Transport for West Midlands

NETWORK RESILIENCE EVOLUTION THROUGH INNOVATION

POLIS 30 November 2020

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Transport for West Midlands, United Kingdom

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1. Strategic context
2. Key traffic challenges facing the West Midlands
3. Network Resilience Live Lab

Meeting the challenge is about understanding transport + technology + our PEOPLE

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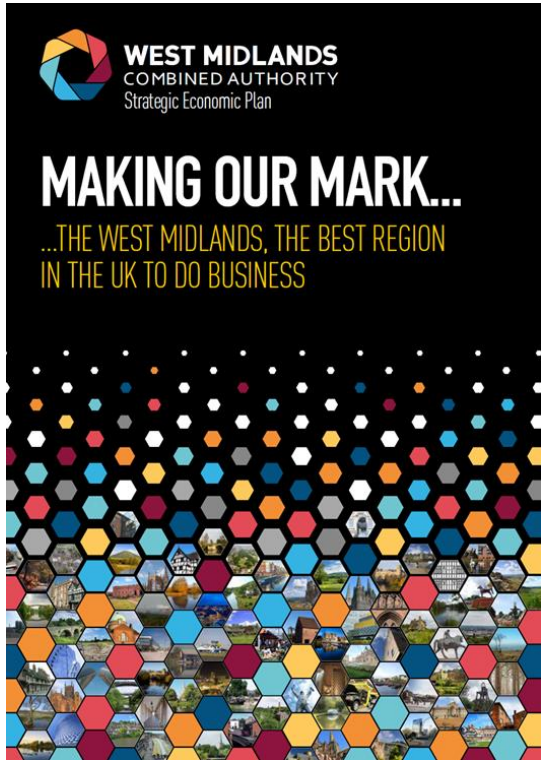
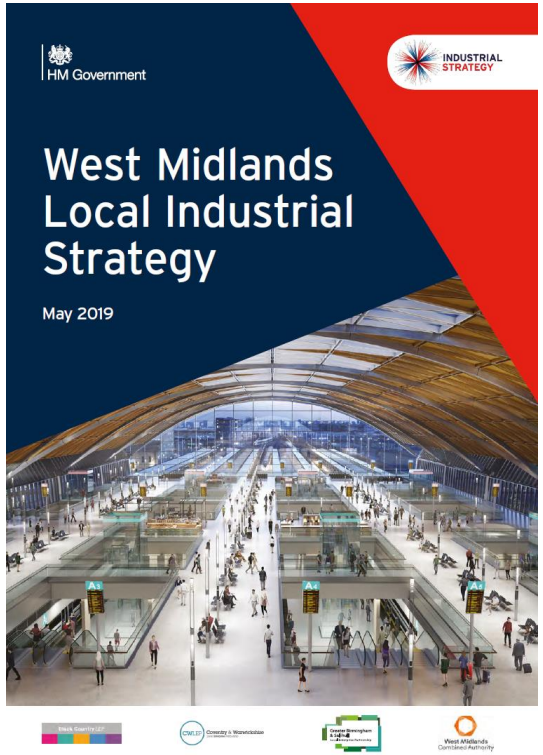
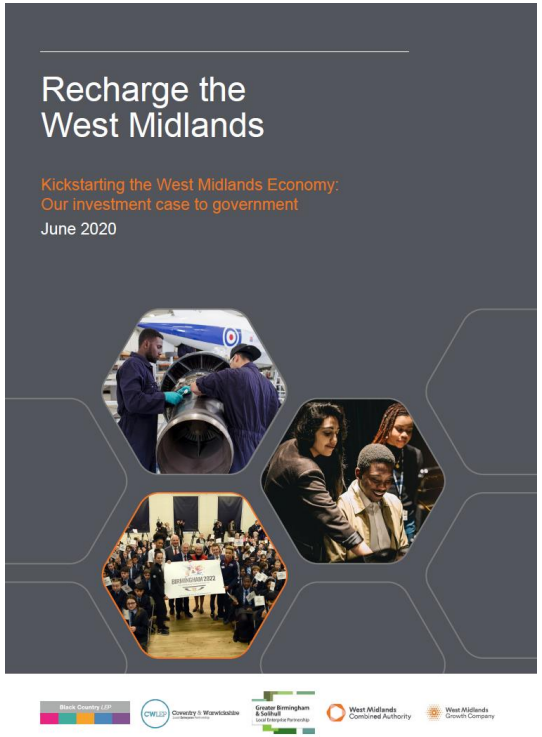
Strategic context in the West Midlands, UK

