



Department
for Transport

 UN Big Data Regional Hub for Africa

Mobile Network Data

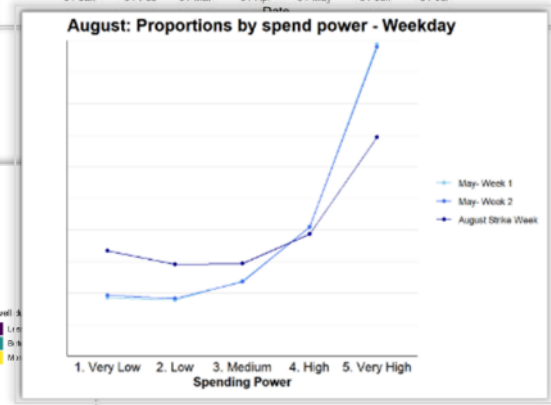
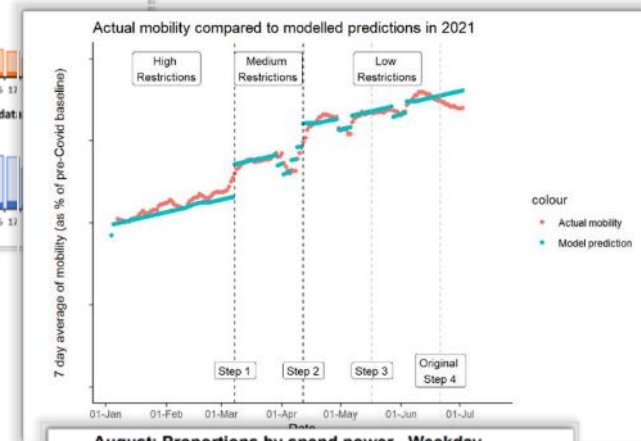
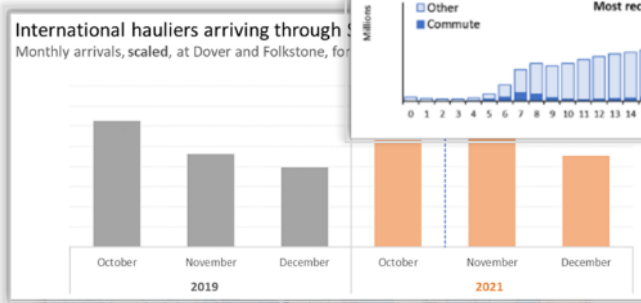
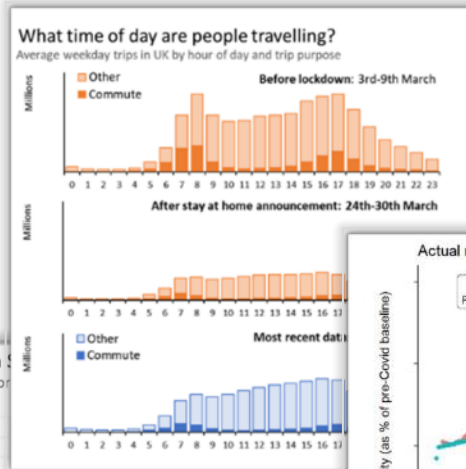
Using a novel data source in
understanding mobility

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Since 2019 DfT have sourced novel, anonymised and aggregated mobile network data to analyse the impact of policy measures, monitor crises, and better understand transport users



1. Predictive and national analytics

- ▶ During the COVID pandemic, mobile network data was used to develop cross-modal national metrics, refine assumptions for forecasts and baseline local transport needs

2. Modal and demographic splits

- ▶ After the initial periods of rail industrial action, population movement data was used to understand how these events impacted modal splits and whether any groups (e.g. age, gender) were affected more than others

3. New and novel modes

- ▶ For Electric Vehicles and freight, where departmental data does not give a full picture, mobile data is being used to supplement analysis and inform policies such as infrastructure planning and evaluation

4. Near real-time monitoring

- ▶ During London Bridge and Golden Orb, movement data was processed into hourly reports and a dashboard, which were used to brief the departmental operations centre and manage any potential disruptions to the transport network

Use cases for Telecoms data

1. Measuring and Predicting mobility during crises

Data format:

