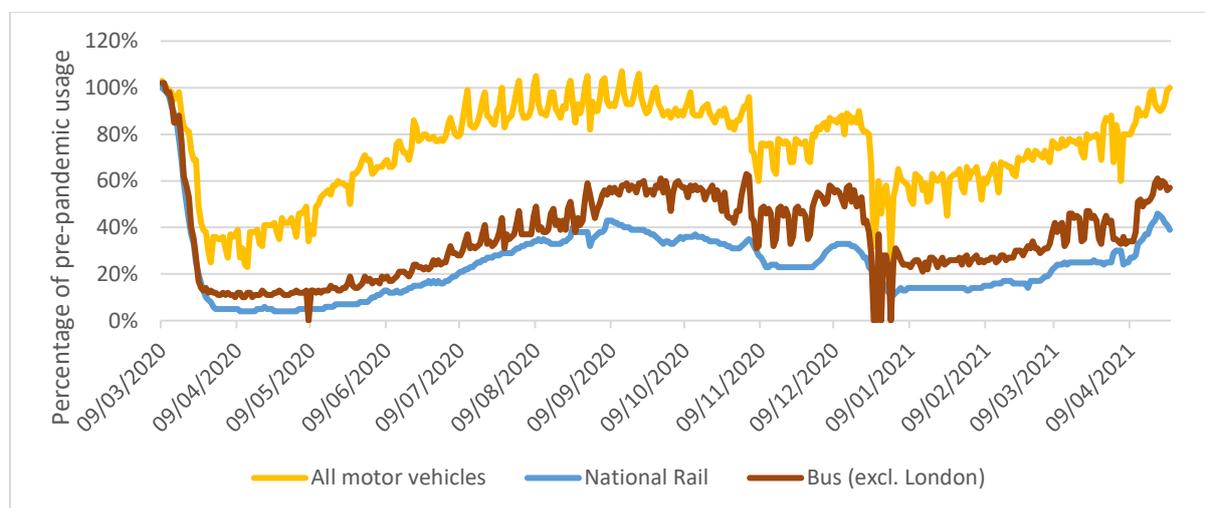


Figure 1: Transport use during the coronavirus (COVID-19) pandemic. Data from DfT, available at: <https://www.gov.uk/government/statistics/transport-use-during-the-coronavirus-covid-19-pandemic>

The reason public transport has fared worse than private vehicle is due to the risk of infection through sharing an enclosed public space with others, Government messaging to avoid public transport where possible and use private vehicles or walking or cycling where risk of transmission was less, and nervousness and fear within the population about sharing transport. Research

undertaken to inform the DfT's National Travel Attitudes Study^{iv} found that 17% of respondents felt concerned of risk of infection about personal cars or bikes, 24% about walking but that on public transport such as buses, trains and the London Underground many more respondents were concerned, with rates reported as 85%, 89% and 91% respectively.¹ The same research highlighted a similar increase in trip rates for cycling and walking in 2020, with rates increasing by 189% during May-July and 138% during August-September, this decline between the two survey periods may well be due to an increase in car use during this time. During 2020, sales of cycle and cycle accessories grew by around 60% with 20% of the value of sales being spent on e-bikes^v.

As the levels of Covid-19 cases are reducing, the vaccine roll-out is continuing and at the time of writing the Government's roadmap indicates that by mid-June 2021 all restrictions will be lifted it leaves many within the transport sector considering the prospects and outlook for long-term changes in transport demand as a result of the pandemic. As previously stated, this research aims to bring together and consider the range of views held within the sector on this question.

2.2 OUR NICHE

Covid-19 has had broad ranging impacts on society and its behaviours and habits. It has impacted how and where we conduct work, how we use our leisure time as well as our shopping and consumer patterns. Some of these changes were being observed across society prior to the pandemic, but it is suspected that the pandemic has acted as a catalyst to increase the rate of change. As travel demand is derived from access to opportunities and services, changes to the way in which these are accessed will have implications for the transport planning sector in the short, medium and longer-term.

Whilst other research of Covid-19's impact on transport has focused on the immediate reaction to the pandemic^{vii} and the short-term future in relation to post-Covid recovery, this research aims to consider the potential long-term (5-10 years) implications of Covid-19 for transport planning and policy. This research is also unique in that it aims to do this through gauging the opinions of transport practitioners rather than the public^{viii}, to understand whether there are areas of consensus and divergence in the views of experts, specifically in respect of Covid-19's long-term impact on travel patterns and transport and land use, policy and funding and decarbonisation.

2.3 RESEARCH OBJECTIVES

After undertaking a review of the literature and identifying how this research will be distinctive from others, the following research objectives were identified:

- Seek the views of the transport sector on the long-term impacts (5-10 years) of Covid-19 on transport planning and policy
- Identify areas of consensus, divergence, certainty and uncertainty
- Identify impacts and interdependencies across transport, land use, policy and funding, decarbonisation and the pandemic

¹ Results from May-July 2020 during the first survey period of the NTA study.

3 METHODOLOGY

3.1 DEVELOPING THE RESEARCH PROJECT

At the start of this project, in November 2020, we discussed in depth the potential impacts of Covid-19 for society, and in particular for transport. We then undertook a literature review and several informal discussions with transport practitioners and the FTVG support team, from which we drew out a number of key themes that became the focus of the survey and following analysis. As such our research has aimed to consider the implications Covid-19 is expected to have in the next 5-10 years by considering the trends and changes in comparison to a reference scenario of travel in 2019, prior to the pandemic (subsequently referred to as pre-Covid). Our research has focussed specifically on identifying:

- Changes to travel demand, modal split and journey purpose in the next 5-10 years
- Changes to transport and land use in the next 5-10 years
- Changes to transport decarbonisation of the transport sector in the next 5-10 years
- Changes to transport policy and funding in the next 5-10 years

A fifth key theme of ‘the impacts of Covid-19 on transport inclusivity’ was also identified. However, this was later agreed to be a very broad topic that would be more appropriately explored by separate research as discussed in section 5.1.

3.2 SURVEY & SURVEY ANALYSIS

The survey launched on 22nd March and closed on 3rd May. Respondents to the survey were entered into a draw to win a £100 charity donation with the aim of increasing number of responses received. We received 108 responses. The survey was aimed at gauging the views of transport practitioners, and so we publicised the survey by:

- Sharing on our own LinkedIn profiles and with our own professional networks
- Encouraging FTVG board members to share the survey with their networks
- Approaching professional member organisations, namely CIHT, TPS and CILT for inclusion of a link to the survey in their newsletters and e-bulletins.

We developed the questions based on our findings of the key changes from the findings of our literature review, informal conversations with peers and our own professional judgement. They were centred on the key themes identified and specified in section 2.1. The questions we posed were multiple choice to ensure we could compare across responses and to reduce interpretation error and ensure the questionnaire could be completed quickly with the intention of increasing the number of responses. The questions all asked about the expected change in trends as a result of the pandemic. For example, question 8 of the survey is below. The rest of the questionnaire, and the results, are provided in Annex A.

“How do you expect trip frequency across different journey purposes to change in the next 5-10 years compared to pre-COVID by mode?”

8. For shopping trips:”

Table 1: Response options for survey question 8

	<i>Significant decrease (over 20% decrease)</i>	<i>Decrease (5-20% decrease)</i>	<i>Small change (5% increase to 5% decrease)</i>	<i>Increase (5-20% increase)</i>
<i>Private vehicle</i>				
<i>Rail-based</i>				
<i>Bus</i>				
<i>Active Travel</i>				

3.3 SEMI-STRUCTURED INTERVIEWS AND ROUNDTABLES

Survey respondents were asked if they would be happy to be contacted for follow-up discussions. In late April and early May we carried out 12 interviews, as well as a roundtable discussion with the Strategic Planning team at Transport for Greater Manchester. These discussions went into further detail in our thematic areas and discussed the rationale for responses provided, the uncertainty associated with trends and wider implications for the sector. In general, we discussed in detail either one or two thematic areas of the interviewees choice to ensure the conversation could be sufficiently detailed within a 30-minute interview. This was instead of covering a wider breadth of topics in less detail which we had already captured from the surveys.

