# The Future of Rural Mobility: Opportunities to address rural needs

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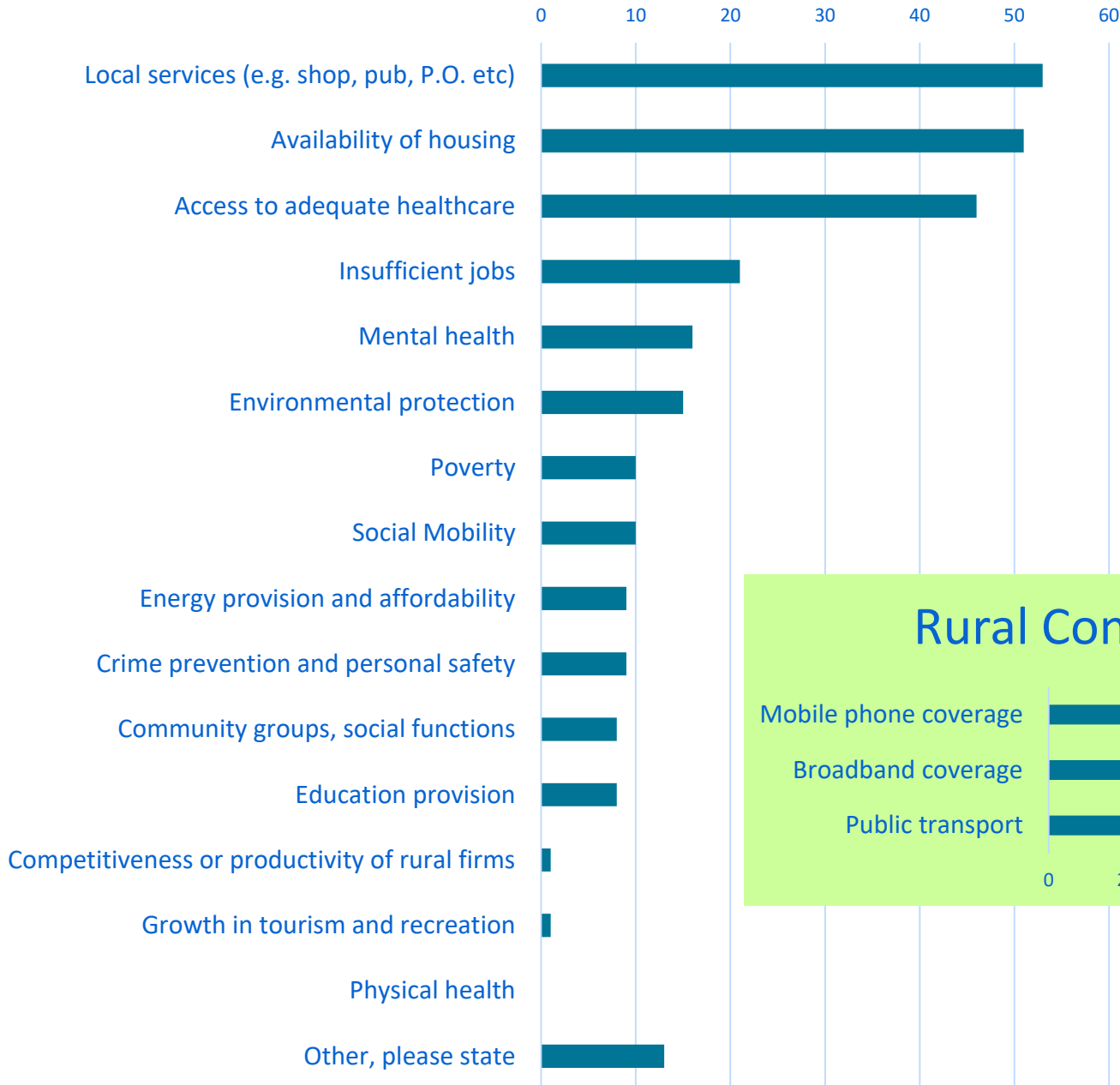
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# Aims & Rationale

- Shortcoming in national policy assuming that transport and mobility innovations start in urban regions and then trickling down.

