Department for Transport

INDUSTRIAL STRATEGY

Future of Mobility
Call for Evidence

Moving Britain Ahead

July 2018

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Contents

Foreword 4
Executive summary 6
What will happen next 6
How to respond 7
Freedom of Information 7
Privacy 8
1. Future of Urban Mobility Strategy 9
Background 9
Trends 11
Our Approach 14
2. Future of Mobility Grand Challenge 16
'Mission-oriented' policy-making 16
Initial priorities 18
Other comments 19
Annex A: Full list of consultation questions 20
Future of Urban Mobility Strategy 20
Future of Mobility Grand Challenge 21
Annex B: Consultation principles 22

Foreword

We are on the cusp of a profound change in how people, goods and services move around the country, driven by extraordinary innovation in engineering, technology and business models. Large investments are being made in the electrification and automation of road vehicles, in the modernisation of rail services and in the development of autonomous aerial and marine transport. New market entrants and new business models, such as ride hailing, ride sharing and Mobility as a Service, are challenging our assumptions about how we travel.

In recognition of the opportunities presented by these transformations, the Future of Mobility was one of four Grand Challenges established in the Industrial Strategy to improve people's lives, increase the country's productivity and put the UK at the forefront of the industries of the future.[1] All the Grand Challenges are closely linked; achieving our ambitions for the Future of Mobility will help us meet the needs of an Ageing Society, capitalise on UK strengths in Artificial Intelligence and Data and support Clean Growth.

Delivering on the Future of Mobility Grand Challenge could substantially reduce greenhouse gas emissions and other pollutants from the UK's road and rail network. Automated vehicles could make our roads safer, and mobility could be available when we want it, where we want it and how we want it.

The future of mobility also presents enormous economic opportunities for the UK. We have strengths in many of the most relevant areas of research and development, including artificial intelligence and complex vehicle engineering. We have dynamic businesses developing new mobility solutions, and innovative, strong and diverse automotive, rail, maritime and aviation sectors. We have a long history of bringing transport innovation to the world.

However, the transition to the future of mobility will bring challenges alongside opportunities. Local areas will need to consider how best to ensure that new technologies and services develop in line with their strategic objectives and protect the interests of transport users and residents. How do we ensure that the benefits offered by new technologies are accessible to all? What are the implications of new business models for existing mass transit networks? How might new ways of consuming mobility be used to encourage sustainable, active modes of transport?

[1] https://www.gov.uk/government/publications/industrial-strategy-the-grand-challenges/industrial-strategy-the-grand-challenges

We want to help innovators and decision-makers navigate questions such as these as they look to maximise the opportunities presented by the transformations in mobility.

How we get around is likely to change significantly across our towns, cities and countryside. What this means for users will vary from place to place, but we expect some of the most complex shifts to affect densely populated areas. This is why we are developing a Future of Urban Mobility Strategy first, to be published by the end of 2018. The Strategy will be a short document setting out the principles that will guide Government's approach to emerging mobility technologies and services in cities. It will not duplicate our existing work to support innovation in particular modes, but will take a holistic view of how new developments across modes and technologies should be addressed in the next couple of decades. It will recognise the freedom of cities to shape their own visions for the future, while equipping them with the right tools to realise these visions in a context of change and uncertainty.

The Strategy will form part of the wider Grand Challenge on the Future of Mobility. The remit of this challenge is broader than urban areas, and a separate call for evidence on the opportunities for rural areas will follow in due course. We want to take full advantage of changes in mobility to improve the lives of people across the country and support our Industrial Strategy. Continuing to be one of the most open environments in the world for transport innovation is important to this goal, so we are undertaking a review of all relevant legislation to ensure our regulatory framework evolves with the times and technologies.

This call for evidence will supplement our existing evidence base, including the Future of Mobility Foresight work conducted by the Government Office for Science, and will inform not only the Strategy document, but also our regulatory review and wider work on the Grand Challenge.[2] We welcome your input to help us ensure our mobility systems and the legislation underpinning them are fit for the future.