3.4 REPORTING

We have used the findings to develop our discussion and reporting section, sections 4 and 5. We have tried to report all the findings as we believe they were intended and we have synthesised and summarised commonalities and areas of divergence across the survey and semi-structured interview results. In the interests of promoting honest, open and free discussions we conducted all the interviews and roundtables under Chatham House rules, in that responses and quotations can be reported but not attributed to a specific respondent or interviewee. In response to these findings we developed a series of recommendations we feel could be taken forward to address some of the implications the pandemic has had on transport planning and policy.

3.5 LIMITATIONS

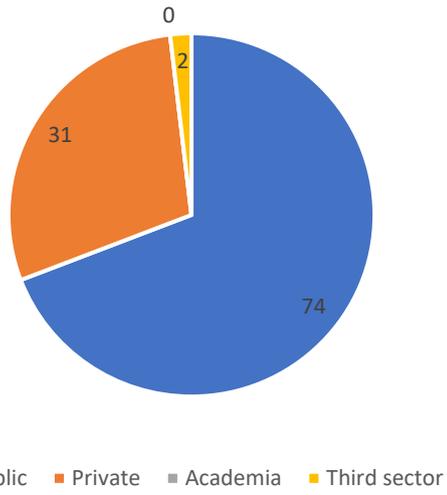
In the development of our work we have also identified a number of limitations associated with our research that should be borne in mind, specifically:

- Responses are likely to be from the limited ‘network’ of the authors, therefore unlikely to be truly representative, reflected in the high number of responses from the North West
- Data gathered in our survey is in ranges, so unable to determine the specific point within that range the respondent may refer to
- Respondents may provide subjective experiences or expectations on which to base their responses rather than providing objective answers
- Due to the uncertainty of the topic at hand, perception of significant and moderate changes are subjective and may mean very different things to different respondents
- There may be difficulties in accurately separating pre-existing trends and trends emanating from changes as a direct result of the pandemic

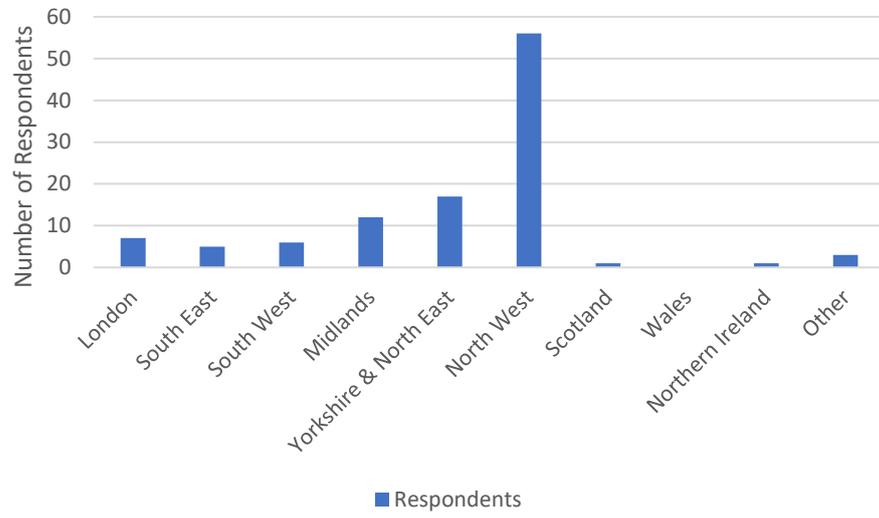
Table 2: Demographic analysis of survey responses

Category	Description														
Age	<table border="1"> <caption>Age Group Data</caption> <thead> <tr> <th>Age Group</th> <th>Number of Respondents</th> </tr> </thead> <tbody> <tr> <td>16 - 24</td> <td>12</td> </tr> <tr> <td>25 - 34</td> <td>36</td> </tr> <tr> <td>35 - 44</td> <td>24</td> </tr> <tr> <td>45 - 54</td> <td>23</td> </tr> <tr> <td>55 - 64</td> <td>8</td> </tr> <tr> <td>Over 65</td> <td>5</td> </tr> </tbody> </table>	Age Group	Number of Respondents	16 - 24	12	25 - 34	36	35 - 44	24	45 - 54	23	55 - 64	8	Over 65	5
Age Group	Number of Respondents														
16 - 24	12														
25 - 34	36														
35 - 44	24														
45 - 54	23														
55 - 64	8														
Over 65	5														
Gender	64% male, 39% female														
Ethnicity	<table border="1"> <caption>Ethnicity Data</caption> <thead> <tr> <th>Ethnicity</th> <th>Number of Respondents</th> </tr> </thead> <tbody> <tr> <td>White British</td> <td>99</td> </tr> <tr> <td>Black/African/Carribbean/Black British</td> <td>21</td> </tr> <tr> <td>Other</td> <td>6</td> </tr> <tr> <td>Asian / Asian British</td> <td>1</td> </tr> </tbody> </table>	Ethnicity	Number of Respondents	White British	99	Black/African/Carribbean/Black British	21	Other	6	Asian / Asian British	1				
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Sector



Region



4 RESEARCH FINDINGS

4.1 POSSIBLE CHANGES TO LAND USE AND TRANSPORT

Through our work we have seen a clear picture that transport professionals would expect land use to change as a result of the pandemic. A majority of respondents expect to see demand for leisure and retail, housing and employment space all change over the next 5-10 years.

Conversely, it was expected that leisure and social trips were expected to increase (46%) compared to pre-Covid. A majority (70%) only expected relatively minor changes in education trips.

4.1.1 Commuting, business travel and housing

Respondents expected to see a decrease or significant decrease in commuting trips (89%) and business trips, including freight and distribution, (55%) over the next 5-10 years compared to pre-Covid, see Figure 2 below. In our semi-structured interviews respondents expected the changes in commuting and business travel to cause a decrease in demand for city centre travel with a less prominent drop off in demand for the urban periphery and other areas.

This was largely due to the expected increase in remote and home working patterns continuing after the pandemic, 95% of respondents expected to see an increase or significant increase in home working in the long-term compared to pre-Covid.

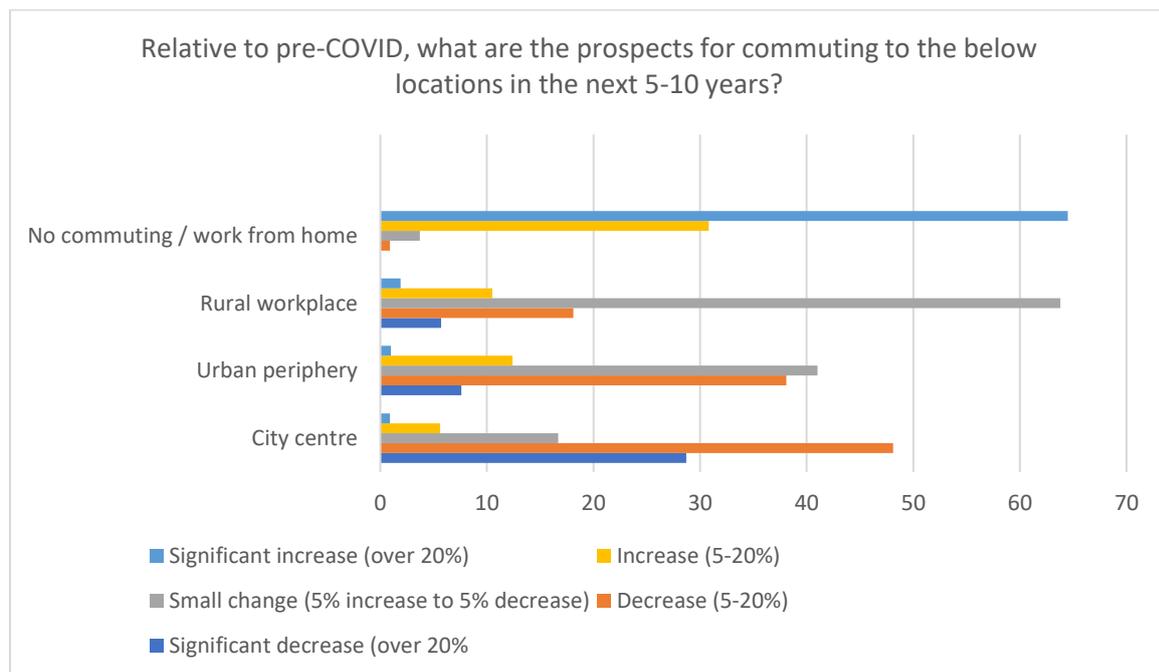


Figure 2: Survey responses for prospects of commuting by destination

In our interviews a number of respondents expressed that they felt a clear distinction is needed between those jobs where remote working is practical, largely in the Knowledge Industry Based Service (KIBS) sector, and those where presence in a workplace is essential such as public facing service sector, manufacturing and hospitality jobs where differences in travel patterns are expected to be seen. This could result in a significant divergence of requirements and expectations of transport provision in the future and could have implications for economic rebalancing as research