- Instead, rural regions will need different solutions to tackle rural need, **designed for rural places,** and integrated into urban systems

- The aims of the project were therefore to:

i. Review the various needs of people and business in rural areas

ii. Assess the new and future mobility tools available to rural areas

iii. Create a framework to align potential mobility and connectivity innovations with rural needs

iv. Create a "Toolkit" of technical and non-technical options available to support stakeholders developing new policies and initiatives for rural transport
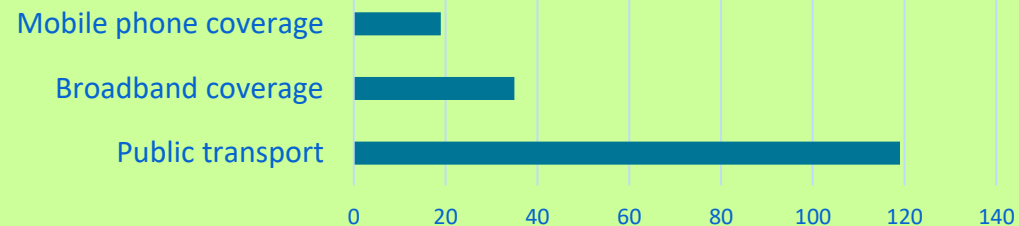
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# Rural Needs

- With thanks to the RSN members for completing our survey…

- 171 responses identified the key rural needs as: Access to health services; Availability & affordability of housing and local services

- "Insufficient Jobs" and comments about low pay jobs and lack of career progression opportunities also featured

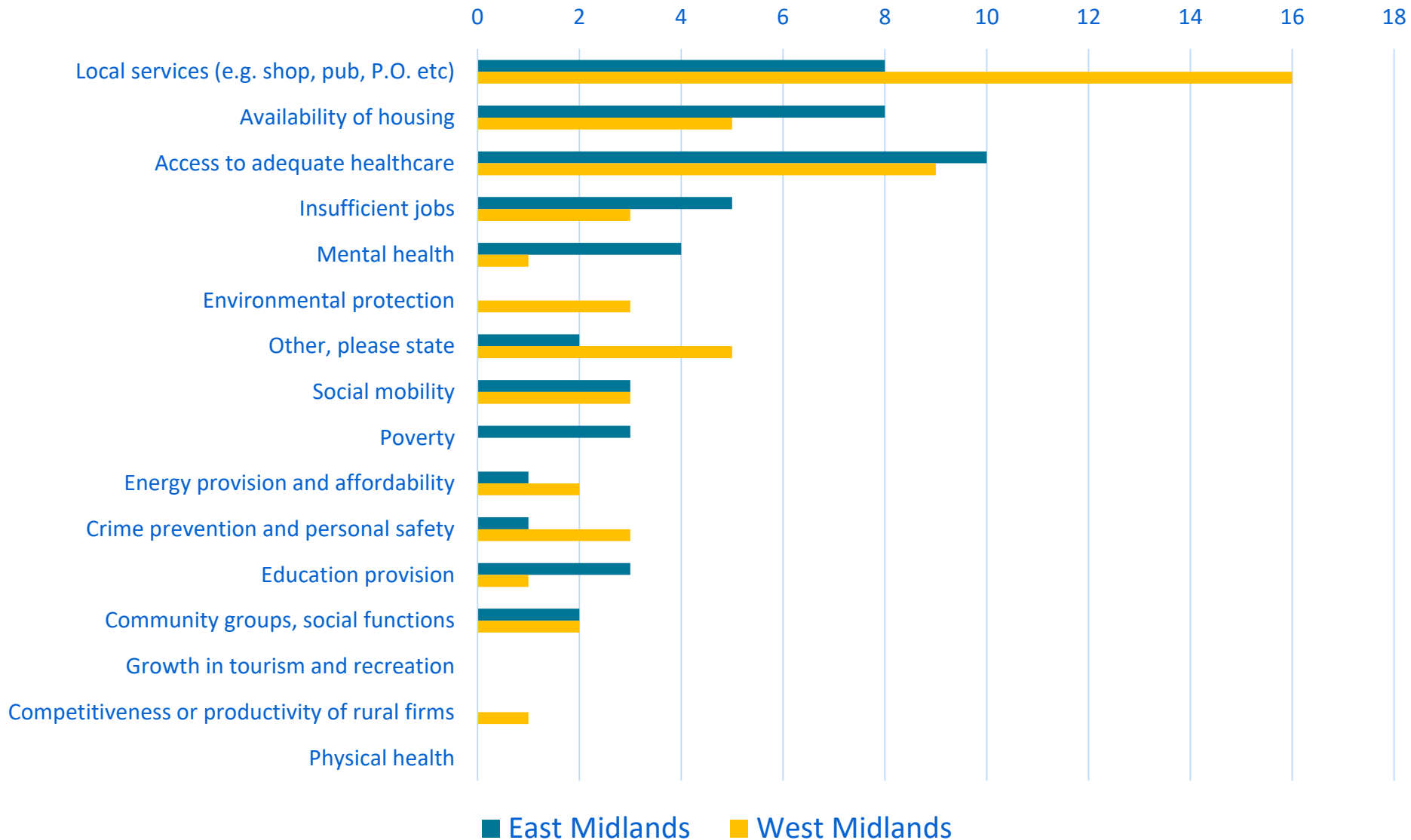- Broadband, mobile phone coverage and transport are means to address other rural needs.

