Thank you for joining “TDI Webinar #8 – Future Transport Zones”
This Live Event will start soon...

With thanks to our speakers:
Welcome to TDI Webinar #8 – Future Transport Zones

Wednesday 21st July 2021, 11:00 – 12:00, Microsoft Teams Live

With thanks to our speakers:
TDI Webinar #8 – Future Transport Zones

Introduction

Giulia Scarani, Micromobility and Future Transport Zones Policy Lead, Department for Transport

With thanks to our speakers:
Introduction to Future Transport Zones

Giulia Scarani, Micromobility and Future Transport Zones Policy Lead, Department for Transport
**Future Transport Zones**

### What are Future Transport Zones (FTZs)?
- Testing at scale is an important way to understand risks and benefits. That is why we have developed FTZs to support local leaders and industry to trial new approaches.
- £92m investment in globally significant demonstrators of new digitally enabled mobility services, modes and business models.
- An opportunity for a range of data and digital mobility innovations to be trialled at significant scale, with a focus on improving mobility through use of data, new modes and services.

### Where are the FTZs?
- **West Midlands Combined Authority** announced as pathfinder, securing £22m in 2019.
- **Derby and Nottingham, Portsmouth and Southampton (Solent) and West of England Combined Authority** announced as winners in March 2020, sharing £70m.

### What will FTZs look like?
FTZs will create a functional market-place for mobility in the area (see diagram below). Individual measures selected by winning areas include:

- **Mobility as a Service trials**
- **Digital infrastructure**
- **Data harvesting and analysis**
- **Drone trials for medical deliveries**
- **Mobility hubs at key transport interchanges**

![Diagram showing the layers of the Future Transport Zones (FTZs) framework]

- **CONSUMERS**
  - Providing the best possible information on journey options (price, speed, modes, routes), ideally including seamless purchasing of end-to-end journeys incorporating local charges or regulations.

- **MOBILITY PROVIDERS**
  - Including traditional public / mass transit services alongside private, ride-hailing and micromobility services.

- **INFRASTRUCTURE**
  - Physical and digital infrastructure, land use planning and regulatory frameworks re-orientated to reflect changing demands, the need to encourage active travel and more flexible use cases.

- **THE MOBILITY MARKETPLACE**
  - Navigation, Subscriptions, End-to-end journey purchasing, Data, Ticketing, Choice, Multi-modal options.

- **COMMERCIAL / REGULATORY ARRANGEMENTS**

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Department for Transport
Data plays and important role in the successful delivery of FTZs

• Good data collection and availability will be the underlying enabler for a lot of the initiatives that are being rolled out in each of the FTZs, such as MaaS and Transport Hubs.
  o Nottingham City Council together with Vivacity Lab have been trialling a smart vehicle monitoring system aimed at reducing congestion and encouraging alternative modes of transport.

• Other FTZs are developing ad hoc 'Data Hubs' to integrate existing information together with new data collected, with the aim to deliver better and more integrated transport within their area.

• DfT is undertaking a national evaluation of FTZs, which will span over the course of four years. Learnings from the evaluation will rely on good quality data collection, sharing and analysis. DfT is working together with FTZs and national evaluator NatCen to ensure that we can maximise learnings from the data.
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Experimental Drone Flights for the NHS
Conrad Haigh, Transport Manager, Solent Transport
Solent Future Transport Zone
Experimental Drone flights for NHS
Our Geography

Solent = 20% of TFSE population

1.5M people = more than Copenhagen, Oslo, Dublin, Edinburgh, Cardiff, Bristol.

Travel patterns of people and goods do not respect political or organisational boundaries.

Isle of Wight asked to extend their E-scooter Trial and be part of MaaS so FTZ now covers the whole island.
Overview of the Solent FTZ Programme

** = Progress paused, currently under review due to Covid-19
Drones Project - Why?
Drones Project - Why?
Drones Project – Why?
Drones Project

i) Development of Air Traffic Management systems for manned/unmanned aircraft
ii) Case studies with the NHS into medical logistics using drones
iii) Asked if we could do anything to assist St. Marys hospital in their Covid-19 response

What Was Required:
- Safety case approved by the CAA for Ultra
- Technical Danger Area (TDA) agreed for the Lee-on-Solent to Binstead route
- Approval to carry benign cargoes (non-dangerous)
- Liaison with Binstead and Solent airfields to allow flights
- Ultra team logistics at LOS and Binstead for flight testing
- Believer flights at as tests before Ultra flights
- Land logistics needs and liaison with the NHS