Chris Grayling MP

Secretary of State for the Department for Transport

[2] For the Government Office for Science's Future of Mobility Foresight work, see https://www.gov.uk/government/collections/future-of-mobility

Executive summary

This call for evidence seeks views and evidence from all those with an interest in the mobility ecosystem.

It is split into two main parts:

- Part 1 seeks views and evidence to inform our **Future of Urban Mobility Strategy**. It is structured in three sections:
  - The **background** against which changes to transport are occurring;
  - Our assessment of the **emerging trends** that will shape urban mobility in the next couple of decades. This section asks for views on whether we have identified these correctly and on their likely impacts;
  - Consideration of **the approach Government should take** to help cities harness the opportunities and address any challenges presented by these trends.
- Part 2 looks beyond the urban context to inform our wider work on the **Future of Mobility Grand Challenge**. It asks how best Government can support innovation across the country, with a focus on:
  - **'Mission-oriented'** policy-making;
  - Ensuring a **regulatory framework** that evolves with the times; and
  - Resolving barriers to **data** sharing and use.

What will happen next

A summary of responses will be published within three months of the call for evidence ending.

Analysis of responses will inform our work on the Future of Mobility Grand Challenge, including our Future of Urban Mobility Strategy, to be published by the end of 2018, and our early priorities for regulatory review.

How to respond

The consultation period began on 30 July 2018 and will run until **10 September 2018**. Please ensure that your response reaches us before the closing date. If you would like further copies of this consultation document, it can be found at https://bit.ly/2zJGbae or you can contact futureofmobility@dft.gov.uk for alternative formats (Braille, etc.)

It would be helpful if you would respond online. Alternatively, you can send your response to:

Department for Transport Zone 1/33
Great Minster House
33 Horseferry Road
London SW1P 4DR

Email: futureofmobility@dft.gov.uk. If sending responses by email, please keep responses to a **maximum of 10 pages.**

When responding, please state whether you are responding as an individual or representing the views of an organisation. If responding on behalf of a larger organisation, please make it clear who the organisation represents and, where applicable, how the views of members were assembled.

Please note that we do **not** expect you to submit evidence or views in response to every question listed if not applicable.

Freedom of Information

Information provided in response to this consultation, including personal information, may be subject to publication or disclosure in accordance with the Freedom of Information Act 2000 (FOIA) or the Environmental Information Regulations 2004.

If you want information that you provide to be treated as confidential, please be aware that, under the FOIA, there is a statutory Code of Practice with which public authorities must comply and which deals, amongst other things, with obligations of confidence.

In view of this it would be helpful if you could explain to us why you regard the information you have provided as confidential. If we receive a request for disclosure of the information, we will take full account of your explanation, but we cannot give an assurance that confidentiality can be maintained in all circumstances. An automatic confidentiality disclaimer generated by your IT system will not, of itself, be regarded as binding on the Department.

Privacy

Whilst it is not our intention to identify individuals as part of this survey, if you do provide any information that allows an individual to be identified, we may use this information to notify you once the summary of responses is available. The purpose of this call for evidence is to inform our work on the Future of Mobility Grand Challenge, including our Future of Urban Mobility Strategy, to be published by the end of 2018, and our early priorities for regulatory review. Any personal information provided will only be kept for the purpose of this call for evidence and will not be shared with anyone else. Your information will be kept securely within DfT and destroyed within 12 months after the call for evidence has closed. More information about DfT's privacy policy can be found at:
https://www.gov.uk/government/organisations/department-for-transport

1. Future of Urban Mobility Strategy

This section seeks views and evidence to inform our **Future of Urban Mobility Strategy**, which will be published by the end of 2018.

Background

1.1 Radical changes in the transport sector will not occur in a vacuum. More gradual underlying trends can help inform an understanding of what the future of mobility might look like, though previous trends may not predict future behaviour.