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# Rural Needs (n = 171)

| Category | Value (approx) |
|---|---|
| Local services (e.g. shop, pub, P.O. etc) | 53 |
| Availability of housing | 51 |
| Access to adequate healthcare | 46 |
| Insufficient jobs | 21 |
| Mental health | 16 |
| Environmental protection | 15 |
| Poverty | 10 |
| Social Mobility | 10 |
| Energy provision and affordability | 9 |
| Crime prevention and personal safety | 9 |
| Community groups, social functions | 8 |
| Education provision | 8 |
| Competitiveness or productivity of rural firms | 1 |
| Growth in tourism and recreation | 1 |
| Physical health | 0 |
| Other, please state | 13 |

## Rural Connectivity Needs

| Category | Value (approx) |
|---|---|
| Mobile phone coverage | 18 |
| Broadband coverage | 35 |
| Public transport | 118 |

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# Rural Needs in the Midlands

| | 0 | 2 | 4 | 6 | 8 | 10 | 12 | 14 | 16 | 18 |

Local services (e.g. shop, pub, P.O. etc)
Availability of housing
Access to adequate healthcare
Insufficient jobs
Mental health
Environmental protection
Other, please state
Social mobility
Poverty
Energy provision and affordability
Crime prevention and personal safety
Education provision
Community groups, social functions
Growth in tourism and recreation
Competitiveness or productivity of rural firms
Physical health

■ East Midlands   ■ West Midlands

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# Rural Needs

"Lack of affordable housing is stripping young, working people from our communities"

"lack of affordable housing and job opportunities for younger people"

"Rural areas are becoming increasing unaffordable… they also suffer from a lack of services such as GPs without travelling significant distances"

"There is no bus service at all in the evenings"

"Loneliness is a huge problem"

"a lot of widows and widowers… rely on non existent public buses, kindness of neighbours or increasingly community transport to get to the health centre, hospital and shops"

"the lack of affordable public transport can prevent people travelling even relatively short distances to access social and medical services etc"

"[having only one bus route]… I and the other residents are only too aware that we are often "cut-off" and depend on the few local facilities. With a higher than average ageing population, it is often difficult for the true residents to access healthcare and basic daily service"

# A Framework of Rural Needs

| BUSINESS AND ECONOMY | SOCIAL AND COMMUNITY |
| --- | --- |
| Green energy; Ageing population; Access to health services | |
| Skilled workers | Social mobility & aspirations |
| Access to training and networking | Access to education and training |
| Accessible homes for employees | Affordable housing |
| Flexible working spaces | Home-working and flexible working arrangements |
| Broadband and phone coverage | Broadband and phone coverage and ICT skills |
| Quality of life to attract workers | Socio-cultural activities |
| Natural environment (esp. tourism) | Green space for healthy lifestyles |
| Meeting spaces | Combatting isolation. "Third places" for social interactions (e.g. pub, café, park) |
| Financial services (esp. for cash businesses) | Essential services (e.g. PO, bank, shop, pub) |
| Access to/for customers | Access to other places for retail & recreation |
| Premises for growth | |

| Tool / rural need | E-conference; E-retail | Lift-share apps; car-clubs | "first mile" vehicles (incl. AV) | Drones (goods, people, data) | Village Hubs | Rural P&R/Hubs | Robotics |
|---|---|---|---|---|---|---|---|
| Education and training(skilled workers) | | | | | | | |
| Affordable housing | | | | | | | |
| Healthcare | | | | | | | |
| Isolation & mental health | | | | | | | |
| Rural retail and financial services | | | | | | | |
| Community/meeting spaces | | | | | | | |
| Environment | | | | | | | |
| Social mobility & youth aspirations | | | | | | | |
| Business growth | | | | | | | |
| Social/cultural activities/QoL | | | | | | | |