"Building a healthier, happier, better connected and more prosperous West Midlands"







Record

8.4 billion miles

driven on the region's roads in 2016

- Birmingham
- Coventry
- Dudley
- Sandwell
- Solihull
- Walsall
- Wolverhampton

Public transport use (2016/2017)

Bus (81%)

Rail (17%)

Metro (2%)

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Key Route Network key statistics

50% Of road traffic is carried on

7% Of the road network

17.7mph Average weekday peak speed

Over **800,000** Daily bus trips

A growing region

Between now and 2035, our region will grow every day, by:

100 people

Which is the equivalent of filling an extra...

1.5 buses

or

84 cars

or

0.5 trams

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Regional Transport Coordination Centre (RTCC)

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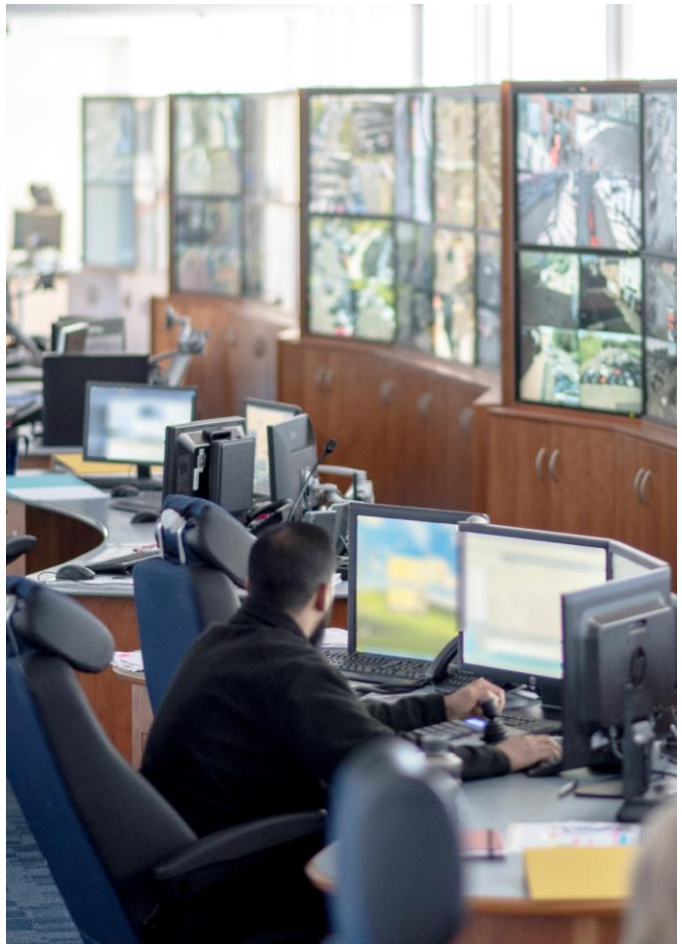
A multi-modal centre for monitoring the transport network and planning for impacts



Regional Transport Coordination Centre

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A revolution in citizen engagement