1.2 Key trends include:

- On average, people are travelling and driving less;[3]
- There has been an increase in travel by train and the London Underground, but mode share of trips has not changed very much in the last 20 years;[4]
- Commuting journeys have decreased due to flexible working, part-time and self-employment and more workers working from home or at multiple sites;[5]
- Van traffic has risen rapidly over the last 20 years, making up around 15% of total road traffic in 2016 compared to 9% in 1986.[6]

1.3 Trends in travel choices show important differences by age. While people aged 70+ have been driving more than previous generations, young people are less likely to learn to drive, and if they do get their licence are likely to drive less.[7] From 1992-4 to 2014, the proportion of 17-20 year olds with driving licences fell from 48% to 29%.[8]

1.4 Looking to the future, a growing, ageing population is likely to increase transport demand and influence the design of mobility solutions. The number of people living in predominantly urban areas of England is projected to increase by 18% between 2014 and 2039, with the highest growth rate expected in the 70+ cohort (see Figure 1).[9]

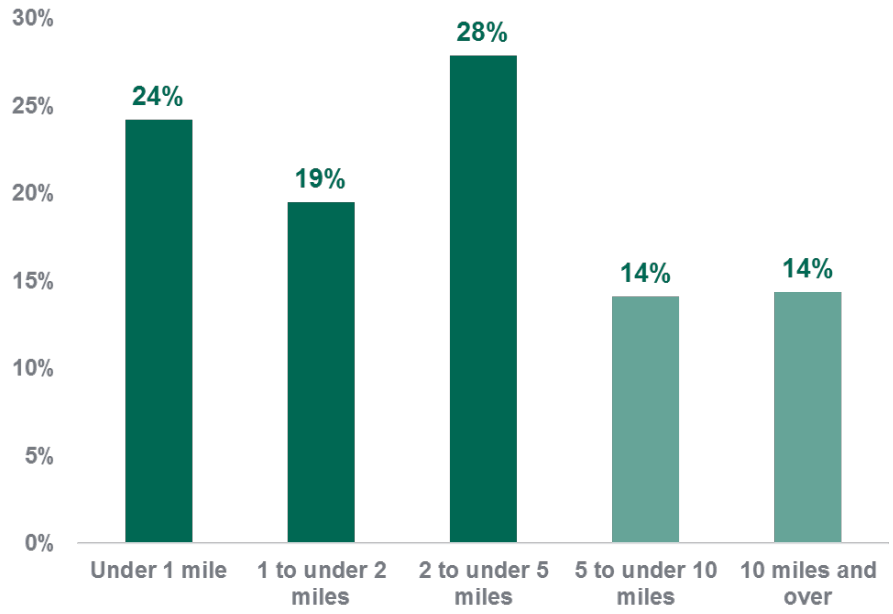
1.5 It is also important to note what is unlikely to change. For example:

- The existing layouts of many of our cities will not change fundamentally;
- Land use planning will remain crucial to determining travel demand;
- The vast majority of urban trips will continue to be short (see Figure 2); and
- The size, occupancy and propulsion system of vehicles using limited road space will continue to be major determinants of congestion levels and wider wellbeing.

[3] See 'Analysis from the National Travel Survey', https://www.gov.uk/government/statistics/national-travel-survey-2016
[4] https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/666843/tsgb0102.ods (for the rise in train & London Underground trips); https://www.gov.uk/government/statistical-data-sets/nts03-modal-comparisons, Table NTS0303 (for modal share)
[5] https://www.gov.uk/government/publications/commuting-trends-in-england-1988-to-2015
[6] https://www.gov.uk/government/statistics/road-traffic-estimates-in-great-britain-2016
[7] For trip rates by age, see https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/632847/nts0601.ods
[8] For young people's travel, see https://www.gov.uk/government/publications/young-peoples-travel-whats-changed-and-why
[9] Source: ONS (2016), Subnational population projections for England: 2014-based projections.

Figure 1: Projected percentage increase in population of predominantly urban areas in England between 2014 and 2039, by age group[10]

Figure 2: Proportion of trips by trip length in urban areas in England, 2016, showing 72% of trips were under 5 miles[11]



[10] Source: ONS (2016), Subnational population projections for England: 2014-based projections. For more information on the rural-urban classification of Local Authority Districts, see https://www.gov.uk/government/statistics/2011-rural-urban-classification-of-local-authority-and-other-higher-level-geographies-for-statistical-purposes

[11] National Travel Survey (2016). Urban areas are those with a population of 10,000 or more. The discrepancy between the percentages in the graph and the cumulative percentage cited for trips under 5 miles is due to rounding.