# Community transport

- *There could be better co-ordination of existing services such as school buses, community transport and minibus patient collection schemes (House of Lords Report)*

- We identified many community-level schemes, each with slightly different governance and funding structures & variable levels of service with different eligibility criteria

- Limitations: Lack of availability at weekends (esp. recreational travel) and the need to register as a user and to book journeys at varying intervals in advance of travel

- A national framework to provide digital infrastructure could transform community transport provision

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# European Examples

- G-Patra (EU Interreg funded project) staged a "mobility bazaar" where a number of existing and new service providers where discussed with rotating groups of rural transport professionals.

  https://northsearegion.eu/g-patra/

- CORA: An ongoing project with EU partners developing a "Systematic Synergy Enhancement model", which provides a comprehensive set of guiding measures towards digitalization in rural areas. It employs fixed and mobile digital hub concept for providing in-place advice, technology demonstration and incubator spaces  https://northsearegion.eu/cora/

Midlands Connect

# https://mobihubs.eu/

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# A rural hub model

- Partly inspired by Mobi-hubs, a lot of our thinking revolves around hubs to enable a range of other mobility innovations

- We are keen to run trials in 2 or 3 villages to assess the feasibility of rural hubs.

- These could provide a focus for car-sharing, e-vehicle charging, rural deliveries, "last-mile" transit technologies, business workspaces, learning lounges and other social functions.

- The additional footfall at these sites can provide new business opportunities too – for transport providers and other rural services

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# A rural hub model

# A rural hub model

- **Rural "Park & Ride" hubs: Effective in NI**
- **Locate at rural road intersections**
- **Hub for accessing multiple urban centres**
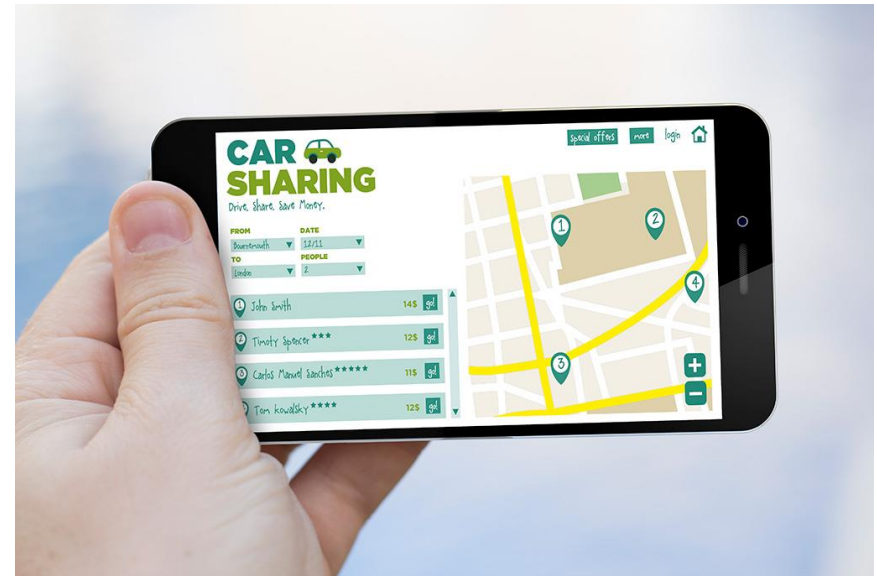- **These might be rail stations and/or market towns but other key nodes in the network could be identified**

# Rural Mobility Toolkit:- Emerging thoughts

1) Co-ordination of transport budgets, infrastructure and existing transport provision: Maximise the value of what's already there

   - A place based approach needing local governance

Many providers of transport operate separate budgets with slightly different targets: inefficient and lacking strategic leadership?