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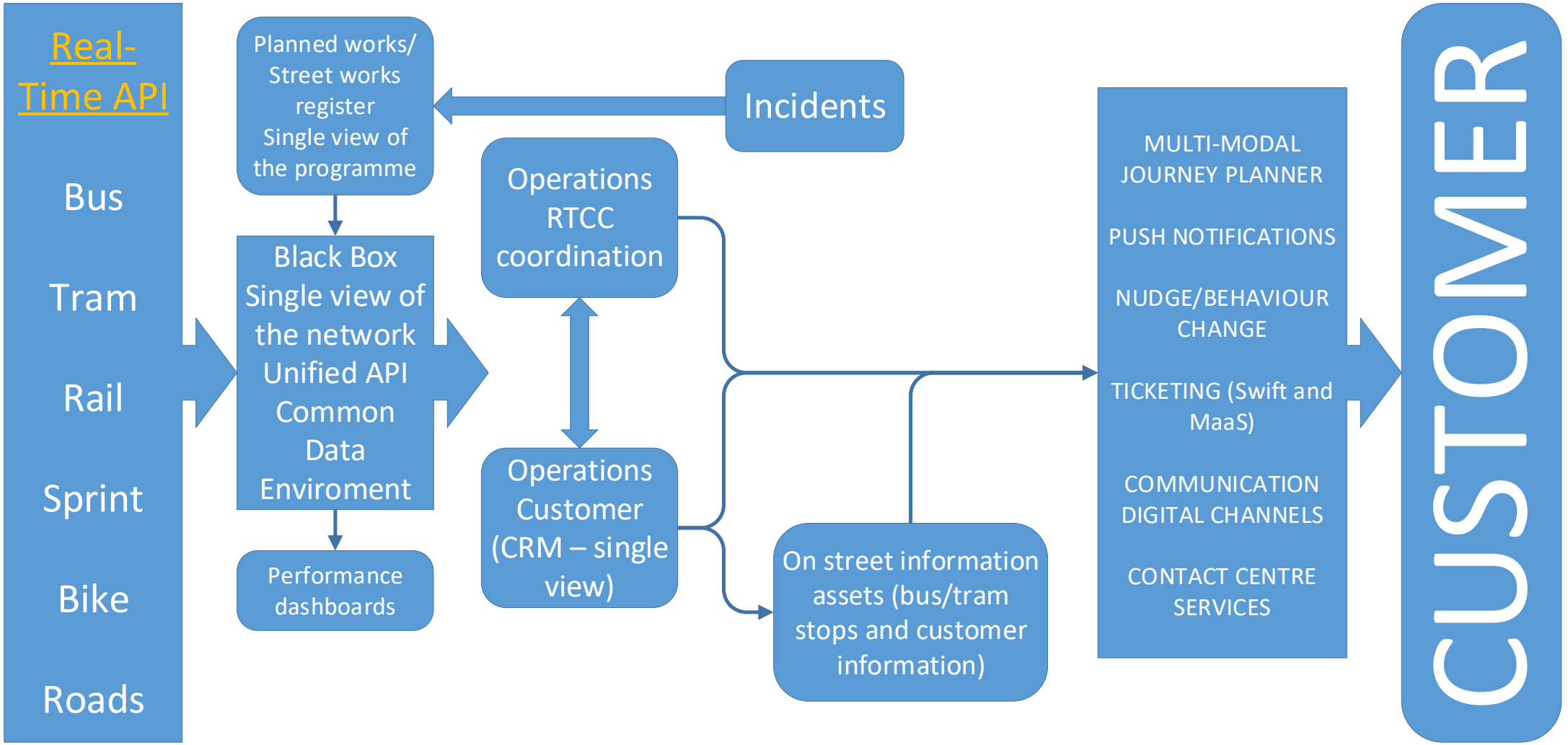

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Communications and engagement strategy

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- Nudge tactics
- More sustainable travel
- Reduced congestion
- Healthier citizens

Create positive change

- Collaboration and partnership
- Technological solutions
- Real time
- Targeted activity

Minimise impacts

- One version of the truth
- Reliable / accurate

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A456

Five Ways Underpass closed until 2021

Stuck in delays today?

Plan ahead for a better journey tomorrow

West Midlands Network

In partnership with Midland Metro Alliance

Plan ahead:
networkwm.com/**FiveWays**

Network Resilience Live Lab May ’19 - Nov ‘21

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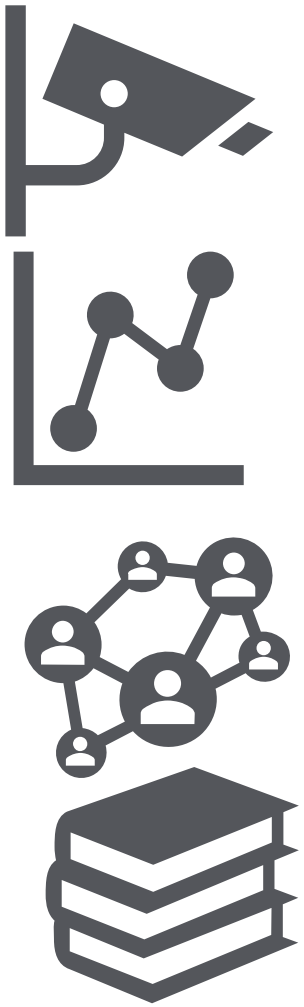