has shown that jobs that can be done from home typically pay more^x. Even within the KIBS sector it was felt that there would be some heterogeneity of the office: home ratio as a place of work as exemplified by recent comments made rejecting the notion of home working by Goldman Sachs boss, David Solomon^{xi}.

Research by Marsden et. al.^{xii} estimate that if people who used to commute by car and who are now working from home were to continue to do so for two days a week, almost 14% of morning car trips would be cut, resulting in traffic reductions similar to those seen in school half terms.

Interviewees largely expected there to be reduced demand for city centre travel as a result of home working to be compounded by an expected increase in demand away from the city centre as those in KIBS employment may search for less dense housing away from the urban centres as commuting time becomes less of a consideration. This in turn may reduce the demand for public transport especially during the previous AM and PM peaks for commuting from urban peripheries with a significant proportion of KIBS now working from home. This is something further considered in the transport policy and funding section.

4.1.2 Consumption and retail

Survey respondents expected to see significant changes in shopping patterns with a decrease/significant decrease in shopping and retail trips (58%) in the long-term compared to pre-Covid, see Figure 3 below. Some interviewees expressed the view that this was not necessarily a change caused by Covid-19 though, but a move already in train but exacerbated by the pandemic.

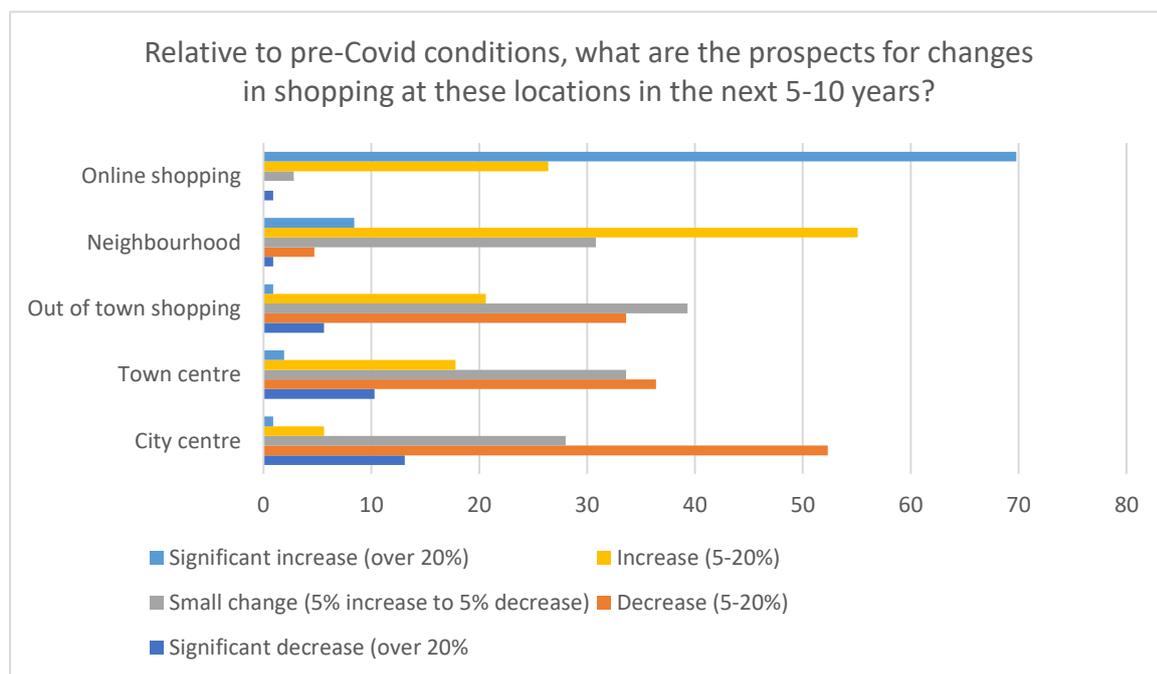


Figure 3: Survey responses for shopping trips by destination

Nearly all respondents (96%) expected to see continued growth in online shopping after the pandemic with a reduction in shopping trips made to city centres particularly. Decrease in shopping trips to town centres and out of town shopping were also expected, but to a lesser extent. Some interviewees felt that due to both consumer preference and changing commuting patterns that neighbourhood and local shops would be less affected and others expected to see an increase in

demand for these services, something underpinned by the closures of stores of several household name department and retail stores over the last 12 months. This increase in online shopping has in part resulted in a growth in LGVs on the UK's roads through the increased provision of frequent express deliveries in urban areas^{xiii}.

4.1.3 What becomes of city and town centres?

The cumulative effect of reducing demand for employment space, housing and shopping trips to city and town centres leaves a fundamental question for planners to consider on how best to reinvent and re-energise these areas in the future. One example that has gained publicity in the British press has been to convert city centre space into recreational space. Stockton-on-Tees Council is one example of this having developed plans to demolish part of the high street and replace it with a riverside park providing views over the Tees and recreational space with the aim of encouraging people into the town^{xiv}. These types of initiatives are something that is supported by central Government investment through the Towns Fund and Future High Street Fund.

In a number of the semi-structured interviews respondents, although confident in the direction of change in areas such as home-working increase and a demand for housing away from city centres, were unsure of the scale and rate of change. Some expressed a concern that social groups should not be treated as homogenous and that differences of trip rates and purposes within and between different social groups could remain and even increase.

The consideration of transport and land use changes has indicated there is the potential for significant changes in travel patterns and land use demand, but that significant uncertainty has been brought to light due to the pandemic. It was felt that a number of trends were already happening but that the events since March 2020 have acted as a catalyst, particularly for the effects of home-based working for previously office-based roles. As people are actively considering change there is an opportunity to make transformation changes across land use and transport planning that would have been more difficult to effect change before the pandemic.

The changes set out in this section have a number of possible consequences for transport policy and investment as well as decarbonisation of the sector which were explored with the interviewees and through the questionnaire. Our findings in these areas are now taken in turn.

4.2 POSSIBLE CHANGES FOR TRANSPORT POLICY AND FUNDING

4.2.1 Changes to Government funding for transport

The survey found that 45% of respondents think that there will be an overall increase in levels of Government funding for transport in the long-term compared to pre-Covid (Figure 4). A reason suggested for this during the interviews and through open text responses to the survey, is that there will be increased capital expenditure linked to recovering the national economy and 'building back better'.