2) Digital mechanisms to reward providers of lift-shares (UBER)

- digital payment infrastructure that tracks per mile travelled in a registered car share. Automated payments on a cost-share basis. Rates set by the scheme to avoid profiteering. Scheme provides safeguarding and vetting of participants.

# 3) E-learning; E-health and Tele-working

- Advances in virtual reality technology will make video-conferencing more realistic; Cloud-based and virtual project collaboration tools are increasing the flexibility of workplaces

- A hub model would allow a check-in system for homeworkers and "help points" to empower tech adopters

# 4) Last mile vehicles

## SCHEEMDA ELECTRIC DRIVERLESS SHUTTLE

Scheemda Ommelander Hospital electric driverless shuttle (Arriva)



Jan Emmelkamp

Starting Monday, August 6 2018, an autonomous little Navya electric bus connects the entrance of the Ommelander Hospital with the closest regular bus stop at the Molenstraat in Scheemda, around 1.5 km away. The bus, with registration 10-00-ZZ (the ZZ series is used for special vehicles), is "operated" by Arriva. Though there is no driver,
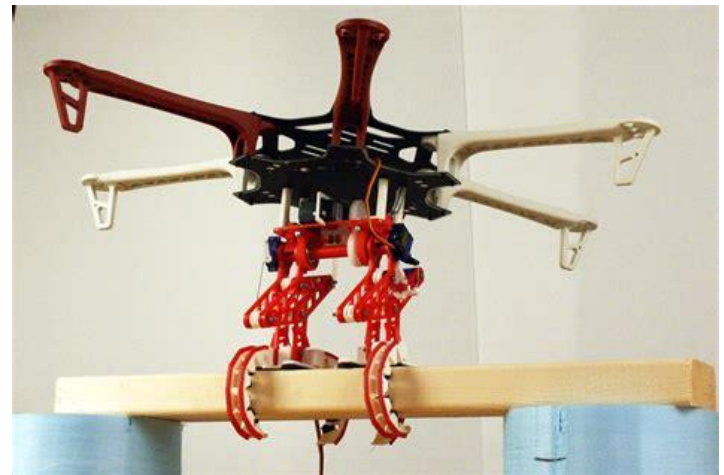
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5) Freight (cont'd): rural areas are produce a disproportionate amount of goods – especially bulky items like minerals, food etc.

- Innovations in containerisation

- Autonomous lorries      Implications for rural mobility

- Banning lorries from city centre

- Already in some ports

- Location of warehousing may change

- Disruption of food and drink supply chain

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## 4) Freight and home delivery

- Legal challenges relating to drone flight and challenges for security and safe landing sites

- Identify opportunities for village retailers to provide distinctive offers: align rural services with delivery hubs.
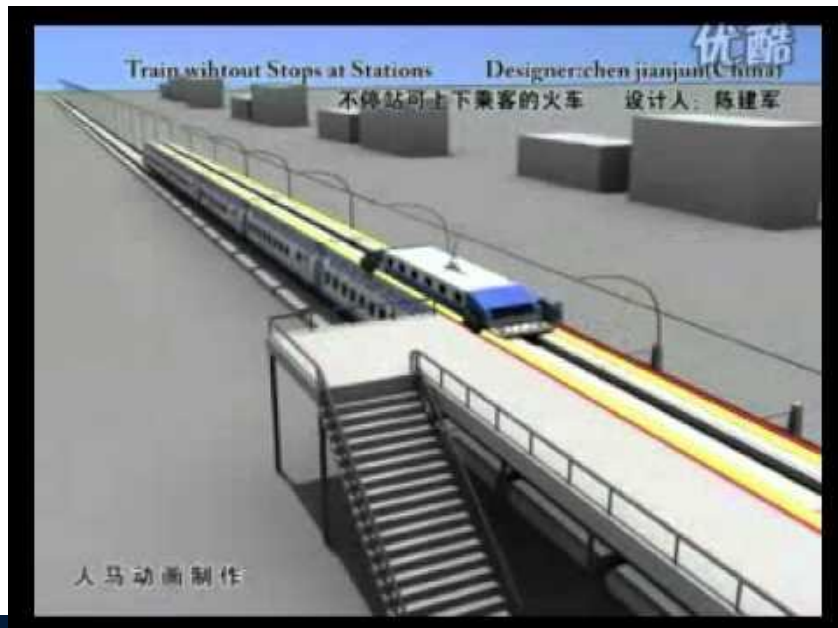
# 6) Autonomous drones