Trends

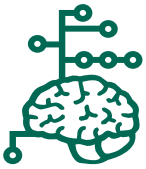
1.6 Against this backdrop, technological and business innovation has the potential to transform how people and goods move around our cities in the coming decades. Below we give an overview of the main trends, the benefits and challenges associated with them and some uncertainties as to their impacts. The trends are interconnected and will influence each other.

Cleaner transport

UK greenhouse gas emissions from the transport sector are similar to 1990 levels, with road transport, in particular passenger cars, the most significant source.[12] However, rapidly falling battery prices, improvements in energy density and electric motors and developments in alternative fuels are leading to reduced emissions from existing modes as well as sparking the creation of new modes (see next page).

The Prime Minister has launched an Industrial Strategy mission to put the UK at the forefront of the design and manufacturing of zero emission vehicles and for all new cars and vans to be effectively zero emission by 2040. The Government's support for the transition to zero emission road transport, including the associated infrastructure, is set out separately in the Road to Zero Strategy.[13] The benefits of cleaner road transport include improved air quality, reduced greenhouse gas emissions and new economic opportunities for the UK.

Automation

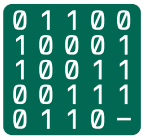


Improved sensors, increased levels of computing power and data and the potential of artificial intelligence are leading to increasing levels of automation in transport. Our ambition is to see fully self-driving cars on UK roads by 2021. By 2035, the UK market for connected and autonomous vehicles could be worth up to £52 billion.[14]

Alongside this industrial opportunity, there are significant potential social and economic benefits, such as enhanced safety, productivity, accessibility and more efficient use of urban space. The impacts of automated vehicles on road network demand and performance are uncertain, as they will depend to a large extent on the business models and occupancy levels involved.

[12] https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/695930/2017_Provisional_Emissions_statistics_2.pdf. Analysis does not include emissions from international aviation and shipping.
[13] https://www.gov.uk/government/publications/reducing-emissions-from-road-transport-road-to-zero-strategy
[14] https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/642813/15780_TSC_Market_Forecast_for_CAV_Report_FINAL.pdf

Data and connectivity



Estimates suggest that there are at least 3 million vehicles with Internet connectivity on UK roads, with 50% of all new vehicles expected to be connected by 2020.[15] Beyond simply enabling the receipt of information from the Internet, vehicle-to-vehicle and vehicle-to-infrastructure connectivity has the potential to provide information to network operators and users in real-time and optimise fleet and network management. For example, UK cities are trialling smart traffic lights that provide drivers with speed advice to enable more constant speeds and less stopping time.

Connected technologies such as these could deliver more reliable journeys, improved traffic flow and better air quality. Among the challenges posed are data privacy and cybersecurity; maintaining the public's confidence and trust will require vehicles and infrastructure to be secure by design and handle data appropriately.

New modes

Technology is enabling new ways of transporting people and goods. According to one source, global sales of e-bikes were projected to rise from an estimated 31.7 million in 2016 to around 40 million by 2023.[16] UK cities are pioneering the use of drones to address local needs, from supporting emergency services to improving the safety of infrastructure inspections.[17] In the future drones will be able to operate regularly far from their remote pilot - or even without a pilot at all – further cutting operational costs and expanding their useful applications. Vertical take-off and lift vehicles could also be deployed in urban airspace, potentially integrated with surface transport.

While these transport solutions - and others not currently imagined – have potential to increase consumer choice and drive productivity and efficiency, they may push current regulatory structures and pose new safety, security and privacy concerns.

Elsewhere in the transport sector, traditional modal divisions, for instance between buses and taxis, are blurring. Existing public transport operators will need to consider how their networks can be best supported by emerging services.

