

# Future of Mobility in Counties

## Smart Mobility Roundtable 26 February 2020

The University of Hertfordshire, 1.30-5pm

This report documents the second in a series of roundtable discussions organised by the Smart Mobility Unit at the University of Hertfordshire and sponsored by Department for Transport.

### 1.0 Participants

There were 26 participants from the following sectors: national, sub-regional and local government, technology, transport provider, transport consultancy, property development, academic research, non-governmental organisations.

Stephen Joseph facilitated the discussion.

### 2.0 Aim

This roundtable sought to examine data and technology developments, in transport and in other sectors, and their possible impacts on transport and travel in counties. The following questions were used to guide the discussion.

- What factors would encourage people to use innovative modes, based on demography and location?
- What are the trajectories for automation in mobility in counties?
- What are the other technological developments that might contribute to sustainable mobility?
- What is the role of Mobility as a Service (MaaS)?
- How can we ensure that smart mobility meets the accessibility, availability, affordability and acceptability needs of the demographics in non-urban places?

### 3.0 Papers circulated in advance

- Jamie Cecil, The benefits of big data collection and analytics, University of Hertfordshire, 2020
- Beate Kubitz, Shared Mobility and Micromobility: a summary (2020 unpublished)
- Marcus Enoch, Loughborough University: Mobility as a Service (MaaS) in the UK: change and its implications, Future of Mobility: Evidence Review, Government Office for Science, 2018
- Greg Yiangou, Hertfordshire County Council, Hertfordshire Smart Travel. Using data to support smart mobility. (2020 unpublished)
- Claire Linton and Jonathan Bray, Urban Transport Group: MaaS Movement? Issues and options on Mobility as a Service for City Region Transport Authorities, September 2019.  
<http://www.urbantransportgroup.org/resources/types/reports/maas-movement-issues-and-options-mobility-service-city-region-transport>
- UK Connected and Automated Mobility Roadmap to 2030, Zenzic, 2019.  
[https://zenzic.io/content/uploads/2019/09/Zenzic\\_Roadmap\\_Report\\_2019.pdf](https://zenzic.io/content/uploads/2019/09/Zenzic_Roadmap_Report_2019.pdf)

### 4.0 Presentations

#### 4.1 Beate Kubitz

A fundamental problem with MaaS in rural areas is the low population density and low supply, which makes demand very hard to match. By contrast running ZipCar in London is like “shooting fish in a barrel”. However, there are some successful examples of shared mobility in rural areas. Schools, businesses and village hubs provide opportunities to link demographics and supply in rural areas.

A key problem is that traditional bus services have shrunk to protect the profitable routes so there is now a gap with no way to access services that remain. The first mile is the most expensive for the non-car user, facing a taxi ride of £5 or £6 to travel to the nearest bus stop or rail station. For a car owner, at 25p a mile it’s logical to drive the remaining 20-25 miles into the nearest town or city. Without demand restraint at the other

end of the journey, there is no logical reason for people to limit their private car use to the first leg of a journey to a rail station or MaaS hub.

Bike share is potentially useful outside urban areas, especially E-bikes which extend the typical cycling range from 3 to 5 miles. Brompton electric bikes have wider appeal than ordinary bikes, especially with women. This is probably due to the acceleration giving extra confidence in traffic and the power assisting with steep inclines. However, due to the value of the bikes, security at each end of the journey is a key challenge.

E-cargo bikes are also important and useful but with new models costing up to £5000, secure storage is essential. Unlike a car which is secure when locked, an e-bike is vulnerable to theft. Workplace bike-share schemes or hubs with Brompton bike-share and secure docking are promising. There must be some infrastructure, including social fabric, around bike-share to avoid vandalism and make people feel safe. Lighting is important.

Micromobility is a developing area. Although very popular, especially for journeys under a mile, electric scooters are illegal. Research suggests that while most people think this should change, there is no consensus on where e-scooters should be legal, and cycle paths seem the option which gains most support. However, rarely do segregated cycle paths offer a continuous journey, so expect to see e-scooters at road junctions or on pavements. The new DPD sponsored e-cargo bikes (quadricycles) resemble a small milk float and can not negotiate bollards, yet the presence of pedals means it is legal on a cycle path. A change to regulations is anticipated.

There is a tension over accommodating new pedalled or micro-electric vehicles on UK streets, especially rural roads and lanes where there are rarely kerbs or pavements, let alone or segregated cycle paths.

Car clubs have been in the UK for 30 years. From 2013 the car rental firm Avis bought zipcar and professionalised the sector. Commercial services have only grown in London and other large city centres. Enterprise links their car club offer to hire cars in smaller towns and cities. Rural car clubs are more reliant on visionary individuals. The best indicator for a successful car club is a demographic with high levels of tertiary education. In the UK, Hebden Bridge has the highest number of academic lecturers without a University and has a thriving self-sustaining car club with a paid part-time worker. St Andrews University and University of Hertfordshire also have successful car clubs. Norwich is an outlier, with a very large and flourishing car club thanks to a visionary individual who persuaded the City Council to introduce rigorous parking demand management. The council guarantees to allocate additional parking bays to the club once certain metrics are reached. There are currently over 60 cars in the fleet and it operates with simple low cost advertising on facebook.