**7) Rail Innovations**

- Young adults in Great Britain and other countries are driving less now than young adults did in the early 1990s    (Chaterjee et al, 2018)

- Rail trips have increased for young adults but the increase is relatively small compared to the decrease in car driver trips

Left: non-stop trains;    Above: Pod trains

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Rail Innovations (cont'd)

- Advances in e-ticketing and online timetables along with Wi-Fi on trains are all making it more convenient…

- But many rural lines lack Wi-Fi, have too few coaches and do integrate effectively into main line connections

- Re-opening lines is costly, but can be transformative… e.g. the Borders Line

- Of those who had moved house, 29% stated that they would not have moved to their current address in the absence of the railway
- 52% of those who had moved employment stating that the re-opening of the line had been a factor in their decision
- For tourists, 71% said the re-opening of the line was a factor in choosing to make their trip; 25% stated they would not have made the trip had the line not been in place.

# Mobility for Rural Tourism

- Link rural attractions more effectively & use smart data techniques to model tourist travel demands: Essential need to map tourist travel – potential for more "event-based" transport provision

- Different hub-destinations and less regular patterns of travel

- Tourism routes could be used by commuters and others too but need to be designed with rural tourism in mind…

- e.g. Hadrian's Wall walkers – provide travel for luggage or travel to/from overnight accommodation

- Eco-tourism: would people be willing to have slower routes if the journey was part of the experience?

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# Behavioural shifts

- Incentivise public transport use – Wi-Fi on buses

- Incentivise green alternatives (e.g. e-taxis)

- Make mode-shifts easier, reliable and more habitual

- Disincentives for inefficient use of private transport

- Reduce private city-centre transport access

- Build familiarity with digital technology to replace mobility needs AND identify alternative behavioural changes to tackle isolation

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# Infrastructure needs

- Comprehensive, reliable broadband underpins many of these developments

- Data science to predict and manage transport demands

- E-vehicles charging points, battery developments and reliable power

- For AVs, dedicates spaces and changes to highways laws

- Rail investments

- Airspace and landing spaces for drones

- Security measures to protect autonomous vehicles and to protect the public

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# What role for the Public Sector?

- The Public sector needs to facilitate investments but is unlikely to have the resources to make the investments and run the services

- Community-led companies will drive some of the solutions, global giants will push other technology…but this is more likely to be urban-led

- The public sector has a key planning role

- The public sector as a regulator can drive behavioural changes among firms and individuals

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# What role for the Private Sector?

- The private sector will innovate where they see the most profitability

- In many cases this will be cities, but entrepreneurial rural transport opportunities will emerge – many in partnerships

- How can we prompt action from the private sector and support third sector delivery of transport innovations?

? ? ?

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| Tool / rural need | E-conference; E-retail | Lift-share apps; car-clubs | "first mile" vehicles (incl. AV) | Drones (goods, people, data) | Village Hubs | Rural P&R/Hubs | Robotics |
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| Education and training(skilled workers) | | | | | | | |
| Affordable housing | | | | | | | |
| Healthcare | | | | | | | |
| Isolation & mental health | | | | | | | |
| Rural retail and financial services | | | | | | | |
| Community/meeting spaces | | | | | | | |
| Environment | | | | | | | |
| Social mobility & youth aspirations | | | | | | | |
| Business growth | | | | | | | |
| Social/cultural activities/QoL | | | | | | | |

# Summary

- Our Toolkit will offer a suite of options – some for the near future, others to "future proof" rural areas facing changing mobility needs

- Solutions MUST include a combination of technology-enabled innovations, organisational innovations & social/behavioural change

- Continuing <u>growth in our rural economies</u> needs investment in transport and digital infrastructure.

- An <u>ageing rural population</u> brings a different set of mobility challenges

- For <u>younger people</u>, the future of work, recreation, family and environmental lifestyles present even greater uncertainties.

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# **Looking ahead…**

- We therefore call for a ring-fenced "Future of Rural Mobility Fund" to support initiatives including:

- Trials in different rural locations

- Digital and electrical infrastructure

- Private sector innovation challenges

- Support for smaller rural transport providers (incl. community sector) to adopt the latest technologies

- Promotion of sustainable transport alternatives, including "active transport"

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