Shared mobility

Enabled by digital platforms, and in line with a shift towards a sharing economy in other sectors, models based on shared ownership or use of vehicles are becoming more prevalent. Examples include ride sharing, peer-to-peer car rental services, shared bikes and freight brokerage platforms matching goods and vehicle space. The number of users of online platforms bringing together passengers and drivers in the UK was estimated to be 7.6 million in 2017, and could grow to over 11 million in 2022, according to one forecast.[18]

Shared mobility models could make better use of limited urban space and reduce congestion and emissions. Authorities may wish to engage early with the development of new services to help ensure that they support their strategic objectives and public confidence is maintained.

[15] https://www.ttf.uk.net/wp-content/uploads/2018/03/Connected-VP.pdf
[16] https://www.statista.com/statistics/255653/worldwide-sales-of-electric-bicycles/
[17] https://www.nesta.org.uk/blog/five-cities-selected-develop-future-drone-operations
[18] https://www.statista.com/statistics/815459/etravel-ride-sharing-users-digital-market-outlook-uk/

Changing consumer attitudes

Along with socioeconomic factors (see Background), technology is affecting people's attitudes to travel. The proportion of 16-75 year olds owning or having access to a smartphone increased from 52% in 2012 to 85% in 2017.[19] Users are increasingly expecting to be able to plan, book and pay for transport through mobile applications.

Transport providers and authorities will need to consider the wide range of transport user requirements to ensure services are accessible and easy to use across society, including for those who do not have access to smartphones, those with visible or non-visible disabilities and older individuals. Public trust in new transport technologies and services will be important in determining the extent and rate of their deployment.

New business models

We are seeing the emergence of new digitally enabled models of transport provision including dynamic demand responsive transport and Mobility as a Service (MaaS). MaaS, currently being trialled in the UK, can provide easy payment mechanisms, real-time information and a more responsive and seamless public transport service. If designed well it could reduce car ownership and move people towards public transport.

In the automotive sector, a diversification towards on-demand mobility services, connectivity services and feature upgrades could create up to around $1.5 trillion in additional revenue potential in 2030, adding 30% to the expected revenue from traditional car sales and aftermarket products.[20]

However, on-demand services could lead to increased congestion or a decrease in walking and cycling at either end of the journey, with effects on levels of physical activity. New business models and platforms that tend to the dominance of a single provider could affect the influence held by users and by national and local authorities.

Definitions

Mobility as a Service:

The integration of various modes of transport along with information and payment functions into a single mobility service.

(Dynamic) demand responsive transport:

Demand responsive transport is a flexible transport service that provides transport in response to requests from users specifying desired locations and times of pickup and delivery. In a dynamic environment, routes are adjusted in real time to accommodate new requests.

[19] http://www.deloitte.co.uk/mobileuk/assets/img/download/global-mobile-consumer-survey-2017_uk-cut.pdf
[20] McKinsey & Company (2016), Automotive revolution –perspective towards 2030.

Questions

1. We have identified above the main technologies and trends that we believe will affect urban mobility in the coming decades. Are there any missing?
2. We want our urban infrastructure to support these trends and deliver benefits to society. What changes are required to urban infrastructure?
3. What evidence do you have to enhance our overview of the impacts of these trends on cities and their use of urban space? Are any impacts missing?
4. What possible market failures might emerging technologies and trends give rise to that could require intervention by Government?

Our Approach

1.7 We want to harness the exciting opportunities emerging technologies and services present to achieve local and Government objectives, including greater social inclusion, more sustainable transport, enhanced journey experience for users and improved productivity. While our full set of strategic priorities will be developed and refined through the consultation on this call for evidence, the paragraphs below highlight elements that we know will be important in guiding our approach.

Inclusion

1.8 We are keen to ensure that the development of these technologies and services delivers against our commitment to make transport more inclusive for all. With active engagement, technology can enable new ways for older people or those with visible or non-visible disabilities to get around. Without active engagement and consideration of their needs, innovations can risk accidently 'designing out' sections of society who might benefit most.