UK Aviation Firsts:
- First “point to point” BVLOS flight of a fixed wing UAV in the UK between airfields
- First delivery of “real” NHS payload in the UK
- First BVLOS flight close to high population density urban areas and infrastructure
- First BVLOS flight at an airport with concurrent operation of manned aircraft
- First BVLOS flight of next generation “masterless” avionics (UK patent in progress)
Craft from first trail Windracer’s Ultra
Key Lessons Learnt from Covid Response

What the NHS Need Most From Drones
- Small consignment dangerous goods movements
- Patient diagnostic samples and aseptic medicines
- Small drones – point-to-point (hospital to hospital helipads; pharmacy to hospital)
- Emergency blood movements

Key Lessons Learnt from Covid Response
1) Most drones currently unsuitable for specimen movement
2) Dangerous Goods approval key for movement of NHS loads
3) Most effective type of drone for NHS medical logistics
4) The need for full automation via air traffic control

Next Steps
- DG application for Ultra
- Aseptic medicine data from St Marys to understand movement frequencies and simulate drone logistics
Future Transport Zone Drone Trial

The drone trial attracted media coverage including Wave FM. A press day was held at Solent Airport for the TV stations to attend and interview Solent Transport and UoS representatives:

- **National TV and media aggregates**
  - BBC, ITV, Associated Press and Reuters

- **Offline and online press**
  - BBC
  - Design Products and Applications
  - Unmanned Airspace website
  - uSAS News
  - Portsmouth News
  - Fleet News
  - Aviation Week
  - Transportation Professional
  - Transport Xtra
  - The Times
  - Smart Transport Magazine
  - Island Echo
Drone Trials (August/September 2021)

Outline

• Project led by the University of Southampton - moving medical samples and supplies between hospitals in Southampton, Portsmouth and Isle of Wight by uncrewed drones - potential to slash transit times and enhance healthcare services for Solent residents in isolated areas

• Trials of a vertical take-off and landing (VTOL) drone between Portsmouth Queen Alexandra Hospital and St Mary's Hospital on the Isle of Wight, scheduled to run from late Aug/early Sep for 3 months

• Will enable confirmation that project work packages address all necessary logistics issues for both VTOL and fixed wing drones

Details

• Partnering with Apian, a medical drone startup, who have CAA permission to fly using a TDA (Temporary Danger Area)

• A Mugin V44 drone will be used for the trials (see picture)

• Minimum 30 flights during the trial period

• Payload: TBC, but possibly using redundant chemotherapy treatment to assist in quantifying the vibration impacts (a project task)

• Contract currently being finalised between University of Southampton and Apian

Additional activity

• Development of an augmented reality simulator (headset) to recreate the sensation of the drone landing and taking off in the observer's field of view (borrowed tech)
Thank You
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West Midlands Future Transport Zone and the Mobility Showcase
Mark Collins, Innovation Integration Lead, Transport for West Midlands

With thanks to our speakers:
West Midlands
Future Transport Zone

University of Warwick
Sustainable Travel Showcase
The Future Transport Zone is a Transport for West Midlands run, Department for Transport funded (£22 million), programme looking at what the future of transport could be for the West Midlands.
Future Transport Zone
Philosophy

**PROBLEM to fix:** The way we collectively choose to travel and move goods is not sustainable.

**WHY we exist:** We empower and enable people to make sustainable travel decisions

**HOW we work:** Focus on how we connect people cleanly and safely

**WHAT we do:** FTZ seeks to understand the population and travel behavior more deeply; then uses new technology/systems/services combined with an improved data capability to empower and enable people to make sustainable travel choices.

**STRATEGY principles:** Our strategy is intentionally iterative. Based on population insight new technology/systems/services/data approaches are trialed in a controlled manner. Impacts are assessed against Environmental, Economic and Social variables. Subsequent activities are based on the resultant balance of these factors.
Future Transport Zone

“We empower and enable people to make sustainable travel decisions”

The FTZ seeks to understand the local population, developing new transport services to further modal shift and transport decarbonisation. Promoting a clean and green recovery this activity is underpinned by an developing data capability and deployment of the mobility as a service (MaaS) model.