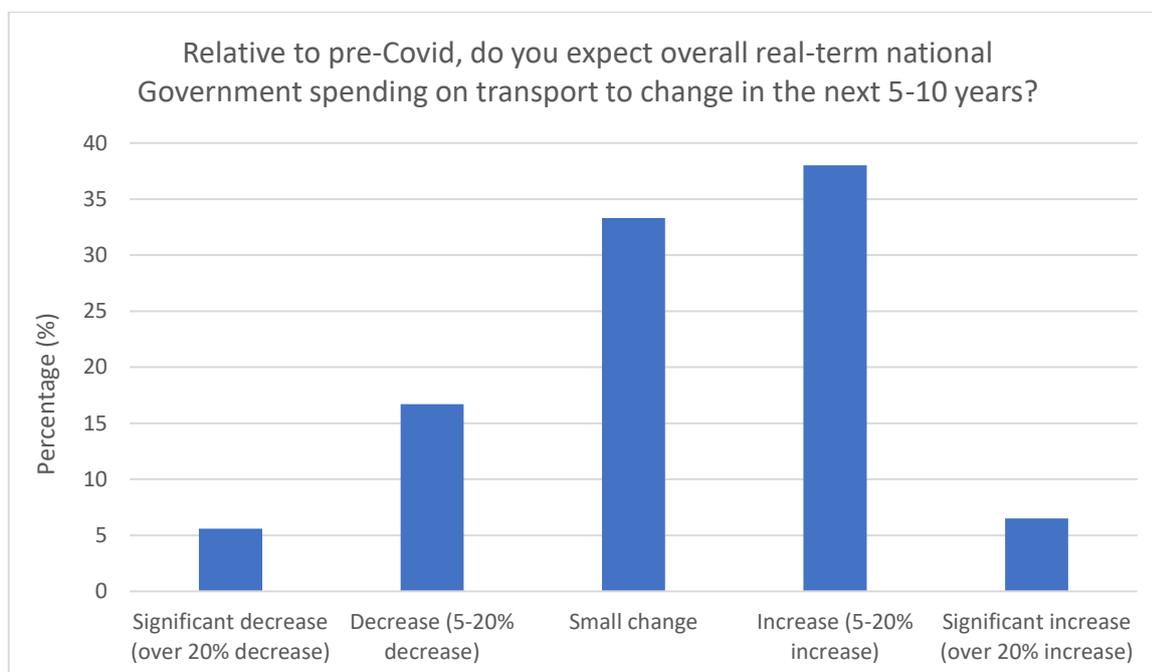


Figure 4: Survey results for expectation in relation to future Government spending on transport

Responses to the survey (Figure 5) show there is an expected increase of funding for active travel and local public transport in the long-term compared to pre-Covid, although there is a range of responses for all kinds of infrastructure types. In the semi-structured interviews and the roundtable discussion, a shift in focus towards active travel and local public transport was associated by some interviewees with a shift in public attitudes towards sustainability and an increased demand to fund public transport following revenue challenges. This would also require a shift in Government policy in favour of sustainable modes.

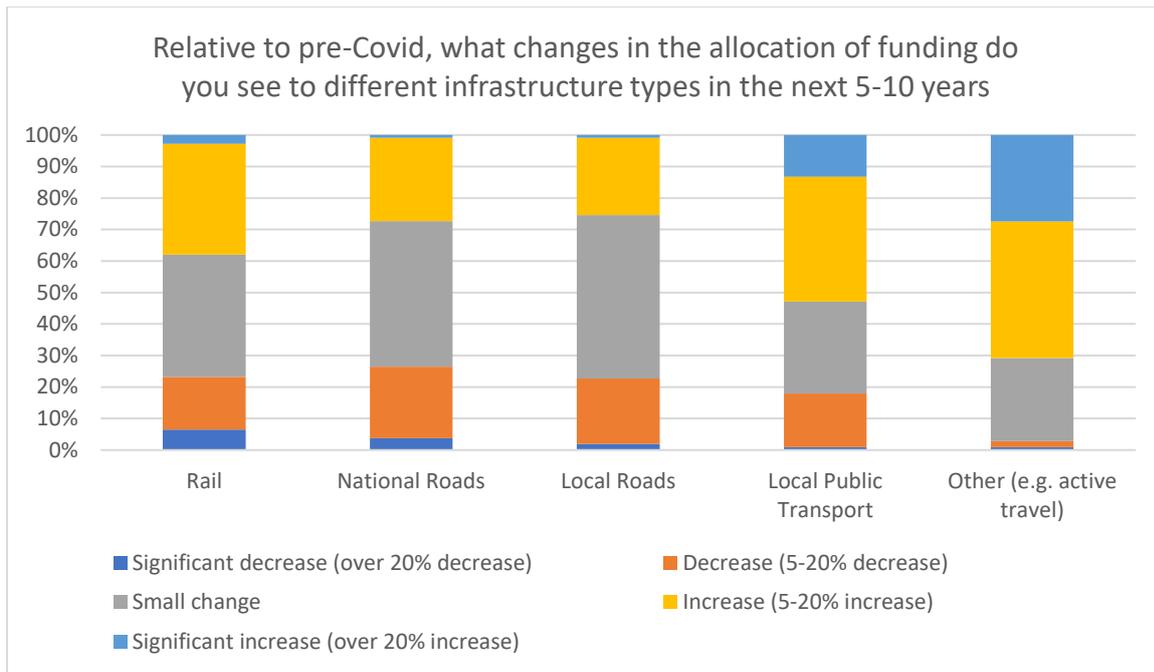


Figure 5: Survey results for expected changes to funding allocations by mode/scheme type

4.2.2 Direction of Government policy

However, there is considerable uncertainty about the direction of Government policy (for example, prioritisation of economic recovery over environmental sustainability), hence the wide range of responses. In addition, the view that there will be a shift towards active travel is contrasted with Government commitments to fund expensive capital schemes, such as HS2 and NPR. There was also a significant amount of pessimism for change cited in the open text responses to the survey and in the semi-structured interviews and the roundtable discussion, with one respondent writing that *'unfortunately things for transport are going to get worse before they get better. The govt. will look to make more savings following losses/ costs of the pandemic and projects which so little return on investment financially ... I fear will be at risk'*.

It is important to note that the pandemic has already impacted public funding, at least in the short term. In particular, local buses have seen a massive uptick in public funding, supporting an industry that had already been in decline. One interviewee highlighted how the extreme acceleration of bus patronage decline as a result of the pandemic may have brought funding to the sector that would not have happened had the change been more gradual. The new National Bus Strategy also highlights the importance of bus services to the Government. Whilst some respondents see this as a positive step, others felt that *'shorter term changes may not be sustained into the longer term'*.

Linked to this, Government has committed to 'build back better' and to 'level up' regional economies – the transport industry should take steps to influence these policies. In particular, the industry should consider the potential market-changes as a result of the pandemic (e.g., reduced commuting and business travel). These market changes, as well as changes to funding and policy priorities, will impact the business cases for both committed and future schemes.

4.3 POSSIBLE CHANGES TO TRANSPORT DECARBONISATION

4.3.1 Importance of decarbonisation in influencing mode choice

The survey results (Figure 6) show that respondents expect climate and environment to have a greater influence on travellers' modal choice in the long-term compared to pre-Covid with the proportion increasing more than threefold (5% to 16%). One reason suggested for this during the interviews was that Covid-19 has given people a chance to pause, read and understand more about decarbonisation and the role they can play. This aligns with the concept of 'Responsible Transport'^{xv} whereby individuals take greater responsibility over their actions which, in turn, creates collection action and demand to drive further improvements, in this case the decarbonisation agenda.