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Data and Testing – video capture

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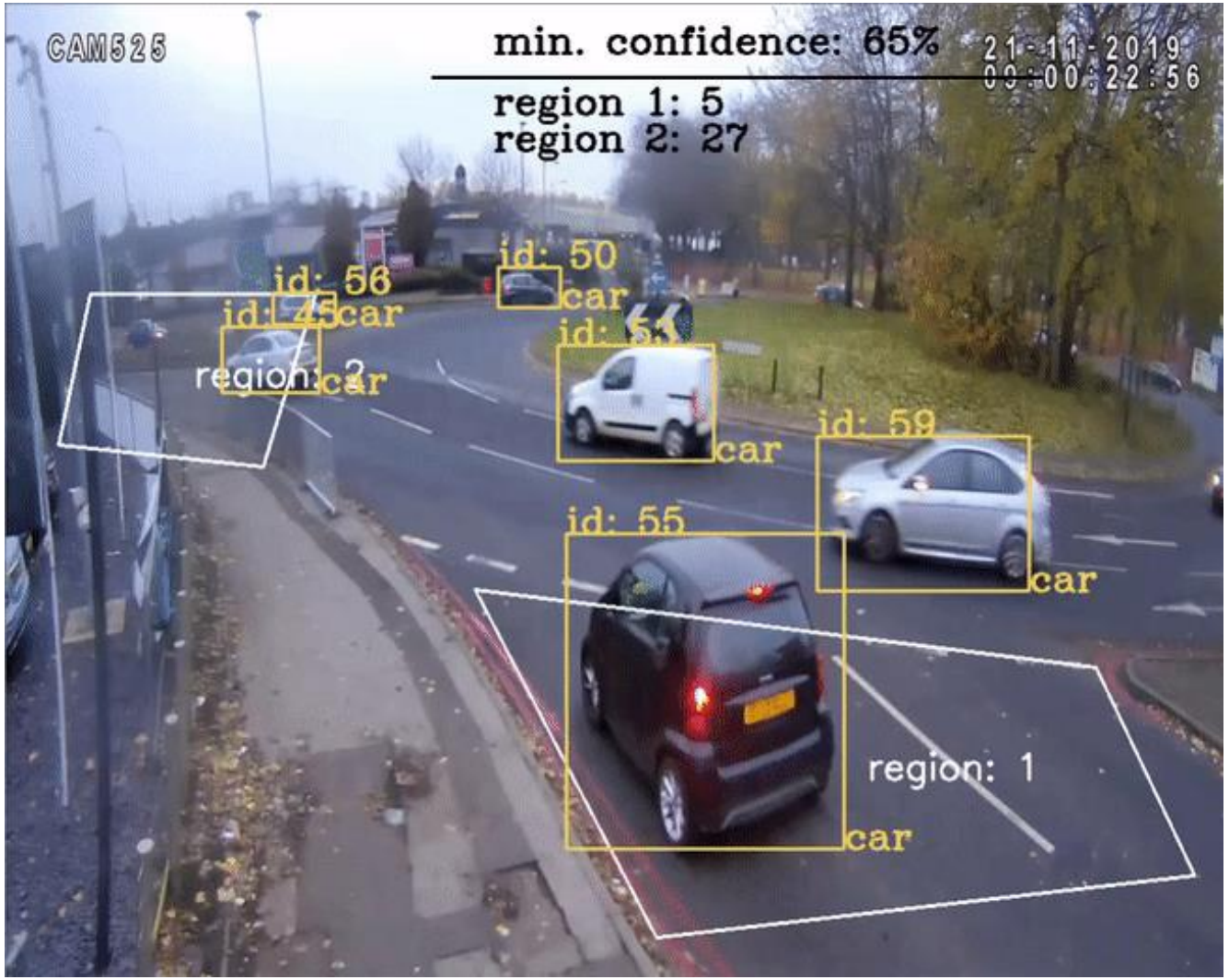

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Data and testing - analytics