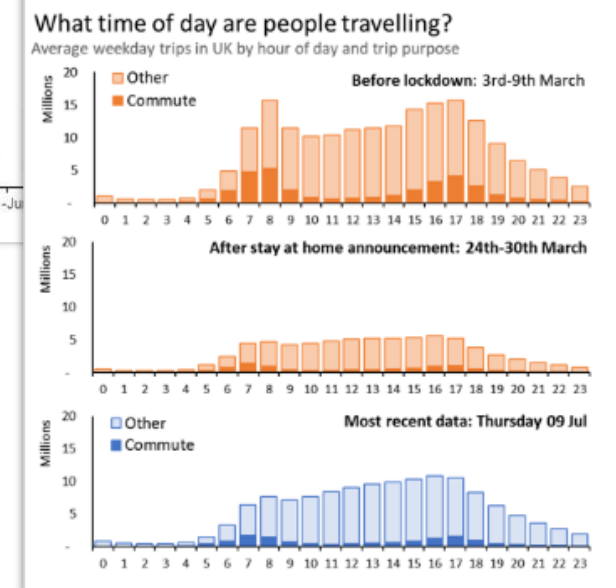
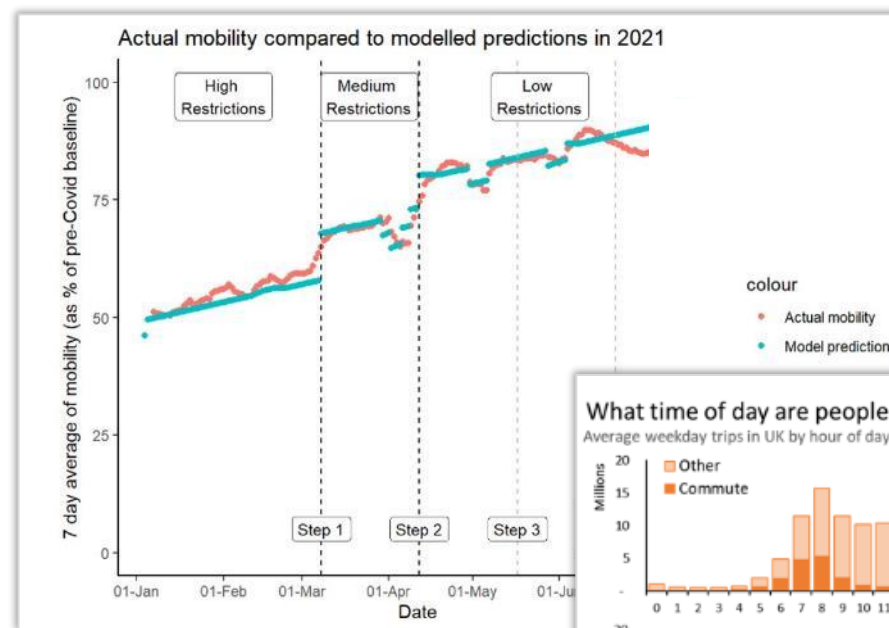
- ▶ **Cross-modal** population movement data, **by local authority**, segmented by **trip purpose** and **demographics** (e.g. age, gender) can be used in crises to forecast expected mobility and compare against observed behaviour patterns.

Analysis:

- ▶ During the COVID pandemic, past movement data was used to inform analytical assumptions around the mobility requirements for key workers, which could then be used to baseline local transport needs.