Workplace Travel planning at employment sites successfully reduces congestion and parking problems. There are many different approaches, but once trip mapping has been done a communication programme builds a community of sharers. Liftshare is the longest established ride-share platform. There are very few failures. It is possible to blend Liftshare with car club members – so several commuters drive and park at a mobility hub, and transferring as a liftshare into an e-car club car to complete the commute to an urban centre. This has been used in Scotland but required a subsidy to work, since people needed the reassurance of a backup in case the journey falls through. Enterprise and liftshare are collaborating. Zeelo (personalised bus) and rideshare can also be combined for commuting.

Combined Authorities and County Councils are preparing bids to DfT's next round of Future of Mobility funding to include mobility hubs for integrating modes. A sense of place and perceptions of security are important, so plans include good lighting and interactive digital display boards to reduce reliance on mobile phones. Models exist in Netherlands and Germany.

#### 4.2 Marcus Enoch

MaaS involves a digital interface to source and manage mobility services, combined with a journey planner and a booking system. The paradigm shift offered by MaaS is the ability for transport users and providers to communicate their needs in real time via a digital service platform.

In theory, the data collection and analysis should enable a step change in customer-led service, by matching supply to demand, including unmet demand.

Barriers to MaaS have become apparent since the pre-circulated paper was written in 2018. Solutions have proven harder than anticipated to deliver. There are issues with the quality and level of service delivery. Better quality of data can't negate fundamental problems with a service – such as for example a train journey requiring a change where it was a through service before, bringing greater journey time unpredictability. There has also been a recent pattern of falling demand for public transport, due to internet shopping, changing work patterns reducing the commuter flow in the morning and evening peaks. However there is also cultural inertia. Buses and trains have not fundamentally changed for 200 years, with the same service model and ticketing. The car trumps public transport for most journeys. Lyft and Uber are also undermining public transport in urban areas.

The prevailing assumption is that MaaS will be delivered by regional or sub-regional government. But looking at the size of the market, it is possible that it is doomed to fail. About 10% of trips are currently Public Transport, roughly equally split between rail and bus. Of these only 11% are 'multi-stage' involving more than 1 change. So the market for MaaS where several options are used is about 1%. In non-metropolitan areas the levels will be even lower. The rural/suburban/small town market is even smaller. Only 3% of trips outside London and the big metropolitan areas in UK are multi-stage with more than one change. The future may be a mix of car-based, micro-transit and smaller transport solutions. MaaS will come to big cities first because of the transport opportunities in terms of density and demographics. But outside metropolitan areas there will be a lack of commercial interest. It seems likely that MaaS will have to be council-led yet it will be challenging for councils to build at scale. There may be insufficient demand to create a viable market, even allowing for unmet demand, implying a massive scaling issue.

Although the consensus seems to be that MaaS will bring a revolution in transport, it seems more likely to be more modest incremental change. There is scope for MaaS to deliver a step change in public transport (if any remains in future) and total transport approaches do offer scope for efficiencies

## 5.0 Overview of Discussion

Sections 5.1 to 5.5 reflect how the discussion related to the initial questions for the roundtable. Other themes which generated considerable discussion are summarised in sections 5.6 and 5.7.

### 5.1 What encourages innovative modes, based on demography and location?

Demographics and local geography demand careful consideration. Car Clubs thrive where a high level of the population is tertiary educated. Visionary individuals can make a surprisingly big impact on the success of innovative modes. Some places are cultural outliers, for example Cambridge. It makes sense to pilot MaaS in places with 'early adopters' and clusters of like-minded people with similar needs. Experian's Mosaic tool is very useful for segmentation. Road pricing and other penalties for SOV driving are powerful tools to generate demand for MaaS. Infrastructure for walking (pavements) and cycling (segregated or safe routes) enable behaviour change. Solutions should be tailored to local needs.

The experience of travel planning is that people need to be shown the alternatives open to them. Match a compelling vision for deep decarbonised travel to different demographics and use novel branding to attract people into new behaviour patterns.

### 5.2 What are the trajectories for automation in mobility in counties?

Hubs, whether in village halls, local shops or edge of town park and rides are promising as transfer and aggregation points. There's an opportunity for MaaS pilots in deep rural areas to address the 'expensive' last mile problem. There was disagreement on the potential for AV generally, but especially in rural areas.

### 5.3 What are the other technological developments that might contribute to sustainable mobility?

Pavement mapping would be of great value to planners but there is currently no commercial value in the data, so it is not currently fundable. It might be possible to use Satellite AI to map pavements.

Integrate the mapping for each mode at interchanges and hubs, so that the entire journey can be planned seamlessly.

Bus Open Data is an opportunity but also a risk without funding help for small rural services. Bus route data is not currently available.

There needs to be a step change in the quality of videoconferencing services for teleworking.

Cooperation between local authorities is required to provide seamless journey planning for trips across country boundaries. Currently this can involve using one app per transport authority.

Road pricing for single occupancy vehicles is necessary as the 'push factor' to ensure the development of Connected Autonomous Vehicles. There will be no carbon or congestion benefit from AV in isolation.

#### 5.4 What is the role of Mobility as a Service (MaaS) for Counties?

There was some scepticism about the intense focus on MaaS, now that more is known about its limitations, especially outside major metropolitan areas.

Some doubted whether bike-share can work in a rural setting where the density of users is low, although Brompton e-bike hire has promise for rural areas.