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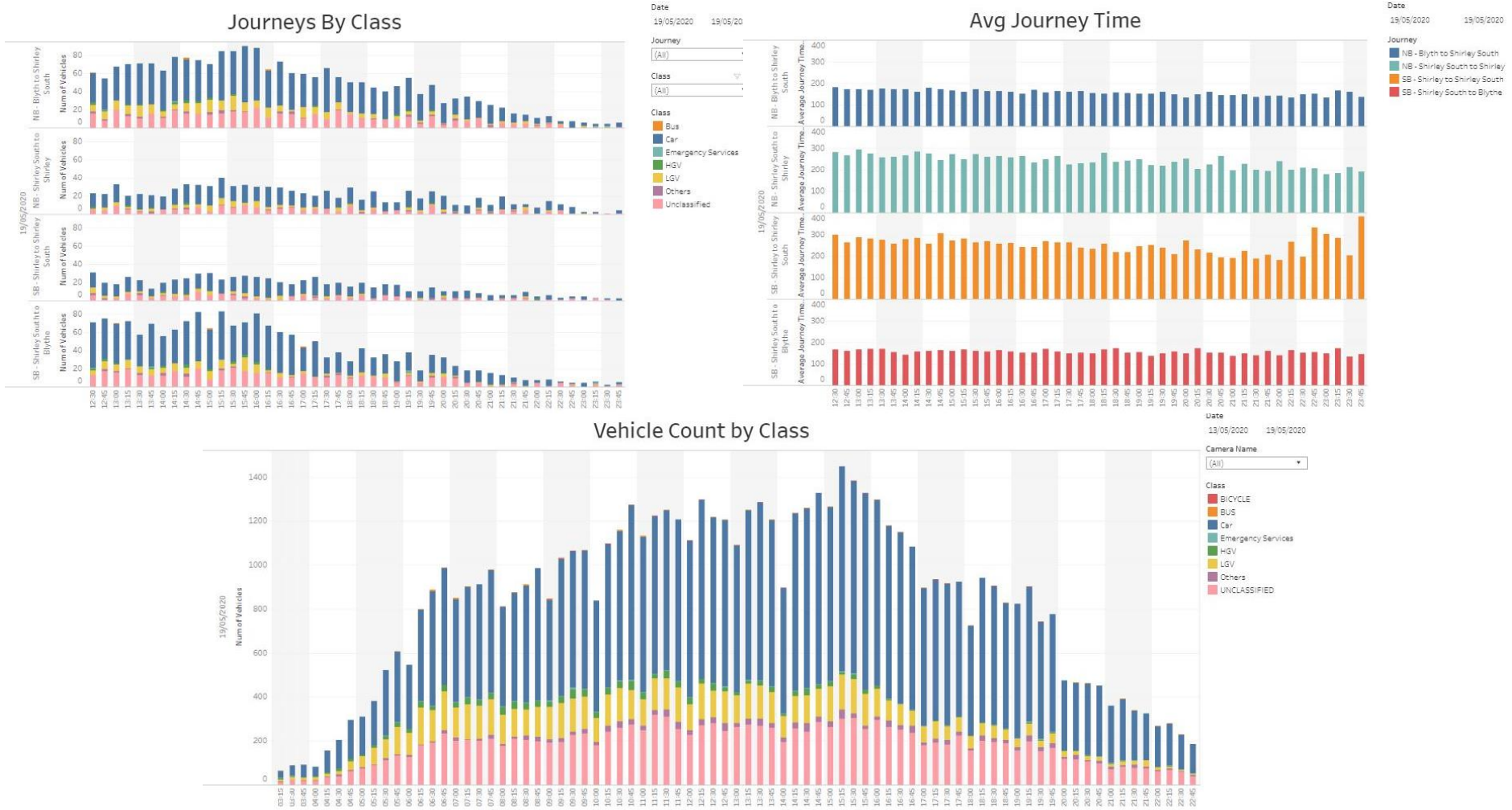