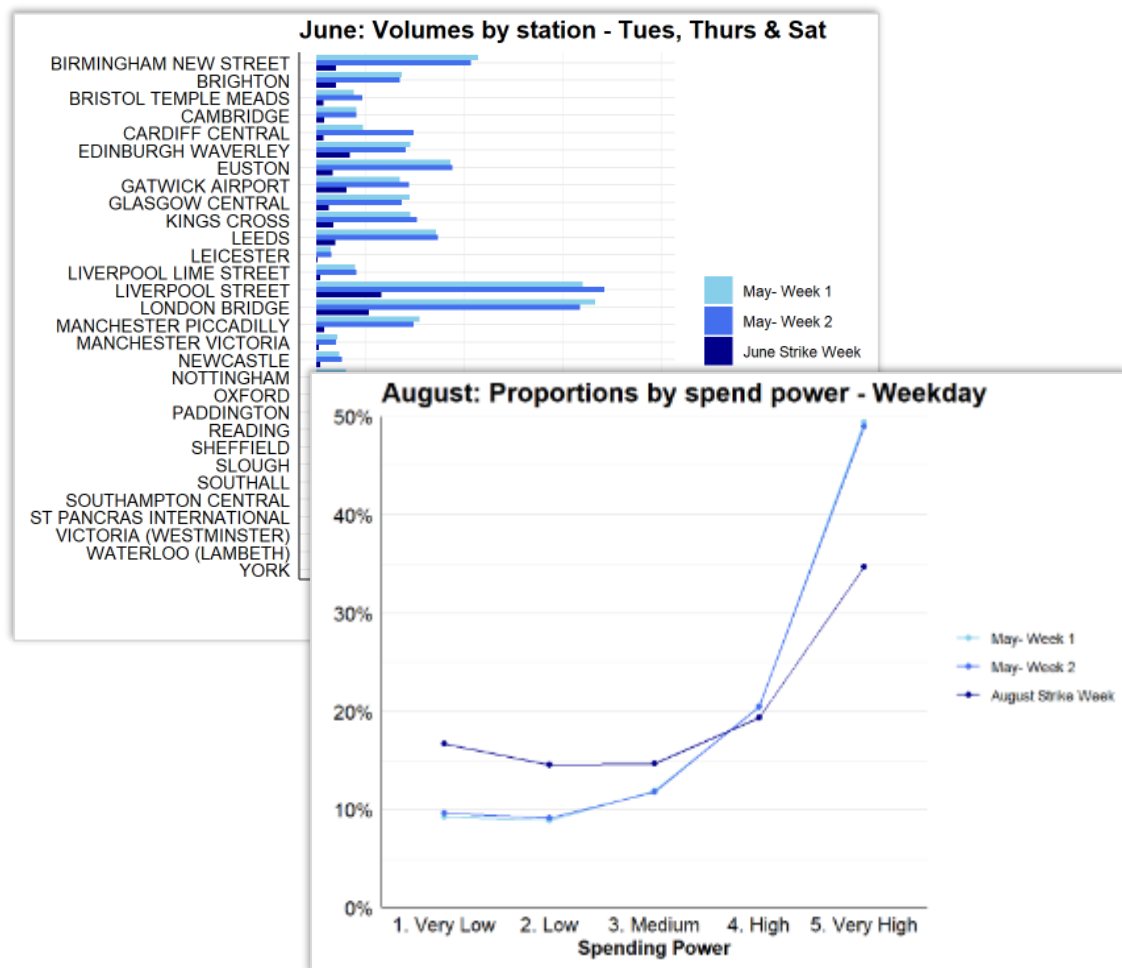
Impact:

- ▶ Better understanding of local transport needs, potential disruptions and a baseline mobility metric formed part of daily reporting.



Use cases for Telecoms data

2. Rail insights and modal splits



Data format:

- ▶ **Station-to-station** rail movement data, segmented by **trip purpose** and **demographics** (e.g. age, gender) can be used to understand modal splits and the impact of external events.

Analysis:

- ▶ After the initial periods of rail industrial action, population movement data was used to understand how these impacted modal splits and whether more people were using roads to make what would otherwise be rail trips.

Impact:

- ▶ Understanding **regional differences** and differences in the effect of the strikes on **different population groups** (e.g. age, gender, socioeconomic status), feeding into work on minimum service levels and rail infrastructure.

Use cases for Telecoms data

3. Near real-time monitoring

Data format:

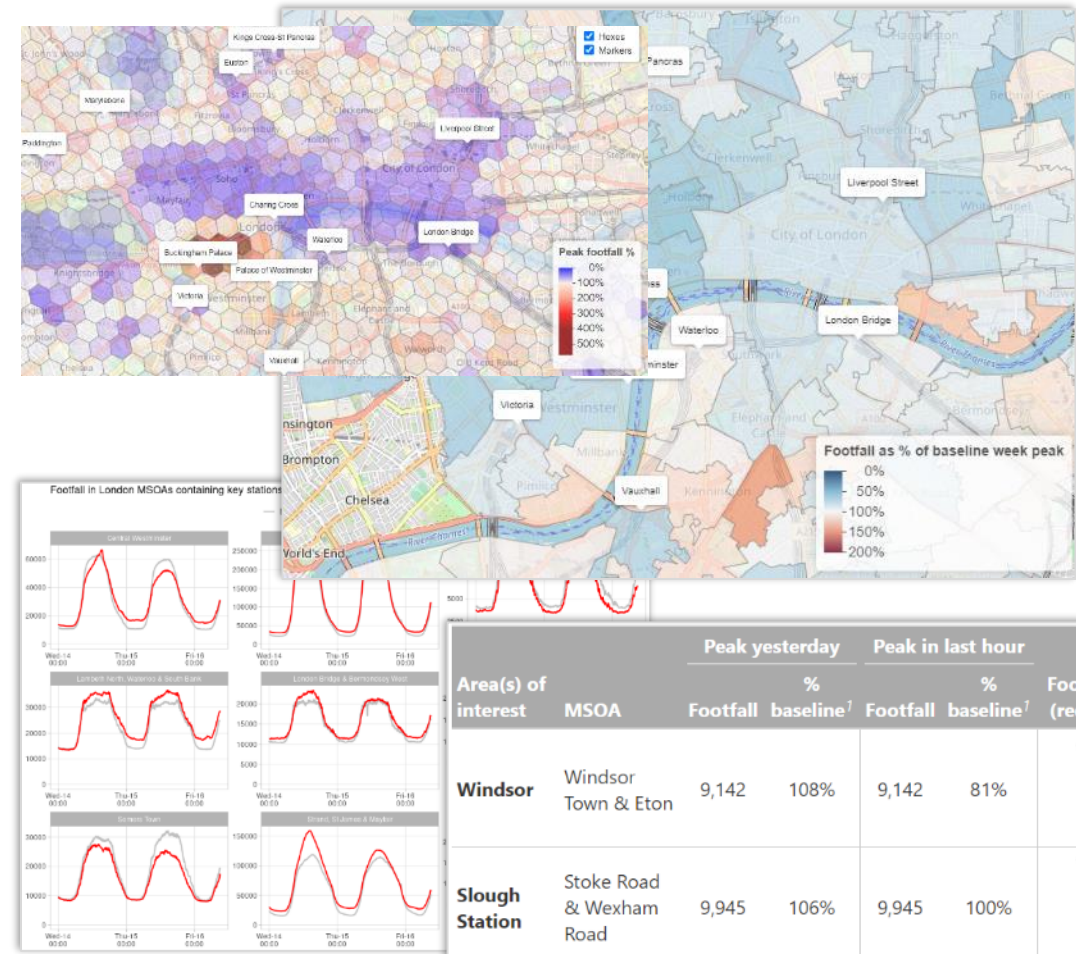
- ▶ **Near real-time** crowd data, at various levels including **200m hexagon**, showing footfall within 5-minute intervals has been used to support crowd monitoring during the Queens funeral and the Kings Coronation.

Analysis:

- ▶ Movement data was processed into **hourly reports** and a dashboard showing **crowd volumes across London and Windsor**, which were used to brief the departmental operations centre

Impact:

- ▶ Accurate and timely briefings to the departmental operations centre helped them, where necessary, alert delivery partners and **manage any potential disruptions** to the transport network



¹ Changes are calculated as a percentage of the maximum footfall volume seen in an equivalent period for the same day of the week in a reference week

Use cases for app-based data

4. Persona-Based Behavioural Analysis for improved policy making

Data format:

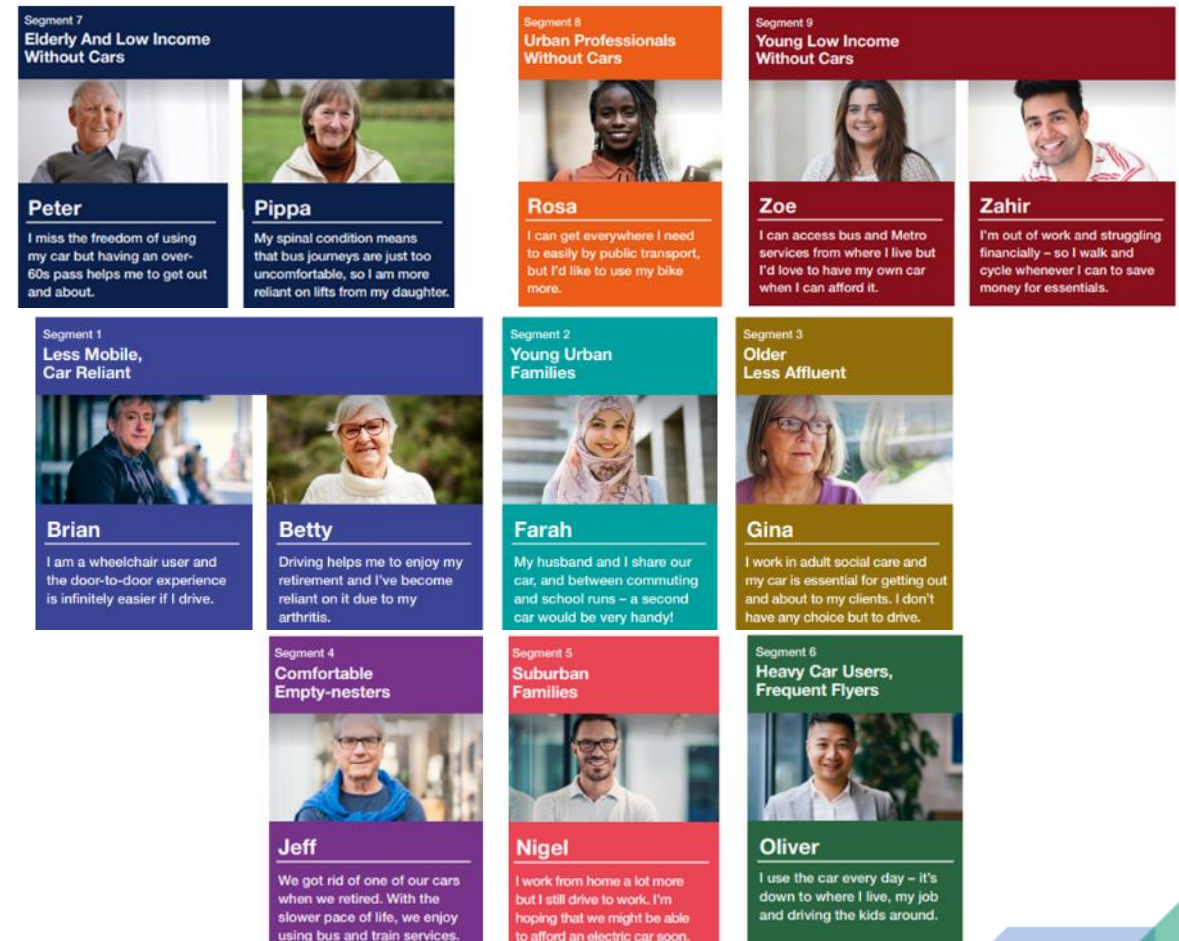
- ▶ **Survey and movement data** to be collected **through a mobile phone app**. The supplier will recruit a nationally representative sample of >3,500 people, allocate them to Transport User Segments and monitor their travel behaviour.

Analysis:

- ▶ The data will provide an understanding of the **distribution of Transport Segments throughout England**, and how their **behaviour changes** over time and following policies or events. A **Proof-of-Concept tool** will be produced to facilitate analysis.

Impact:

- ▶ The behavioural insights will support **better policy design** and **understanding of barriers and opportunities**. Monitoring changes over time will enable **quicker evaluation** and offer **insights to the effects of events**, such as the Energy Crisis.



Lessons, Challenges

- **Data Access, Procurement, Funding**

- In the UK, these are commercial data sets which require significant funding lines. Even across Government, it's difficult to coordinate and share access. Geospatial commission leading on this.
- No standing funding lines within a spending round, difficult to move from traditional surveying

- **Coverage, the what, not the why**

- Captures where people go, not where they want to go. Need to link to other data.
- Coverage can be limited – adults only, coverage dependent on market share
- Short journeys lost / varies due to density of cell towers



A hand is shown holding a smartphone. The phone's screen displays a map with several icons overlaid on it. The icons include a shopping cart, a house, a group of people, a globe, and an airplane. The background is a soft, warm glow. The word "Questions?" is written in large, bold, black letters across the center of the image.

Questions?