1.9 Design omissions could be as simple as future vehicles or services which are too small to accommodate users of larger sized electric wheelchairs or mobility scooters, or lack detailed consideration of the audio visual requirements of those with sight loss or hearing impairments. Our Inclusive Transport Strategy provides further details on how we intend to ensure that future transport systems are developed in a manner that enables everyone to use them.[21]

Active, sustainable travel

1.10 Our approach also needs to deliver on our commitment to make cycling and walking the natural choices for shorter journeys, or as part of a longer journey. As set out in the Cycling and Walking Investment Strategy, increased use of these sustainable, active modes offers substantial benefits for people, businesses and society.[22]

A people-focused approach

1.11 Lack of public communication on, and trust in, new technologies and services could prevent society from harnessing the full potential of transport innovation. Equally, mobility solutions should be designed with people's needs at their heart and with their concerns in mind. We want our approach to support, and be informed by, research and public dialogue about the benefits and challenges associated with the transition to the future of mobility.

[21] https://www.gov.uk/government/publications/inclusive-transport-strategy
[22] https://www.gov.uk/government/publications/cycling-and-walking-investment-strategy

Helping people, businesses and cities prepare for the future

1.12 Emerging technology could make it easier for people, including those with disabilities, to access employment. At the same time, it could affect the kinds of jobs available in transport related occupations, which currently employ around 1.6 million people in the UK.[23] Core to our Industrial Strategy is our commitment to supporting adults to secure meaningful and productive employment, and equipping people with the skills to maximise their earning potential. We will seek to take advantage of the opportunities from automation of low skilled labour and changes to the labour market.

1.13 Our existing work on skills includes the establishment of the Strategic Transport Apprenticeship Taskforce to help the transport sector address skills challenges and take forward the Department for Transport's commitment to treble the number of apprenticeships in the transport sector by 2020. Government has also made 2018 the 'Year of Engineering' to boost engineering across the UK and celebrate the importance, variety and creativity of the profession. We would welcome views on what further actions are required to prepare people and businesses for the mobility-related labour market of the future.

1.14 Many powers relating to transport and land use planning are devolved to local and combined authorities. We want to encourage and support local authorities and operators to shape how the changes to urban mobility emerge, and to take a holistic approach to planning cities and their transport systems. This will help ensure that emerging transport technologies and services are aligned with the needs and identities of their cities and support local growth and development. We will seek to complement this through the co-development phase of the Transforming Cities Fund.[24]

Questions

5 We are committed to a transport network that works for everyone. What role should Government play in helping ensure that future transport technologies and services are developed in an inclusive manner?

6 How can Government ensure that future urban transport systems support people's wellbeing and flourishing, healthy communities?

7 What role should Government play in understanding, shaping and responding to public attitudes to emerging technologies and services?

8 What changes do you expect to the mobility-related labour market? How can Government best support people and businesses affected by these changes?

9 What other actions should Government prioritise to help people, businesses and cities prepare for the future?

[23] https://www.gov.uk/government/statistical-data-sets/tsgb01-modal-comparisons, Table TSGB0116.
[24] https://www.gov.uk/government/publications/apply-for-the-transforming-cities-fund

2. Future of Mobility Grand Challenge

2.1 This section seeks views and evidence to inform the **wider Grand Challenge** on the Future of Mobility, which the Future of Urban Mobility Strategy will form part of. The remit of this challenge is broader than urban mobility, and a call for evidence focusing on the opportunities for rural areas will be published in due course.

2.2 The Grand Challenge will aim to take full advantage of the trends set out in Part 1 to improve lives across the country and support our Industrial Strategy. Building on the work of the Office for Low Emission Vehicles, the Centre for Connected and Autonomous Vehicles and the Transport Systems Catapult, we will combine world-class research, entrepreneurial drive and sector expertise to continue our long history of bringing transport innovation to the world.

'Mission-oriented' policy-making

2.3 We will take a mission-oriented approach – setting clear and specific goals, backed by a range of policy measures – where this will be effective in driving innovation, business investment and positive social and environmental outcomes. The most famous example is the Apollo mission to land a man on the moon by the end of the 1960s, which catalysed innovation in sectors as diverse as textiles and computing.