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Travel personas

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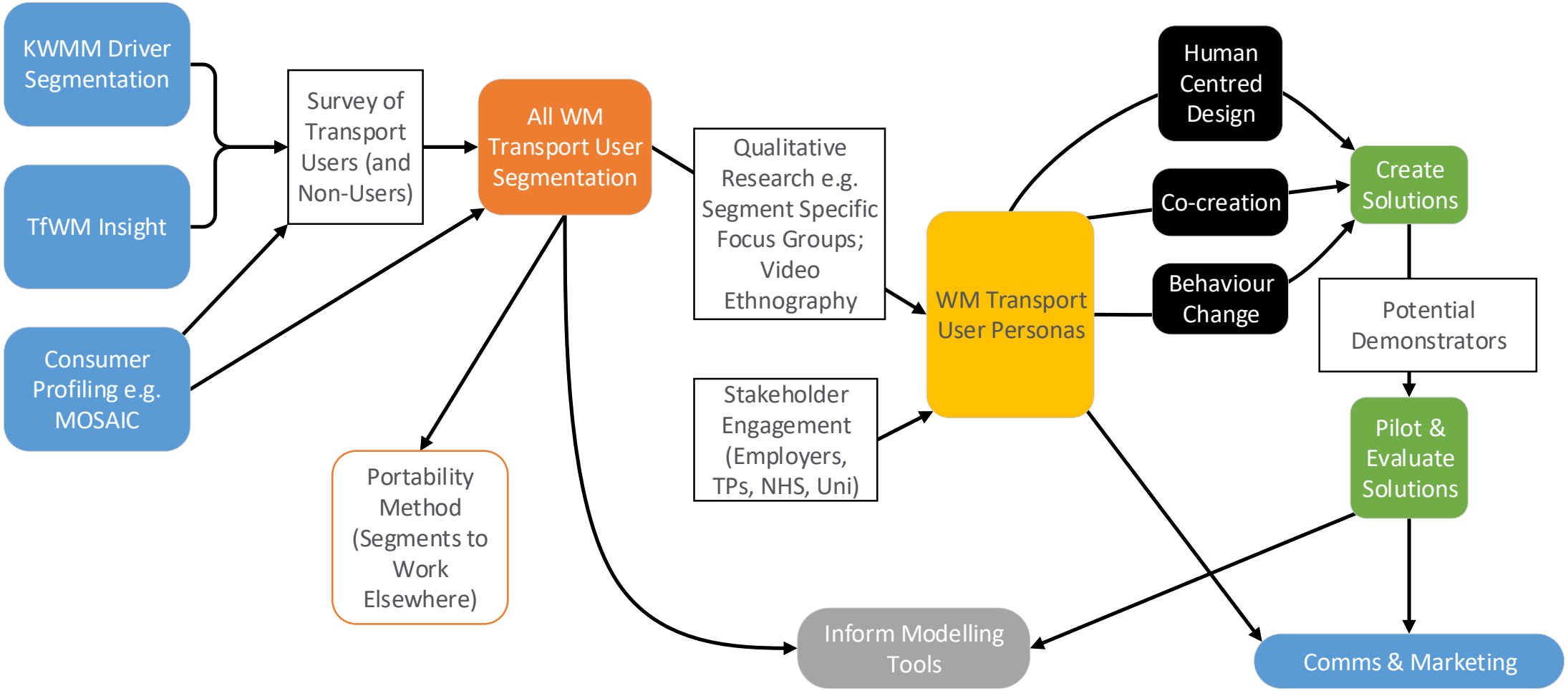

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COVID-19 applications

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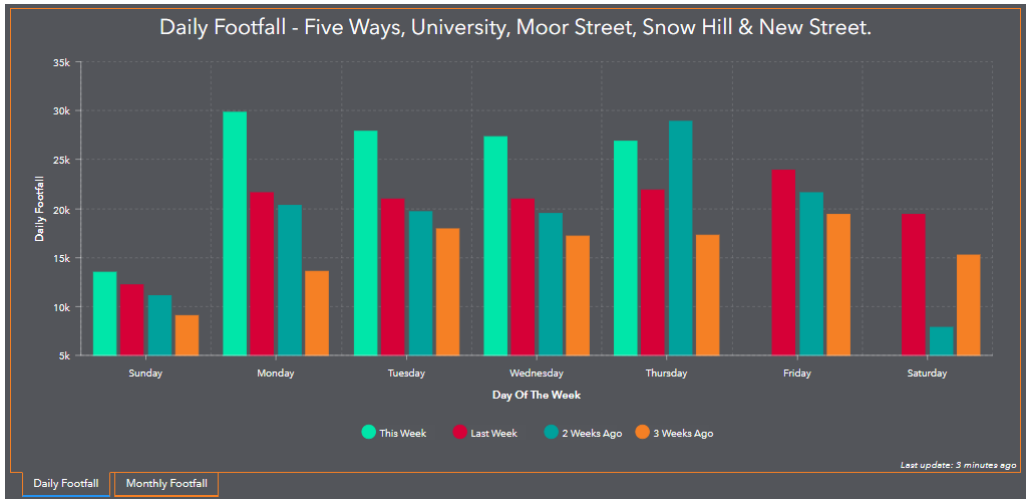