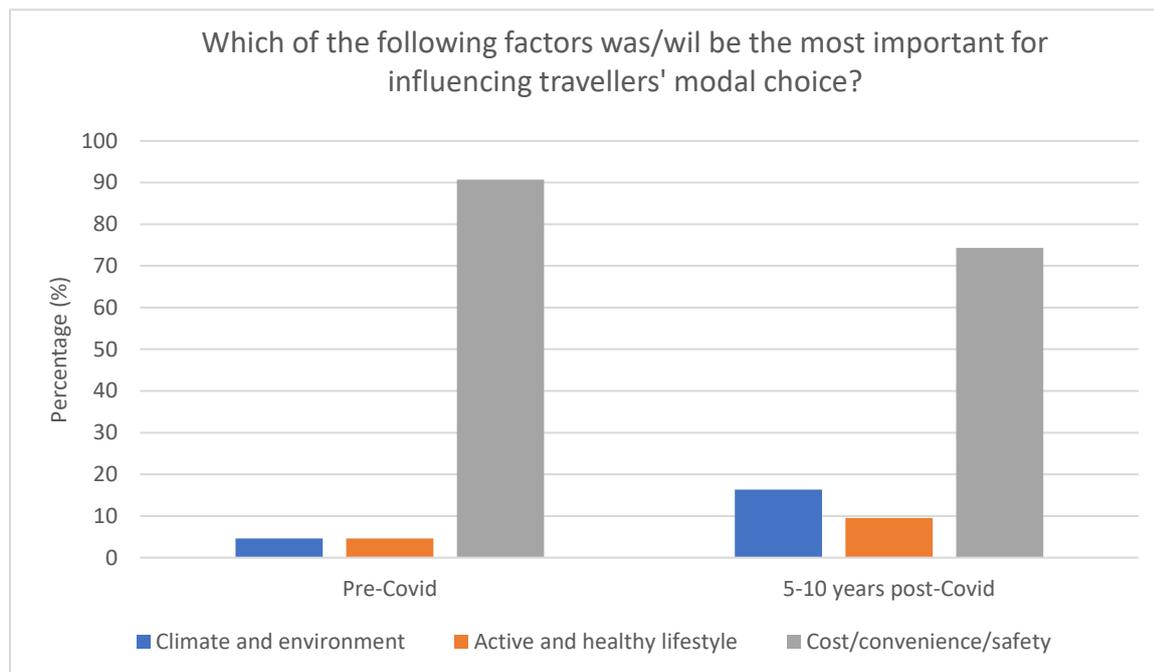


Figure 6: Most important factor in influencing travellers' modal choice pre-Covid and in the long-term

Nevertheless, as succinctly put by another interviewee, *'people will talk about environmental factors in nice terms, but affordability is the key issue for all'*. This resonates in the survey findings with almost 75% of respondents still seeing cost/convenience/safety as the most important factor influencing travellers' modal choice in the long-term. This highlights an area of uncertainty for the long-term around whether the apparent increase in environmental consciousness during the pandemic will be long lasting which will be heavily influenced by Government policy.

4.3.2 Covid-19 and rate of decarbonisation

The survey results (Figure 7) show that a majority expect that the long-term impact of Covid-19 will result in an increased rate of decarbonisation in the long-term compared to pre-Covid. Yet this slight majority (53%) highlights a high level of uncertainty relating to Covid-19's impact on decarbonisation with 19% expecting Covid-19 will result in a decreased rate of decarbonisation and 29% expecting no change. In contrast to the survey results, in the interviews it was noticeable how most respondents were pessimistic about Covid-19's increased impacts on the rate of decarbonisation. One interviewee even suggested transport practitioners may be more optimistic about the impact of Covid-19 on decarbonisation compared to the general public.

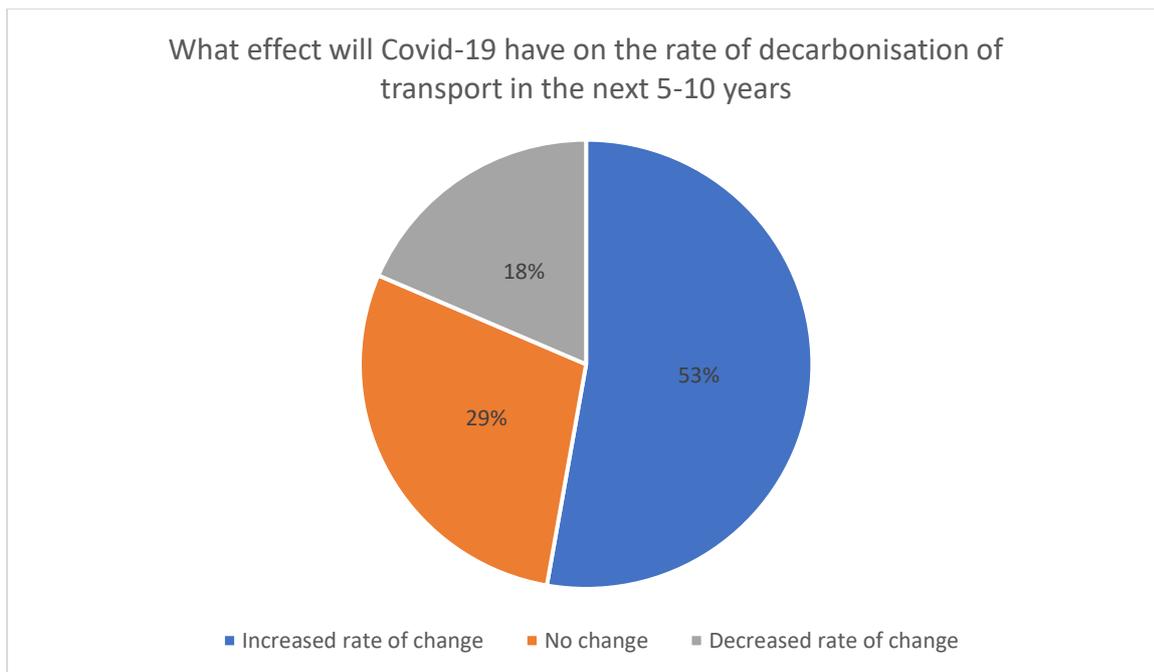


Figure 7: Survey results for the effect Covid-19 will have on the rate of decarbonisation of transport in the next 5-10 years

As mentioned in section 4.3.1, affordability is and would still appear to be the greatest influence on modal choice in the future. Several interview respondents suggested that decarbonisation is unlikely to be a day-to-day thought for people with a potential explanation for this linking to Maslow’s hierarchy of needs^{vi}. In simple terms, transport affordability is a more basic need and is therefore a high priority to everyone, whereas the environmental impact of transport is less important to some people given the issues they face in relation to affordability. Given the priority and necessity to decarbonise transport there is therefore a need to work towards increasing the importance of decarbonisation in users’ decision making process.

Another area of pessimism drawn out during the semi-structured interviews was around Government policy during the pandemic and the potential implications this may have on decarbonisation. The Government messaging of “avoid public transport wherever possible...Instead people should drive or better still walk or cycle”^{xvii} caused several interviewees to suggest that a consequence of this will be an increased level of single occupancy car use. This rhetoric may also potentially damage people’s trust in public transport^{xviii} in the long-term. Whilst the legacy of fear of Covid-19 is likely to have subsided in the long-term, the impact of the Government’s messaging during the pandemic is likely to impact decarbonisation efforts in the long-term unless Government acts quickly and decisively to ensure public transport is considered safe as restrictions are eased. Although it is expected that a proportion of those increasing car use during the pandemic will remain over the long-term.

Although there was concern amongst interviewees of an increase in single occupancy car trips, the survey results suggest that people expect levels of travel to significantly decrease for some journey purposes. The results show that almost 60% of respondents believe shopping, commuting and business trips will decrease in the long-term compared to pre-Covid. Reduced trip frequency if enduring, is likely to go some way to helping reduce emissions from transport. However, it was mentioned by several interviewees that if people are travelling less frequently, they may not be as concerned about their mode choice when making their journey which has potential negative impacts

for decarbonising transport. This research also proposes a new concept of 'binge-travelling' in a post-Covid world whereby people travel less frequently for certain journey purposes, but when they do decide to travel it is in excess of what we normally expected pre-Covid. The survey findings show an expectation of leisure and social trip purposes increasing in the long-term compared to pre-Covid suggesting that these may be potential trip purposes where 'binge-travelling' could be a possibility.

5 SUMMARY AND RECOMMENDATIONS

5.1 SUMMARY OF KEY FINDINGS

This research has aimed to consider the potential long-term (5-10 years) implications of Covid-19 on travel patterns and transport planning and policy, a timescale which has not been considered based on a literature review. The research is also unique in that it aimed to understand the potential implications from the transport practitioner perspective to get an 'expert' view from the sector rather than focusing on the public perception or the views of a single organisation, which other research has done.