New settlements in rural areas are a big opportunity but there is as yet no way to evidence how new modes (e-bikes, Zeelo, ArrivaClick) will deliver modal shift.

Rail commuters in rural settlements offer a promising potential market for MaaS.

#### 5.5 Inclusion. How can we ensure that smart mobility meets the accessibility, availability, affordability and acceptability needs of the demographics in non-urban places?

The Local Enterprise Partnership in Cornwall has funded smart ticketing for all the county's bus operators in preparation for Bus Open Data. This will protect communities with more vulnerable bus services.

Secure bike storage is essential for e-bikes, which are the best fit for rural areas.

DfT should pilot a concentration of small smart mobility interventions in one place.

There must be alternatives to internet and smartphone booking as not everyone can be assumed to use these services.

Embed the principle that MaaS in rural areas should not undermine walking, cycling and mass transit.

#### 5.6 Missing data

This was a major theme of the roundtable. There is a need to close the gap between the valuable data which planners and the public sector would like (or can afford) and what has commercial value to Google and other big data firms. No-one is doing pavement mapping, although it would be highly valuable. GIS data on bus routes is also lacking. This is different to the location of a series of stops and to real-time vehicle location data. A central provider of bus route geometry would be very valuable but should not control the tools presenting the data to the user.

The National Travel Survey should capture demand for and current access to DRT. Research is needed on suppressed or unmet demand, including for e-bikes in counties. It would be useful to gather evidence for the benefits of combining measures in small to medium schemes

#### 5.7 Barriers and Opportunities for Smart Mobility in Counties

Car clubs work in locations with the right demographic and public transport offer. This is not commonly found in rural areas but DRT might succeed with subsidy.

There was lively disagreement about the pros and cons of government setting data standards, controlling data and/or selling data. When should data be made freely available? Some felt that private enterprise makes data valuable through app development and therefore should not be harmed by government interference. Others

felt there should be central responsibility for valuable but non-commercial data sets (eg pavements) and for cleaning data. Local authorities lack expertise in how to best use the data they hold and may not realise how important it is to know who is using any data that is freely available from them. Innovation sector favours central regulation and setting of standards to provide certainty and stability to encourage investment in new markets.

One view was that a decade of bus cuts has forced people into cars and their sunk costs will keep them driving for the next decade. There should be a programme of public investment now so that when these cars come to the end of life people choose not to replace them.

Taxis are often the only non-car option for accessing public transport in rural areas, meaning that the first mile is the most expensive. Financial logic dictates that a journey that starts with the car usually remains in the car for the whole journey.

Look outside the transport sector to calculate the benefit cost ratio of MaaS schemes. Factor in the costs of missed appointments to the NHS and Social Care Services. Move away from journey time saving measures.

Use tools like Experian's Mosaic to derive personality types ripe for innovative mobility interventions.

Measure and plan for mobility to enable new development without more congestion or more new roads.

There is a wealth of very useful free data: ONS, MOT data, Taxi mileage, Census data (education, health).

Use data better to avoid running schemes in the wrong places. Northants Total Transport pilot generated useful data mapping.

Branding is a very powerful tool.

## 6.0 Detailed notes of Discussion by Roundtable Participants

The following abbreviations indicate the sector making comments

ACAD Academic

BUSOP Bus operator

CC County council

CONS Consultant

DEV Property developer

GOV National government

INNOV Innovation sector

REGG Regional transport body

TECH Technology sector

### 6.1 Data Strategies

TECH: Organisations with data should think about who they want to give a benefit to downstream and determine the easiest way to get the data to them.

CONS: The main issue is understanding the problem and avoid delving deeply into data without knowing your purpose. Better first to seek consensus on desired outcomes before setting out to collect data.

REGG: Best practice is to audit all data with two or three sources for validation. Some data sets are hard to use and difficult to exclude biases. Someone needs to have responsibility to do a one off project to clean the data. Is this a central government job?

ACAD: We need good data to replace assertions about demand based on old travel surveys which used cordon counts to populate transport models.

ACAD: Research shows that most people have alarmingly inaccurate beliefs about the ratio of through traffic to local people making short trips. Typically people think 98% of traffic is through traffic, whereas it's closer to 7%. This gap in perception can only be closed with trustworthy data.

TECH: Big Data companies have spent millions to develop phone apps to collect data from individuals. Government can have a role as a central provider of data but it shouldn't sell data. It damages the sector's competitiveness. Government can also harm innovation by forcing the use of particular data. Innovation in the marketplace is what generates the applications to make data useful.

GOV: There is a tension between local authorities (LAs) protective of their data in the hope it might generate an income stream and the need for data to be freely accessible. The tech sector will not create useful data sets unless they can make a commercial return.

REGG: It is very valuable indeed to 'close the loop' so LAs know who is using data and in what way. People consume data through an SDK (Service or Software development kit) which feeds back data on how people are using an API (Application programming interface).

TECH: the most valuable data for a planner in a LA is how data is being used, for example what utility companies are contemplating for street works (permitting regulations) and parking demand.

GOV: An advantage to councils in charging for access to data is that they automatically know who is using it, which is valuable meta-data. For example if a LA knows how parking data is being used it can remove under-used parking capacity.

DEV: Learn from the data mapping in the Northampton Total Transport project, which showed the mismatch of an intervention (EV charging) with demand.