2.4 As announced in the Prime Minister's speech of 21 May 2018, the first mission set for the Future of Mobility Grand Challenge is to put the UK at the forefront of the design and manufacturing of zero emission vehicles and for all new cars and vans to be effectively zero emission by 2040.[25]

2.5 Our preliminary analysis has identified four other areas as potentially benefiting from advances in technology and innovation directed through a mission-oriented approach, though we are likely to select a limited number for initial prioritisation:

- **Safer streets**. The number of British road traffic fatalities has been broadly flat since 2010, following a general downward trend. A similar flat-lining of road fatality reduction has occurred across many high-income countries. Increasing numbers of older people (and older drivers) pose a challenge to reversing the flat-line as those aged 75 or over are more at risk of being killed in a road collision than younger people.[26] Self-driving vehicles offer an opportunity to address this challenge and vastly reduce the number of road deaths, given that over 85% of road crashes in Britain involve human error;
- **Improved access to transport.** Access to reliable transport improves lives and boosts economic growth and opportunity. New technology and business models could improve and extend demand-responsive services in rural areas as well as enhance multi-modal integration in urban areas. Government work on data (see

[25] https://www.gov.uk/government/speeches/pm-speech-on-science-and-modern-industrial-strategy-21-may-2018
[26] https://www.gov.uk/government/statistics/reported-road-casualties-great-britain-annual-report-2016

p.18) and our commitment to introduce smart ticketing across the England and Wales rail network by the end of 2018 are important enablers for such models.

If designed well, technology could also help realise the Government's long term ambition that disabled people should have the same access to transport as everybody else, be able to go where everyone else goes and be able to do so easily, confidently and without extra cost. It could enable new ways for older people to get around, support better access to services, their social networks and their community, and encourage greater social inclusion;

- **Cleaner freight**. We want to seize the opportunities of innovations in vehicle powertrains, fleet management and drone technology to support cleaner, more efficient movement of goods. We believe there are substantial environmental and economic opportunities if the UK can successfully develop and deploy zero emission methods of freight delivery. A separate call for evidence launched alongside this document seeks ideas for how the Government can harness the opportunities for greener delivery in the commercial and residential parts of our cities and towns;
- **Liveable cities.** Technological innovation could help promote more and safer walking and cycling, helping us deliver on our commitment to make these sustainable, active modes the natural choices for shorter journeys, or as part of a longer journey. According to one report, shared use of autonomous vehicles could allow the majority of parking spaces – which currently occupy around 15-30% of a typical urban area – to be removed from city centre streets. This could allow the redevelopment of land for more valuable use and open up the potential for hundreds of thousands of new homes in our existing city centres.[27]

2.6 We would welcome suggestions for missions in any of these areas. Our view is that missions will be most effective if they:

- Address strategic public policy aims, as well as opportunities for growth;
- Have clear and stretching goals, to drive long-term innovation and investment;
- Are open to multiple solutions, to maximise space for innovation and competition;
- Have cross-sectoral relevance, to maximise coordination benefits; and
- Build on available strengths in science, technology and industry.

Questions

10 Which 'missions' in the areas we have identified could be most effective in driving innovation and investment? Please refer to the criteria suggested in paragraph 2.6.

11 How should Government funding be targeted to help UK innovators build and scale transport solutions?

[27] http://www.wsp-pb.com/Globaln/UK/WSPPB-Farrells-AV-whitepaper.pdf

Initial priorities

A regulatory framework fit for the 21st century

2.7 As transport technology and services evolve it is important that the regulatory framework evolves with them, rather than hampering innovation. We already have established programmes of work to address regulatory barriers to certain emerging technologies. For instance:

- For automated vehicles we have a Code of Practice for testing, insurance measures in the Automated and Electric Vehicles Bill and a detailed review being undertaken by the Law Commission; [28]
- For drones we are bringing forward new regulation to build confidence in the technology and enable growth, and are working closely with industry partners to identify and overcome barriers.[29]

2.8 To ensure we have explored all the regulatory barriers to technological and service innovation, one of our early priorities for the Future of Mobility Grand Challenge is undertaking a thorough review of all relevant primary and secondary legislation. This will ensure we continue to have one of the most open environments in the world for transport innovation and new services. The following questions are intended to identify regulatory barriers not currently being addressed and/or areas where cross-modal regulation may be needed.