FTZ Legacy

UNDERSTANDING behaviour around transport

TARGETTED transport inventions become possible

DATA architecture capable of managing a network of increased diversity and complexity

The FTZ seeks to understand the local population, developing new transport services to further modal shift and transport decarbonisation. Promoting a clean and green recovery this activity is underpinned by an developing data capability and deployment of the mobility as a service (MaaS) model.
FTZ Showcase – University of Warwick

Data gathering, Insight, Monitoring and Evaluation
Communications and Marketing

Existing services

Additional services

One service interface

Infrastructure improvements

Experience amplification

Incentives

Disincentives

FTZ funded programme until March 2023
Experience Amplification

I want to be ENTERTAINED

I feel SAFE

I am in COMMAND

I value my WELLBEING

I want to reach my DESTINATION

I require a SERVICE

EXPERIENCE AMPLIFIERS

I want to SOCIALISE WITH OTHERS

Light my way to pick up

Know who I’m travelling with

Preference my pickup

Cost up front

Control onboard ambiance (smell, lights etc)

Partitioned / zonal travel

I want to learn

Errand share

Learn a new skill (language)

Time management service

I want to

reach my

DESTINATION

I require a

SERVICE

I value my

WELLBEING

I am in

COMMAND

I feel

SAFE

I want to be

SOCIALISE WITH OTHERS

I want to be

ENTERTAINED

I want to be

PRODUCTIVE

Travel buddy service

Individual screen control and access

Cinema (IMAX experience)

Power provision

Lighting adjustment

Adjustable seating

WiFi

Working tables

ETA display

Food / drink on arrival

Light my way to pick up

Know who I’m travelling with

Preference my pickup

Cost up front

Control onboard ambiance (smell, lights etc)

Partitioned / zonal travel

I want to learn

Errand share

Learn a new skill (language)

Time management service
The Challenge is Significant…

Study based on priority needs when considering commuting (Binley Industry Estate, Coventry). This is mode agnostic but 71% of population drive to work.

Hygiene – must do well
Opportunity for differentiation from car travel
Positive reinforcement opportunities
With the customer at its heart, end to end customer experience is the key saleable commodity driving modal selection. It also offers a bridge to connect elements of lifestyle together, not limited to transport.
Choose Your Way Warwick:
We’ve introduced new, fun, innovative and environmentally friendly transport options to give you more choice when travelling to, from and across the Warwick campus

Choose better ways to travel www.warwick.ac.uk/choosewayourway

Ground-breaking trial project launched to reduce private car use at the University of Warwick

Thursday 04 March, 2021

E-scooters, buses on demand and Enterprise Car Club vehicles are just some of the innovative transport projects being looked at to reduce personal car usage under a two-year trial at the University of Warwick.

The Future Transport Showcase will involve a number of new projects aiming to reduce private vehicle usage, cut carbon emissions and create a safer, more environmentally friendly campus.

Transport for West Midlands (TfWM), which is part of the West Midlands Combined Authority (WMCA), has teamed up with the University of Warwick on the two-year trial.
Delivery Programme

Monitoring all local service traffic gives full visibility of new travel practices and allows for granular understanding of certain influences, e.g. local events / monetary incentives etc. This can be supplemented by survey work qualitative analysis.

Customer insight around who and why modal decisions are taken will result from interviews, travel diaries, surveys and segmentation model.

Service dashboards will exist to monitor all local travel movement.
What we’re learning

Focus on service growth. Building service awareness and use without strenuous targets for revenue.

Recognising that travel behaviours are in a transient period. Choice availability and awareness now can help define new sustainable behaviours later.

September is a key target. With a new cohort of students we seek to make initial judgements about modal mix and viability Sept 21 – Mar 22.
As part of our analysis we are conscious to understand **WHY** certain stimuli deliver the modal trends we are observing. To do this we need to link **JOURNEY TYPE** with **WHO** is travelling and also what their respective **AVAILABILITY** is for any particular service (start and end of journey).

To do this we will build upon our data dashboard, supplemented by our qualitative research and bolstered by our geographic understanding of service coverage.
Thank You

Mark Collins (mark.collins@tfwm.org.uk)
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Opportunities to Exploit Cooperative Traffic Management Services

Shyful Choudhury, Principal Engineer, Connected Places Catapult

With thanks to our speakers:
Opportunities to Exploit Cooperative Traffic Management Services

Shyful Choudhury
Principal Engineer
Catapults – a force for innovation and growth

A network of world leading centres designed to transform and accelerate the UK’s capability for innovation and future economic growth.
Background

Connected Vehicle Data Research project developed strategy for near term opportunities for connected vehicle data

CVDR

Manual for Smart Streets

LAMP guidance will bring LAs up to date with new technology driven traffic management services