CONS: Counties have access to free data on vehicle registrations and mileage and CO<sub>2</sub>. Counties also have the locations of health and social care clients and where they want to go to.

TECH: Road works data sets are free, good, very dynamic and can be centralised for all Local Authorities to use. These are not monetised to Google or TomTom.

CONS: Experian Mosaic customer segmentation data is very good, but costly. Experian data will ensure there are early adopters in the catchment of a new project to create a viable base on which to build services.

DEV and CONS: A good, free indicator of propensity to bike-share and join car clubs is level of education. Evidence shows a car club will succeed in a location with a high level of tertiary educated people and good public transport services.

TECH: Events data, floating vehicle data on disruptions, can be used to look for correlations between non-regular disruptions to an intervention. Consultancies offer analysis services in collaboration with TomTom and Google.

TECH: In rural areas you can't have sensors everywhere but you can sense in other ways. You can probe and communicate problems to people.

CONS: Whilst not using mapping data intensively, travel planners have strong expertise in designing travel surveys and gather substantial quantities of data which for reducing SOV trips.

TECH: Origin-destination data is widely available from many different providers including mobile phone data, but it is not openly available. Negotiation to establish trust is important to gain access.

## 6.2 The Problem of Suppressed Demand

Q1 NTS and DRT– how to map demand for DRT? It is not currently captured National Travel Survey is based on timetables and DRT will not be included. Need to ask in NTS if any shared transport is available – eg is there a smart phone app with an operating area near you? Arriva Click?

Q2: How to establish a baseline of demand in rural areas? We know there is a great deal of suppressed demand. Without a baseline it's hard to know what the unmet demand is. People might use active modes more (walk, cycle) between settlements if this was safe.

Transport appraisal only measures actual current journey data and never calculates the benefit of meeting suppressed trips.

DFT: Midlands Connect research measured missed hospital appointments to assess unmet demand.

REGG: The killer question is understanding unmet demand. Working with Experian to develop persona types and map this at detailed geographical level across EEH to identify people who are open to change their behaviour. This will inform sites for testing pilot interventions. This would provide a data base to build from.

## 6.3 Appraisal, JTS and BCR

HCC: CC Concerned about transport isolation in rural parts of HCC. Doing research into changing from JTS to health and wider benefits of transport in itself as an end. They are investigating methods to assess wider value.

HCC: Counties cannot improve mobility as fast as the growth in demand for cars and road space. So if counties can measure mobility and provide some mobility for new developments by different modes that's a good outcome. As we can't meet demand now, any alternative way of providing mobility is economically sensible.

HCC: Data on bus use in transport models is based on ridership and levels of service from the past which is now out of date.

CONS: In rural areas there is high use of taxis which are expensive. (This demonstrates unmet demand for cheaper transport). In one district there are 11 million miles pa by taxi of which much will be NHS spend. We know that the quality of these vehicles is not great. 20% have no MOT. This data is not included in any modelling.

INNOV: We say bus is not economically viable but nor is patient transport. The NHS is losing millions through missed or late appointments. Can these costs be included in modelling?

REGG: We know that in transport modelling we take decisions to build roads on JTS but no-one audits the actual financial returns or actually delivers a financial refund to HE or Transport authorities for the infrastructure investment. It's intangible.

ACAD: Disagree, there are post-opening evaluations on major road schemes. LSTF and cycling demonstration towns were evaluated and showed some good longer term results. There was good detailed work done here.

HCC: Project evaluation on small and medium scale projects is lacking. Yet we know these work, so there should be measurement. Small simple interventions have huge benefits compared to major road building. More data on the value of small to medium schemes would be very useful. Could developers help gather this data?

CONS: We build roads and trams on basis of low BCRs and yet they have great uptake, so is BCR a valid measure?

ACAD: We know there are huge non-market benefits to getting people out of SOV cars.

GOV: We need to look outside the transport sector to justify the business case. Journey time savings are out of date and not fit for purpose any more. Need pricing based on public health and lost NHS appointments. Rural

emissions – are they worse from SOV cars? Need maths on this and change the BCR models. Need data to work this out.

#### 6.4 Data for Walking

There was strong consensus from all sectors that walking is seriously overlooked in MaaS and that it is a serious problem that no general route data exists for walking. Pavements are unmapped and people drive short distances in rural areas because of lack of pavements.

The only exception is that some footpaths may be shown on very high resolution Ordnance Survey maps, but this data is not freely available in the public domain.

The consequences include for example:

- The walking routes at either end of a public transport journey are never mapped.
- Planners in a rural area have no way of knowing without a site visit, that a brownfield site in the countryside (eg a former asylum) might be accessed by a single half mile route with no pavement.
- Councils can't properly specify the planning gain needed in Section 106s in a local community.
- Journey planning tools for public transport in rural areas have no data on walking routes to bus stops. Only a local person would know that a suggested route might have a pavement. Pavement data would enable a journey planning tool to offer options for getting to a more distant train station (by bike or car) where the bus option is not viable.
- Google Maps is a prime journey planning tool but it knows nothing about safe walking routes. For example it will offer a walking route alongside a 4-lane motorway junction. Even in urban areas a Google walking route can be blocked by a wall in a council estate, so not suitable for planning a walking route.