Questions

12 Which laws or regulations not currently being addressed need to be amended or created to help harness the benefits and mitigate any risks associated with new transport technologies or services?

13 How could the experience of working with local and/or national regulators be improved for transport innovators?

Data-driven innovation

2.9 Data is a key enabler for innovation in transport. Exploring and encouraging the use of data to support the more effective operation of our transport system is one of our early priorities for the Future of Mobility Grand Challenge.

2.10 We have made considerable progress to date and forthcoming work will build upon this. For instance:

- A scoping study has identified the transport benefits, practical considerations and enablers associated with big data;[30]
- The Local Transport Data Discovery project will report shortly on the main barriers to local authorities publishing and exploiting open data and recommendations for overcoming these;

[28] https://www.gov.uk/government/news/government-to-review-driving-laws-in-preparation-for-self-driving-vehicles.
[29] The latest set of drone policy proposals are currently under consultation at: https://www.gov.uk/government/consultations/drone-legislation-use-restrictions-and-enforcement
[30] https://www.gov.uk/government/publications/transport-benefits-from-big-data-and-the-internet-of-things-in-smart-cities

- The Joint Rail Open Data Action Plan, to be published shortly, will outline how Government will work with key stakeholders to improve the quality and openness of rail data;
- The Bus Services Act 2017 enables regulations to be made to require local authorities or bus operators to provide comprehensive information about local bus services. We are currently consulting on these regulations;[31]
- The street manager project, now in beta development phase, will transform the planning, management and communication of street and road works by providing up-to-date open data on planned and live works.

2.11 We are aware that there is much more that could be done. We welcome views on what further actions Government should prioritise to help maximise the beneficial exploitation of data in the transport sector.

Question

14 What further actions should Government prioritise for resolving barriers to data sharing and use in the mobility sector while protecting privacy and security?

Other comments

Question

15 Do you have any further suggestions or comments on the subject of this call for evidence?

[31] https://www.gov.uk/government/consultations/bus-services-act-2017-bus-open-data

Annex A: Full list of consultation questions

Please note that we do **not** expect you to submit evidence or views in response to every question listed if not applicable.

Future of Urban Mobility Strategy

Question 1

We have identified above the main technologies and trends that we believe will affect urban mobility in the coming decades. Are there any missing?

Question 2

We want our urban infrastructure to support these trends and deliver benefits to society. What changes are required to urban infrastructure?

Question 3

What evidence do you have to enhance our overview of the impacts of these trends on cities and their use of urban space? Are any impacts missing?

Question 4

What possible market failures might emerging technologies and trends give rise to that could require intervention by Government?

Question 5

We are committed to a transport network that works for everyone. What role should Government play in helping ensure that future transport technologies and services are developed in an inclusive manner?

Question 6

How can Government ensure that future urban transport systems support people's wellbeing and flourishing, healthy communities?

Question 7

What role should Government play in understanding, shaping and responding to public attitudes to emerging technologies and services?

Question 8

What changes do you expect to the mobility-related labour market? How can Government best support people and businesses affected by these changes?

Question 9

What other actions should Government prioritise to help people, businesses and cities prepare for the future?

Future of Mobility Grand Challenge

Question 10

Which ‘missions’ in the areas we have identified could be most effective in driving innovation and investment? Please refer to the criteria suggested in paragraph 2.6.

Question 11

How should Government funding be targeted to help UK innovators build and scale transport solutions?

Question 12

Which laws or regulations not currently being addressed need to be amended or created to help harness the benefits and mitigate any risks associated with new transport technologies or services?

Question 13

How could the experience of working with local and/or national regulators be improved for transport innovators?

Question 14

What further actions should Government prioritise for resolving barriers to data sharing and use in the mobility sector while protecting privacy and security?

Question 15

Do you have any further suggestions or comments on the subject of this call for evidence?

Annex B: Consultation principles

The consultation on this call for evidence is being conducted in line with the Government's key consultation principles. Further information is available at https://www.gov.uk/government/publications/consultation-principles-guidance

If you have any comments about the consultation process please contact:

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