To gauge the opinions of transport practitioners, a survey was produced which asked for their opinion on future travel patterns, transport and land use, transport policy and funding and transport and decarbonisation in light of the impacts of Covid-19. Following this, a number of semi-structured interviews were held to discuss land use, policy and funding and decarbonisation in greater detail. The survey and semi-structured interviews helped highlight where there was consensus in views across the sector and where there was also the greatest level of uncertainty based on divergence in views. The researchers are supportive of the 'decide and provide' approach to transport planning seeing areas of uncertainty as areas with the greatest opportunity for influence.

Therefore, we have developed a series of recommendations in response to the findings of our research. A set of infographics have been produced to provide a summary of the main findings and recommendations for each research area. The table below list all the recommendations that have been identified by theme.

For further research

Related Theme	Research finding	Recommendation
Travel patterns and land use	Survey results suggested that working from home for at least part of the week is likely to be a trend which has been accelerated by Covid-19. However, home working is not possible for everyone due to the requirements of their job.	Research the transport needs of both hybrid workers and those who continue to need to travel to work to consider divergence in requirements for transport and explore heterogeneity within these groups
Travel patterns	Covid-19 has increased uncertainty in many areas of transport planning and forecasting.	Due to the lack of certainty over the long-term aggregate and disaggregate travel demand, due consideration should be given to this uncertainty in transport planning through the use of scenario testing. Separately, patronage figures should be closely monitored as the Covid-19 restrictions are eased over the course of 2021 to provide early indication of how

		transport may change in the long-term
Travel patterns and decarbonisation	The environmental impact of travel choices is not a main consideration for most people with affordability the key factor	Government and decision making authorities to consider ways in which to better inform people about the carbon impacts of their travel choices
Travel patterns and decarbonisation	The environmental impact of travel choices is not a main consideration for most people with affordability the key factor	Undertake research to determine the public views on what needs to be done to increase the importance of decarbonisation in users' decision making process

For Transport and Land Use Planning

Related Theme	Research finding	Recommendation
Land use and decarbonisation	Increase in home working during the pandemic compared to pre-Covid is expected to persist in the long-term	Professionals in the transport sector should consider in the development of plans and strategies the opportunity presented by an increase in home working for reducing carbon emissions as a result of less travel
Land use	Housing development and demand expected to be less dense and in the peripheries of towns and cities, away from the centre of urban areas	Decision making authorities and developers should ensure new housing and retail developments are served by attractive public transport to reduce car dependency, particularly in areas of existing congestion

For Government

Related Theme	Research finding	Recommendation
Travel patterns and policy and funding	Government messaging about the safety of public transport during the pandemic has resulted in a decline in public transport patronage which may persist after restrictions are eased	Government should promote the safety of public transport when risk of infection is lower to support a return to public transport
Policy and funding	Government has supported public transport during the pandemic to allow services to run. Just over half of survey respondents expected there to be an increase in funding for local public transport in the next 5-10 years compared to pre-Covid with the	Government should provide continued financial support of public transport services, making the case for buses, light-rail and heavy-rail for national and local economic recovery, and decarbonisation

	picture less clear for rail and changes to funding.	
Land use and policy and funding	<p>Uncertainty in the future for mass intercity travel due to reduction in business and commuting travel and uptake of virtual communication.</p> <p>Expected increase in travel within the local area in the long-term compared to pre-Covid</p>	Government should prioritise transport investment and projects that serve local and community needs
Decarbonisation and policy and funding	<p>Growing environmental and climate crisis support amongst the public.</p> <p>Uncertainty about the future of funding for transport, particularly for non-capital and non-active travel schemes</p>	Government should ensure decarbonisation objectives, sustainable transport policies and the environmental betterment are prioritised in the post-Covid recovery. Clarity on the impacts of policy on the decarbonisation targets should be provided
Policy and funding	The impacts of Covid-19 have the potential to act as a catalyst for change in the transport sector and for individual travel choice	Government should seek opportunities to maximise the opportunity for behaviour change amongst the population to this end

For decision making authorities

Related Theme	Research finding	Recommendation
Policy and funding and land use	Increase in home working during the pandemic compared to pre-Covid is expected to persist in the long-term	Decision making authorities should continue to consider how to promote more flexible working practices that could offer a reduction in congestion and train overcrowding during the AM and PM peak periods as some return to office based work starts as restrictions are gradually removed over the summer months of 2021.
Land use and travel patterns	Nearly all respondents expect to see continued growth in online shopping and delivery services after the pandemic with a reduction in shopping trips made to city centres, and to a lesser extent town centres and out of town shopping	Policy makers should develop better reporting tools to understand last mile freight movements and how these patterns are changing as well as incentivising more efficient last mile operations such as reducing repeat deliveries, aiding the provision of local depots and supporting the transition to electric LGVs

Land use	Reduction in demand for employment space, housing and shopping trips to city centres	Policy makers and planners should seize the opportunity to reinvent city and town centres. Examples elsewhere such as the provision of public realm and recreational space should be considered and their success or otherwise monitored
Policy and funding	Pre-Covid predictions for travel demand are likely to be outdated due to the likely long-term increase in a hybrid working model of working from home and in a formal workplace	Business cases for committed and future schemes should be reviewed against a range and future scenarios, as is done in the recent publication by the National Infrastructure Commission, <i>Behaviour change and infrastructure beyond Covid-19</i> ^{xix}
Decarbonisation	Increasing desire amongst sections of the population with a greater focus on ensuring their behaviour is more sustainable. May increase uptake of electric vehicles	Decision making authorities to ensure alternative fuel infrastructure, for example electric charge points, are in place so transport networks are 'ready' for the uptake of alternative fuel source vehicles to help contribute to decarbonising transport
Decarbonisation	It is uncertain whether the public sentiment of environmental consciousness and will to support decarbonisation efforts during the pandemic will endure. It was felt this is likely to be heavily influenced by Government policy if it is to be long lasting	Decision making authorities to consider policies to reduce car use, where genuinely affordable and viable alternatives are available, by focusing on the benefits to people and the environment whilst working to make low carbon travel modes the most efficient and affordable modes
Travel patterns	Social and leisure trips expected to increase, particularly at evenings and weekends for home workings, highlighting the possible concept of 'Binge Travelling'	Decision making authorities and transport operators to work together to deliver a step change improvement in the public transport offer in the evening and at weekends where demand is likely to be seen as a result of increased leisure travel

As mentioned in Section 3.1, inclusivity was identified as a theme from our literature review and the research group's interests as an area to explore to understand what the potential long-term implications of Covid-19 may be on the inclusivity of transport. It was acknowledged by the research group that, based on the survey results, there was a high level of uncertainty around the potential impacts of the pandemic. Whilst inclusivity has been implicitly considered within the

recommendations identified as part of this research, it is felt that inclusivity of transport in the post-Covid recovery is a fundamental area for further research and the recommendations identified do not do it justice. Therefore, a final recommendation is for important future research to be undertaken to understand what barriers there are to inclusive transport to ensure everyone can access the services and opportunities they want and need and what needs to be done to resolve these issues using Covid-19 as a catalyst for change.

6 ACKNOWLEDGEMENTS

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Dunstan Westbury

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7.1 THE AUTHORS

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7.2 DISCLAIMER

The findings presented within this report and associated infographics are the views solely of the authors. They do not necessarily reflect the views of either the Future Transport Vision Group, the Rees Jeffrey Road Fund or the organisations the authors work for.