While local Authorities have Rights of Way information, these are not automatically walking routes. To map walking routes requires data on width and quality of surface for wheelchairs, mobility scooters or pushchairs. Also in some cases footpaths become bridal ways at a parish boundary.

ACAD: MaaS to integrate modes (train, bus, walking, cycling) needs to be able to map accurately at suitably fine resolution how to make the interchanges. Bus and train journey planners use different maps, eg Euston Rail Station is a different physical location to Euston Underground Station.

There was widespread agreement (from CONS and TECH sectors) that there is no commercial customer for the pavement data. If one could be found then a case could be made to create the dataset. While you can use Google to review restaurants and get a crowd-sourced data set, pavements won't work like this as there is no end-user willing to pay for the data. The problem is that no business makes money from walking data and without a direct saleable benefit Google will not value the data. Also Local Authority data is too small geographically for Google to get a return. Big tech players want a national data set. If the government makes collecting pavement data a standard requirement in cities then it will happen everywhere.

In addition it was noted that BCR appraisal methods do not favour walking and pavements. If economists placed a value on the pavement data it would be mapped. There was a participant with a Masters student assessing the BCR impact of pavement-less roads and the cost of people therefore choosing to drive.

GOV: Each Councillor in Hertfordshire has a £90K discretionary budget for highways. This could be used for dropped kerbs and other pavement improvements if residents demanded it as a priority.

REGG: Encouragingly it might be possible to use satellite data to identify pavements. Guiseppe Sollazzo is looking at deep learning AI for pavement recognition. Head of the Developing Data Unit at the Department for Transport.

REGG: A low tech approach would be to ask citizens to map walkable pavements, such as has been done by Sustrans and Bucks CC for cycleways.



CONS: Gathering pavement data from the bottom up won't work. Disability activists have tried reporting pavement problems to Google but they are never acted upon or recorded. "Sinks without trace".

CC GOV: STRAVA data can be used to validate if people are using a footpath route, but this data will exclude the needs of the mobility challenged.

## 6.5 Data for Buses

Bus operators are required by law to submit data to DfT's new Bus Open Data Service<sup>1</sup> as follows:

- By 31 December 2020 bus timetable data
- By 7 January 2021 vehicle location and basic fares and tickets data
- By 7 January 2023 complex fares and ticket data

TECH: This obligation is for timetables, stops, vehicle location and fares. This will be real time and not handled by traffic commissioners. But the data set will not hold routes. A route inferred from the stops will only be correct 80-90%. Diversions especially are a problem.

REGG: There are serious concerns about how small operators in rural areas will afford the ticketing technology to comply with bus open data regulations. They often have very marginal financial viability and can't afford to invest in technology. Without help new obligations to report data and curb emissions will put operators out of business. Some rural operators still have drivers writing tickets by hand.

BUSOP: Someone needs to pay for the ticketing equipment and to collect and sift the bus data.

ACAD: Cornwall's Local Economic Partnership paid for contactless technology for all the county's buses.

TECH: Bus route geometry at a central level will be great. But if the government enforces a tool for all publicly owned route planning that's not good for the market. Role for government should be: collect data, set common standards on data format, specify how to present data. Government should not control the tools used to present this data to the end-user.

TECH: Hardest challenge is getting reliable GIS bus route data from a local authority (also called route registration data). Real time vehicle location is not the same as an official route, since there can be diversions for all kinds of reasons.

CONS: Also not all important data is captured by route or live running data, for example it is easy to miss that a bus is delayed leaving a stop because there are lots of people boarding.

BUSOP: UoH UNO's smart ticketing data reveals who is using what routes with what technology.

Not everyone in the room realised the importance of route data and that it does not exist.

## 6.6 Total Transport Pilots

BUSOP: Northants Total Transport Pilot data is useful. Look at the data on social services and non-emergency patient transport outside urban areas.

ACAD: DfT has carried out large pilots in Dorset, Wiltshire, West Cheshire, Somerset since 2006. The problems of total transport are well known, particularly the silo operations of different public services. Surely in these rural areas there is a pool of car people who could be incentivised to become volunteer drivers in their communities?

INNOV: All the Total Transport projects were too short term and underfunded. Need longer term commitment and central government backing to get the NHS involved.

REGG: In Greater Manchester the mayor now has devolved control over NHS budgets so isn't this a political opportunity to get cooperation? The TfN infrastructure plan does include health. Access to stations could help with health outcomes.

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<sup>1</sup> <https://www.gov.uk/government/collections/bus-open-data-service>

TP TECH: The conclusion of the Total Transport pilots was that it is too difficult to get clinical commissioning groups and other key partners to collaborate.

HCC: It is very hard to generate changes in travel behaviour. Hertfordshire is full of people with sunk costs in cars in rural areas, with 2 or more per household. The challenge is to get a car-owning driver to change.

### 6.7 DRT Viability and Traditional Bus

BUSOP: Commercial operators will never want to go off the main routes because they need a minimum financial return. So there's a need to find a new financial model for DRT to succeed.

BUS OP: Need more clarity on the circumstances that need different solutions. We know the bus corridors in the county which are financially viable. On these routes, buses are the best solution logistically and financially and, whilst this market exists, it makes no sense for a new programme from Government to undermine it. Indeed these viable routes should be protected.

TECH: Innovative DRT companies need funding from government. It's concerning what the new £5bn will be spent on. It must be spent well.