LAMP

‘MfSS’ enables strategy delivery by developing use cases for connected vehicles and provide national guidance for their implementation

Enabling Delivery of the Six CVDR Action Plans

<table>
<thead>
<tr>
<th>Strategy Area</th>
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<tbody>
<tr>
<td>Talking Traffic Partnership UK</td>
</tr>
<tr>
<td>Migration and legacy</td>
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<tr>
<td>Establish and exploiting national Facilities</td>
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<tr>
<td>Readiness of people and organisations</td>
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<tr>
<td>National connected vehicle data service design guidance</td>
</tr>
<tr>
<td>Business case and procurement</td>
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</tbody>
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CVDR - Connected Vehicle Data Research project
LAMP – Local Authority Mobility Platform project

Connected Places Catapult
Why is it important now?

- **Policy context** – Build Back Better and Levelling Up to encourage innovation and build Local Authority capability
- **Future Transport Zones** – Opportunity to adapt best practice, learning and provide national consistency
- **Alignment with DfT Strategy** – Providing cooperative roadside services, moving away from isolated pilots to at scale deployment
- **DfT Data Strategy** – Ensure data is open and interoperable and allow for simpler and more successful LA procurement and more certainty for suppliers
- **Digitisation and Digitalisation** – Data, tools and systems need to be updated, approaches and processes transformed
- **Commercial** – Support the development of an engaged marketplace
- **Societal benefits** – More options for the end user to make informed decisions over travel choice

Recommendation 2A:

“Create a framework and standards for Local Authorities to support current and future services”
Goal
Guide the effective and impactful rollout of a next generation traffic management at scale utilising co-operative connectivity and intelligence

Objectives
1. Identify and close gaps in current body of knowledge to support rollout of cooperative traffic management services at scale
2. Review and incorporate latest connected vehicle to infrastructure developments to realise opportunities
3. Engage with LAs and industry to gain their inputs, establish readiness, and facilitate preparedness to deliver
Traditional traffic management systems are dependent upon infrastructure investment and road user interaction.
Next generation traffic management systems provide a **lower cost** and **seamless interaction** with road users.

Co-operative communication between infrastructure and vehicles improving vehicle data/lowering costs, new opportunities for prioritisation and optimisation.

Improved data for traffic planning.

In vehicle signage / notifications / warnings.

User information alerts to their device ‘Heavy’ roadside infrastructure can be removed.

Users may seamlessly subscribe to real-time information e.g. via API to mobile application. New opportunities for seamless end user payments/booking and real-time traffic operations planning.

Connected Places Catapult
MfSS: The toolkit that Local Authorities need

A ‘toolkit’ enabling LAs and their suppliers deliver

LAMP laid the groundwork

MfSS will build on this groundwork, drawing on CVDR, to:

1. Bridges the gaps that LA’s/Industry need to enable rollout delivery at scale
2. Leverage the opportunities provided by developments in connectivity
3. Engages with LAs and Industry to prepare them for rollout

In a way that supports the strategies & goals
The service lifecycle

1. Define high level needs
2. Market testing
3. Strategy and plan
4. Specification
5. Procurement route
6. RFI and Tender
7. Tender evaluation
8. Award
9. Implement and operate
10. Decommission

- What are the benefits? How are they quantified?
- Are there suppliers? Is it off the shelf or bespoke?
- What are the risks? Bleeding edge or leading edge?
- Links to existing systems? Or replace and rebuild?
- Funding? Programme?
- Design? Functional Requirements? Data need?
- Are there standards? Regulations? Common Specifications
- Innovation needs? Frameworks? Cloud first?
- Rules and regulations?
- Integration and testing?
- Data transfer?
- On going service provision

LAMP: Mobility Solutions Toolkit
Conclusions

The Manual for Smart Streets

Driven by trends of connected users and vehicles there is a need to guide the rollout of a next generation traffic management which utilises co-operative connectivity and intelligence

- Guidance to facilitate the uptake and rollout of the next generation digitalised and co-operative traffic management
- Framework that maximises efficient delivery of high value impacts
- Deliver initiative to steer market towards satisfying society needs and achieving policy goals
- Guide the adoption of common best practices that support competitive efficient services and support end user needs
- Publish guidance that may be exported internationally, further supporting UK industry
Thank You

Shyful Choudhury
Principal Engineer

CATAPULT
Connected Places
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Q&A Session

Chaired by: Giulia Scarani,
Micromobility and Future Transport Zones Policy Lead, Department for Transport

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We look forward to seeing you again soon!

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