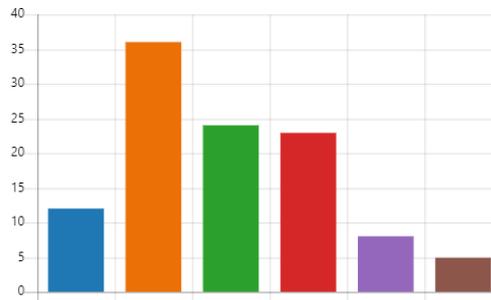
ANNEX A: SURVEY RESULTS

1. What is your age?

[More Details](#)

- 16-24
- 25-34
- 35-44
- 45-54
- 55-64
- Over 65

12
36
24
23
8
5



2. What is your gender?

[More Details](#)

[Insights](#)

- Female
- Male
- Non-binary
- Other
- Prefer not to say

39
69
0
0
0

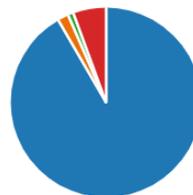


3. What is your ethnicity?

[More Details](#)

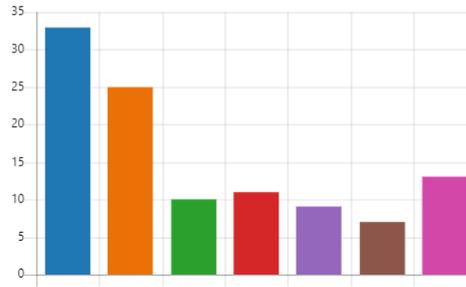
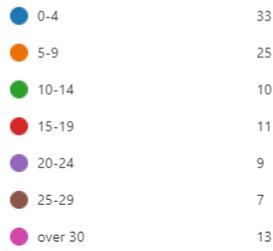
- White British
- Asian/Asian British
- Black/African/Caribbean/Black...
- Other

99
2
1
6



4. Years of experience in transportation sector

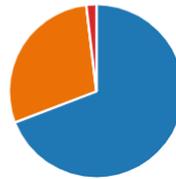
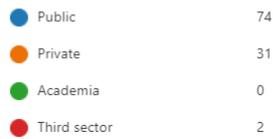
[More Details](#)



5. What sector do you predominantly work in?

[More Details](#)

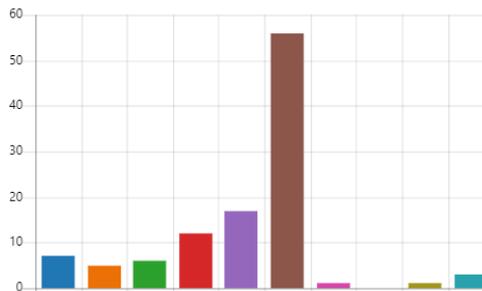
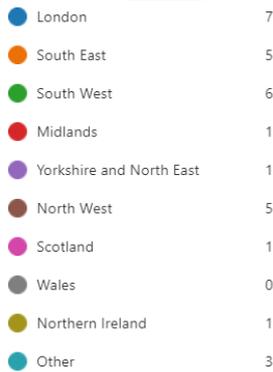
[Insights](#)



6. What region are you based in?

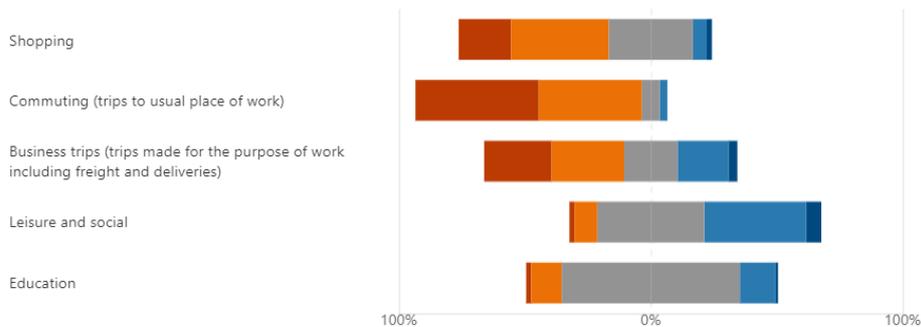
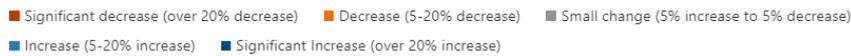
[More Details](#)

[Insights](#)



7. Journey purpose: How do you expect trip frequency across different journey purposes to change in the next 5-10 years compared to pre-COVID?

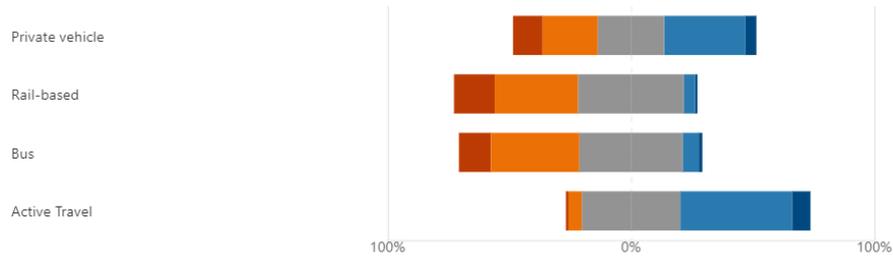
[More Details](#)



8. For shopping trips

[More Details](#)

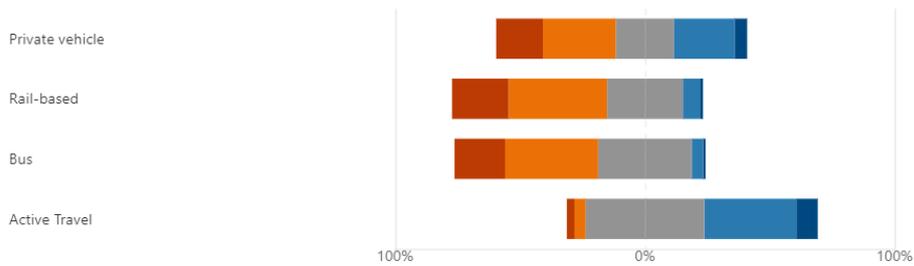
■ Significant decrease (over 20% decrease)
 ■ Decrease (5-20% decrease)
 ■ Small change (5% increase to 5% decrease)
 ■ Increase (5-20% increase)
 ■ Significant Increase (over 20% increase)



9. For commuting trips (trips to usual place of work)

[More Details](#)

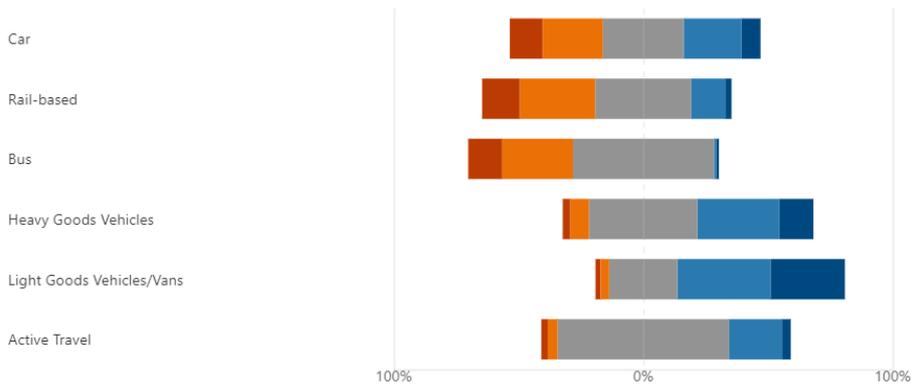
■ Significant decrease (over 20% decrease)
 ■ Decrease (5-20% decrease)
 ■ Small change (5% increase to 5% decrease)
 ■ Increase (5-20% increase)
 ■ Significant Increase (over 20% increase)



10. For business trips (trips made for the purpose of work including freight and deliveries)

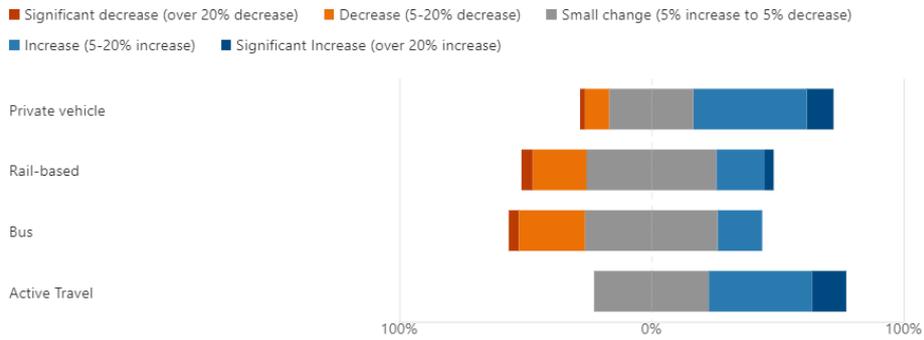
[More Details](#)