DEV: HCC is working on a DRT pilot in Daventry on school travel efficiencies and to see if DRT can be made to work with better data modelling. DRT has never been found to be sustainable in the long term before. The data opens up a fresh angle. All commissioners need to be involved to see the benefits. Public Transport budgets are tiny compared to NHS and School and Social Services budgets.

TECH: DRT can probably work in areas where bus use has fallen, providing rural communities with something that serves like Uber in the cities.

ACAD: In March 2020, Hertfordshire County Council and Watford Borough Council will launch a pilot<sup>2</sup> with ArrivaClick flexible minibus smart travel service and a bike hire scheme (Beryl Bikes). The University of Hertfordshire will monitor the results. Watford is the largest single settlement in Hertfordshire and is highly car dependent.

TECH: Does it make sense to run large buses in rural areas? Smaller DRTs would be better, more efficient and more appealing. New DRT scheme with Tees Valley Combined Authorities and Stagecoach called Tees Flex<sup>3</sup>, linking the rural hinterlands to the centres of Hartlepool, Stockton and Darlington and Redcar. DRT can't be expected to be self-supporting, but nonetheless there is a good business case for it because it's better than the alternatives.

TECH: There are some perverse licensing regulations which force operators to use bigger vehicles than necessary.

BUSOP: Away from these main routes, yes smaller vehicle are more suitable, but the cost per vehicle is much the same to a full sized bus, as most of this is the driver. For a 16 hour service, there has to be 2x8 hour shifts, ie 2 drivers plus back office support.

TECH: Agree – no one size fits all and fixed route services are best placed in some places, on some corridors definitely. DRT will not necessarily be cheaper, but instead of one unreliable bus per day you will be able to get to work, NHS appointment or whatever.

ACAD and TECH: At the New Lubbesthorpe<sup>4</sup> estate, near Leicester, ArrivaClick is not a typical minimum spec Sec 106 agreement for an hourly fixed route bus. It runs 7 days 6am – 11pm as DRT and has fixed route

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<sup>2</sup> [https://www.watford.gov.uk/info/20010/your\\_environment/1020/sustainable\\_watford/4](https://www.watford.gov.uk/info/20010/your_environment/1020/sustainable_watford/4)  
[https://www.watford.gov.uk/info/20010/your\\_environment/1020/sustainable\\_watford/3](https://www.watford.gov.uk/info/20010/your_environment/1020/sustainable_watford/3)

<sup>3</sup> <https://www.stagecoachbus.com/promos-and-offers/north-east/tees-flex>

<sup>4</sup> <https://www.arrivabus.co.uk/midlands/latest/leicester-to-benefit-from-sustainable-travel-scheme/>

services. Now it serves more than just Leicester City Centre. It has been paid for from Sec 106 and fares are roughly comparable to fixed route service.

TECH: Must make the case to access government funding for DRT in order to save larger sums in NHS and non emergency transport school and social care budgets.

TECH: Innovative DRT companies need funding from government. It's concerning what the new £5bn will be spent on. It must be spent well.

TECH: There are some perverse regulations on licensing which force operators to use bigger vehicles than necessary.

### 6.8 Travel Planning and Branding

CONS: Travel planning involves talking to all of the end-users, since they need an explanation of all the options available to them and what might fit a given situation. Employers are very keen on 'Zeelo' type projects yet these are essentially a 'souped-up' contract bus. Example is Ocado in Hatfield, where staff are 'on pay' the moment they board the bus to work. These are not open to the public and BUSOPS bemoan the fact that they poach business from perfectly good public services on the same routes. At the business park where Ocado is based there is an excellent bus service. Zeelo has succeed in re-branding to appeal to non-bus users. For example, residents in New Lubbesthorpe don't see Zeelo as a bus. Also people completing travel surveys when literally sitting in a park and ride bus say that they don't ever use a bus. People have no emotional engagement with the bus.

GOV: Branding is very powerful tool.

### 6.9 Cycling and MaaS

DEV: There is a need for realism in rural areas. Without cycling infrastructure people will not cycle on 60mph roads with blind corners, or with steep inclines. People will only cycle if it's safe and we don't have anything comparable to the rural bike infrastructure of the Netherlands or Belgium.

DEV: Maas is not a panacea. It's important to keep real. It's so much cheaper and simpler to own a cheap bike compared to hiring an e-bike.

CONS: Digital bike lockers, such as are used at rail stations, are very useful. They give comfort of security.

ACAD and DEV: Definition of a bike lane is woefully lacking. The new £5bn fund for buses and cycling will probably include more rigorous design standards for the 250km of good cycling routes.

REGG: Agree e-bikes are useful in rural settings but they need infrastructure: kerbs, bike lanes and pavements.

CONS: Recommends the "propensity to cycle" tool PTC Bike by Rachel Aldred (Westminster University)<sup>5</sup>. This allows you to look at current cycling levels and model the likely take up if Dutch style infrastructure were installed (and geography by substituting e-bikes to flatten out the effort in the landscape).

REGG: Surely there needs to be a minimum density of demand or critical mass for bike share? If people are using the bike mainly to get to work or shop, there's a 1-1 mapping between the user and the bike? Why not just have a workplace bike library? Or cycle to work loan? The exception might be inter-site trips eg Lloyds bank that has 2 sites in Halifax and staff use a bike pool to get between them. With e-bikes you can't leave a £2K bike on a country lane.

DFT: Very interested in the culture change using MaaS apps – eg Brompton bike hire. Asked about male/female demographics. There are rural projects in Somerset, Scottish Highlands and in new developments. So contractors are not typical Brompton users were using them from a housing site.

CONS: E-bike hire has been studied with shift workers, who commute outside the peak hours and often quite a distance. The advantages are that women feel much safer on e-bikes than normal bikes, thought to be due to

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<sup>5</sup> <https://www.jtlu.org/index.php/jtlu/article/view/862> and <https://www.pct.bike/tabs/about.html>

better acceleration in traffic. E-bikes see a 45:55 female:male user ratio compared to the usual 20:80 ratio. Also e-bike hire is cheaper than taxis.

### 6.10 Car Clubs and MaaS

TECH: Frustrated at the transport community talking about MaaS all of the time. It's important to focus on solutions that work. Car clubs are only realistic in London because there is the right mix of solutions plus demand constraints on car ownership and use. Neither of these exist in rural areas.

Be clear what problem you are seeking to solve and choose the best solution. Don't go looking for problems for solutions to fix.

DEV: Once a car club is established will others start to use it? CONS: Yes, using Experian mosaic to analyse users, CoMoUK found that 2/3 of the users are 'believers in car clubs' who will use it to save money even if they don't really need to do this. 1/3 are people who are financially struggling and the car club rescues them.

### 6.11 MaaS in Counties – general advice

REGG: West Midlands Connect has very diverse geography. Can't categorise urban/rural split simplistically. Each area needs a tailored solution. Rural Leicestershire isn't rural Cornwall or rural Hertfordshire. A market town differs from a village, which differs from a hamlet. Their study began with a local needs analysis. Existing services must be factored into the design of new services.

CONS, ACAD & GOV: Local cultures can vary enormously. Research project studying the market for MaaS in Southend and Hertfordshire has found varied demographics between market towns. Cambridge and Sheffield both have a Universities but very different appetites towards MaaS. In Hebden Bridge, lots of people have relocated from big northern cities and are shocked by the lack of infrastructure, which builds local pressure for change.

Consensus: Opportunity to use MaaS to serve commuters to rural rail stations who currently use taxis.

ACAD: Lots of small interventions might make a big difference, e.g. hubs at stations or workplace sites and infrastructure to get to rail stations (e.g. bus lanes). Refer to the findings of the Local Sustainable Transport Fund (LSTF) projects. There is nothing known about the travel patterns that e-bikes and e-scooters might create. People need help to try new things out, eg e-bikes. New settlements in rural areas are a big opportunity. But how to evidence exactly how the new modes will achieve a good modal split and reduce the need for investment in new road capacity and help the government meet carbon targets?

CONS: DfT should pilot putting lots of small interventions in one place.

ADAD: Single Occupancy Vehicle (SOV) trips can be eliminated in other ways and data helps show where a good fit is to be found. For example, in Hertfordshire a study found that a lot of nurses lived in a single location and would make a bus service to work viable, so offered a 25% discount for nurses to build demand for a viable conventional service.

National and Local government can do a great deal now to relieve immediate problems in counties. Congestion is a critical problem now.

TECH: Need to lower the barriers to entry for infrequent users or people who don't commute on a set route or crossing many local authority boundaries (eg radially around London). At each boundary change, a different app might be needed to access MaaS or travel planning services. People need easy access to information on how to use transport services. Young people have a fear of embarrassment if exposed as not knowing how to use a bus.

GOV: Need to understand psychology of perception and what makes people change behaviour. We need to identify what we want future journeys to be like for deep decarbonisation.

ACAD and GOV: Urban Future Mobility Strategy included guiding principles for MaaS: don't replace mass transit, don't undermine walking, don't undermine cycling. A rural Future Mobility Strategy needs similar principles.

DEV: Hertfordshire is so car dependent that the challenge is to encourage people to replace their second or third car. In one district in the county there is a village with a train station 2 miles down a straight road and everyone drives.

INNOV: But 10 years of bus cuts have forced people into high car ownership. Because these are a sunk cost, we need to be planning now for systems that will be successful in 10 years time, preventing people from replacing their 2<sup>nd</sup> and 3<sup>rd</sup> cars. Need to establish a good, long term and stable offer that will be attractive in 10 year's time, which will need major subsidy.

CONS: Rural Mobility Strategy is key because so much commuting to work in towns and cities is from rural locations. How to stop people driving the whole way? Eg Harrogate into Leeds, Cheshire into Manchester, Hertfordshire into London, Herefordshire into Birmingham or Bristol.

### 6.12 New Settlements and Planning

DEV: Consider covenanting to enforce car free or low car new housing developments. The behavioural literature is clear that moving house and other major life transitions are powerful opportunities to make a behavioural change. So creating new settlements is a key opportunity for changing travel behaviour. A standalone new village in the local plan provides an opportunity to introduce car club, restrain car use, reduce parking spaces. But convincing elected members is the big challenge.

TECH: If the planning is right, is parking restraint necessary?

ACAD: No, it depends what is built in to the site from the outset. Point from previous roundtable about getting planning for using parking areas as employment sites from the outset. Recapture the land. Also remember the Centreparks model, where people happily use the bike. Context is everything.

CONS: Carfree Scotland<sup>6</sup> is a good project with case studies of successful parking restraint.