■ Significant decrease (over 20% decrease)
 ■ Decrease (5-20% decrease)
 ■ Small change (5% increase to 5% decrease)
 ■ Increase (5-20% increase)
 ■ Significant Increase (over 20% increase)



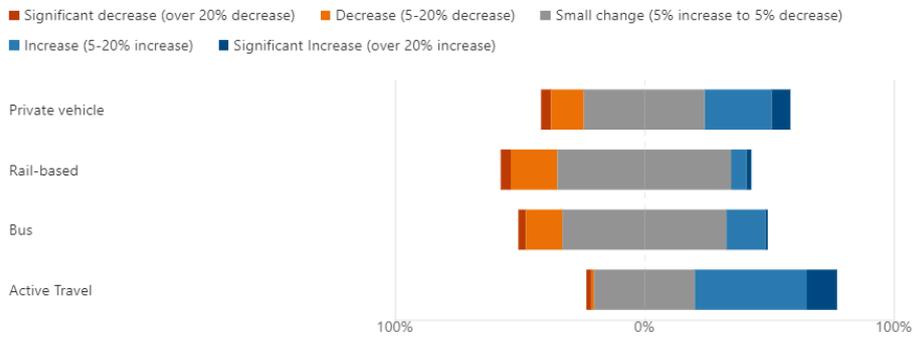
11. For leisure and social trips

[More Details](#)



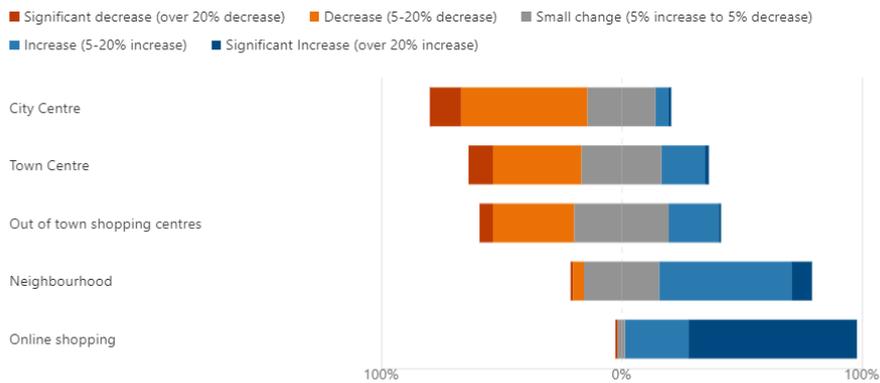
12. For education trips (trips to school or college, including escorting trips)

[More Details](#)



13. Relative to pre-Covid, what are the prospects for shopping at these locations in the next 5-10 years?

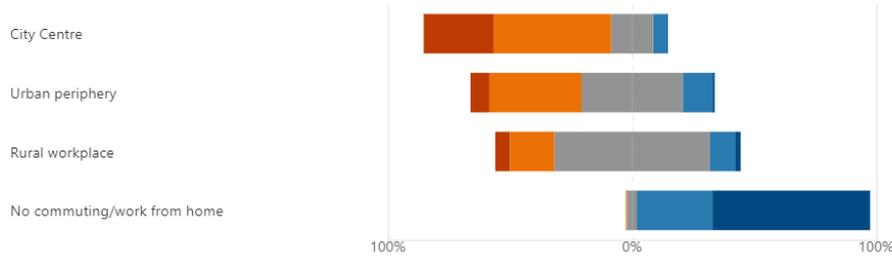
[More Details](#)



14. Relative to pre-COVID, what are the prospects for commuting to the below locations in the next 5-10 years?

[More Details](#)

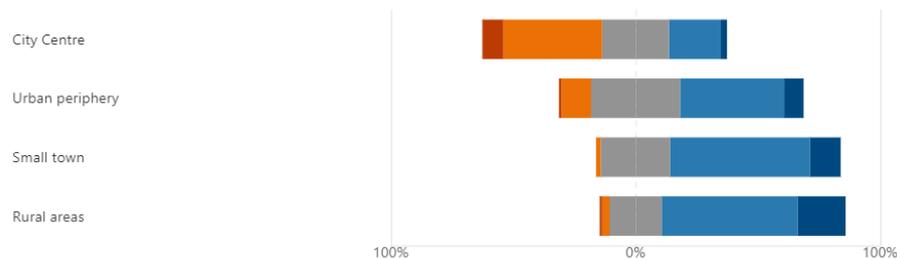
■ Significant decrease (over 20% decrease)
 ■ Decrease (5-20% decrease)
 ■ Small change (5% increase to 5% decrease)
 ■ Increase (5-20% increase)
 ■ Significant Increase (over 20% increase)



15. Relative to pre-COVID, how do you see demand for housing changing in the below locations in the next 5-10 years?

[More Details](#)

■ Significant decrease (over 20% decrease)
 ■ Decrease (5-20% decrease)
 ■ Small change (5% increase to 5% decrease)
 ■ Increase (5-20% increase)
 ■ Significant Increase (over 20% increase)



16. Which of the following factors was/will be the most important for influencing travellers' modal choice?

[More Details](#)

■ Climate and environment
 ■ Active and healthy lifestyle
 ■ Cost/convenience/safety



17. What effect will Covid-19 have on the rate of decarbonisation of transport in the next 5-10 years?

[More Details](#)

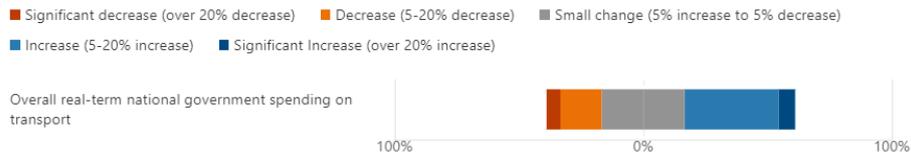
Insights

● Increased rate of change 57
● No change 31
● Decreased rate of change 20



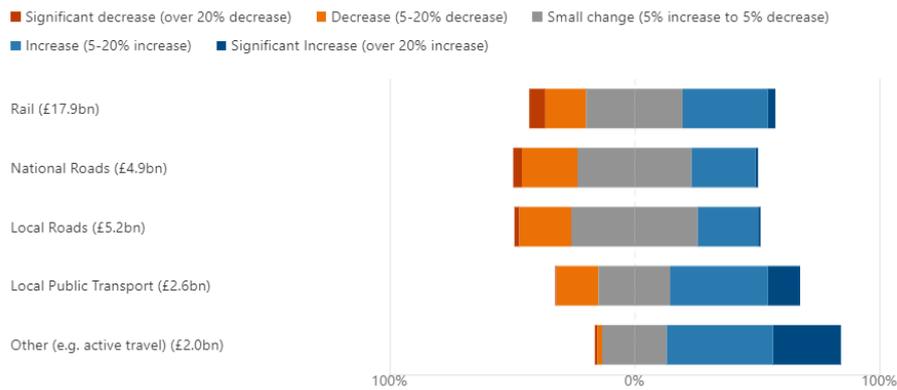
18. Relative to pre-COVID, do you expect overall real-term national government spending on transport to change in the next 5-10 years?

[More Details](#)



19. Relative to pre-COVID, what changes in the allocation of funding do you see to different infrastructure types in the next 5-10 years?

[More Details](#)



20. How strongly do you agree with the following statement: The impact of Covid-19 will result in a more inclusive* transport network in the next 5-10 years. *meets the needs of all people

[More Details](#)

Strongly agree	6
Agree	27
Neither agree or disagree	42
Disagree	25
Strongly disagree	7



ANNEX B: REFERENCE LIST

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