GOVCC: Video-conferencing for work is still lower quality than that available to teenagers for online gaming environment. Need better broadband and better software.

### 6.13 Hubs and Small Towns

GOVCC: Cambridge had a problem with park and rides and getting heavy items from John Lewis in town to the car. So set up a John Lewis shuttle to drive shopping out to Trumpington. This kind of model could be useful in rural areas. Amazon drop off sites at hubs. – An opportunity.

REGG: Market towns need protecting so MaaS doesn't take the trade away from their centres. Therefore any hubs at Park and Rides, stations or edge of town sites must be carefully designed not to undermine the centre.

ACAD: Disagree, there must be local shops at the hub, e.g. shoe repair, dry cleaning, florists.

REGG Different scale and types of hubs are needed to fit different local needs. Could have online shopping and courier delivery lockers.

ACAD: Demand is changing, trips are changing. Need to use small town centres better. Consider the "Wework" model of neighbourhood work centres, to avoid a commute all the way to the employment site and avoid the isolation of working from home.

ACAD: What to do with out of town shopping centres?

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<sup>6</sup> <http://tourism.transformatescotland.org.uk/about-the-project/>

## 6.14 Rail and MaaS

Train/Bike is a natural symbiosis – but very hard to get Network Rail to collaborate. Parking pool bikes on rail station platforms is all that has been achieved so far. There are widespread major problems with parking near stations, especially if in areas with narrow streets. So logically MaaS, especially DRT should present an opportunity at rail stations. ViaVan has a pilot in Sevenoaks with Kent County Council and the rail operator to address the last mile to the station for commuters. Chiltern Railways had a similar project at Bicester. Also another train company is working on DRT at a rail station combined with bike share.

ACAD: Traintaxi<sup>7</sup> is a well established service, especially useful in rural areas.

## 6.15 Autonomous Vehicles

This was not a spontaneous subject for discussion.

The Chair tentatively summarised the discussion so far as recommending building on the transport services we already have and using data better to aggregate demand and innovate in rural areas, rather than rely on autonomous vehicle (AV) technology.

INNOV: It feels as if reaching Net Zero is more important than waiting for AV. We must first be sure we have a planet to live on; this is a ‘must have’ not a ‘nice to have’.

There was disagreement between GOV and REGG sectors about the relevance of the Human Drive Project to rural roads, white lining and kerbs.

GOV: The International Longevity Centre UK is very interested in AV for older people.

ACAD: It is logical to want to reduce the cost of drivers, so there is a benefit for AV for mass transit.

CONS: AV has promise in deep rural, liminal settings. In the Peak District there is a proposed AV pilot to provide shared transport to a rail station on quiet roads where the main obstacle is sheep.

TECH: The time, money and effort put into AV would have yielded more results quicker from working with existing solutions.

TECH: The connected aspect of CAV is essential. With VED going, driving has to move to a ‘pay as you go’ model. Sharing will happen via pricing. There should be tax incentives to make all vehicle fleets connected and shared.

GOV: The Future of Mobility project falls within a bigger initiative at DfT called the Flourish Project, which recently on older people and CAV<sup>8</sup>. The Centre for Ageing Better has also produced reports on the future of mobility.<sup>9</sup>

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<sup>7</sup> <http://www.traintaxi.co.uk/>

<sup>8</sup> Findings from workshops held with older people considering participating in Connected Autonomous Vehicle trials (2019) Flourish <http://www.flourishmobility.com/publications>

<sup>9</sup> <https://www.ageing-better.org.uk/news/future-ageing-and-mobility>  
<https://www.ageing-better.org.uk/publications/ageing-and-mobility-grand-challenge>

## 7.0 Reports and data sets research referred to in the discussion

Second Annual Survey of MaaS in the UK, Landor Links/LTT 2019

[http://www.landor.co.uk/downloads/MaaS\\_2ndSurveyContents\\_Foreword\\_ExecSummary.pdf](http://www.landor.co.uk/downloads/MaaS_2ndSurveyContents_Foreword_ExecSummary.pdf)

<https://www.beatekubitz.com/#/maas-annual-survey-2019>

Future local passenger transport system scenarios and implications for policy and practice (2020) Marcus Enoch et al. [https://repository.lboro.ac.uk/authors/Marcus\\_Enoch/1171632](https://repository.lboro.ac.uk/authors/Marcus_Enoch/1171632)

Transport Policy, <https://doi.org/10.1016/j.tranpol.2020.02.009>

Why DRT fails?

[https://www.researchgate.net/publication/42800012\\_Why\\_do\\_demand\\_responsive\\_transport\\_systems\\_fail](https://www.researchgate.net/publication/42800012_Why_do_demand_responsive_transport_systems_fail)

Future of Mobility: Urban Strategy, DfT

[https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment\\_data/file/846593/future-of-mobility-strategy.pdf](https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/846593/future-of-mobility-strategy.pdf)

A Fork in the Road: The future of transport in an ageing society, (2020) International Longevity Centre UK

<https://ilcuk.org.uk/wp-content/uploads/2020/02/A-fork-in-the-road.pdf>

Ageing and Mobility: A Grand Challenge (2019) Centre for Ageing Better

<https://www.ageing-better.org.uk/sites/default/files/2019-09/Ageing-and-mobility-grand-challenge.pdf>

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