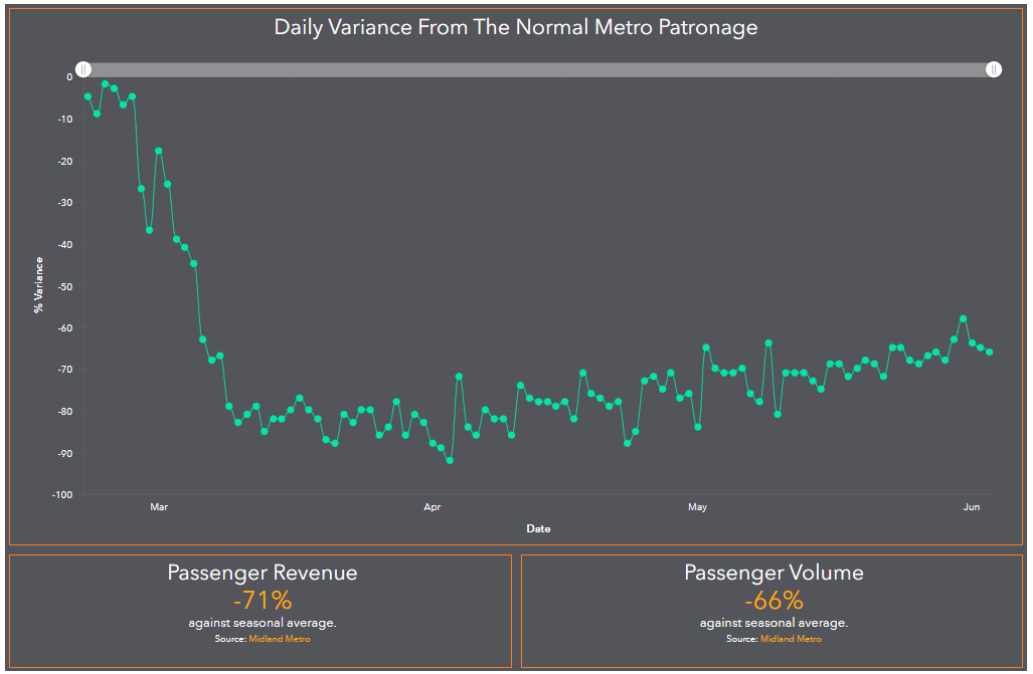

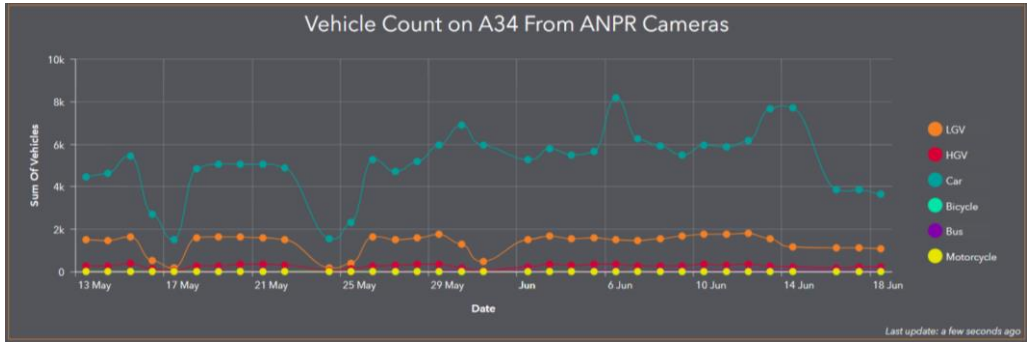

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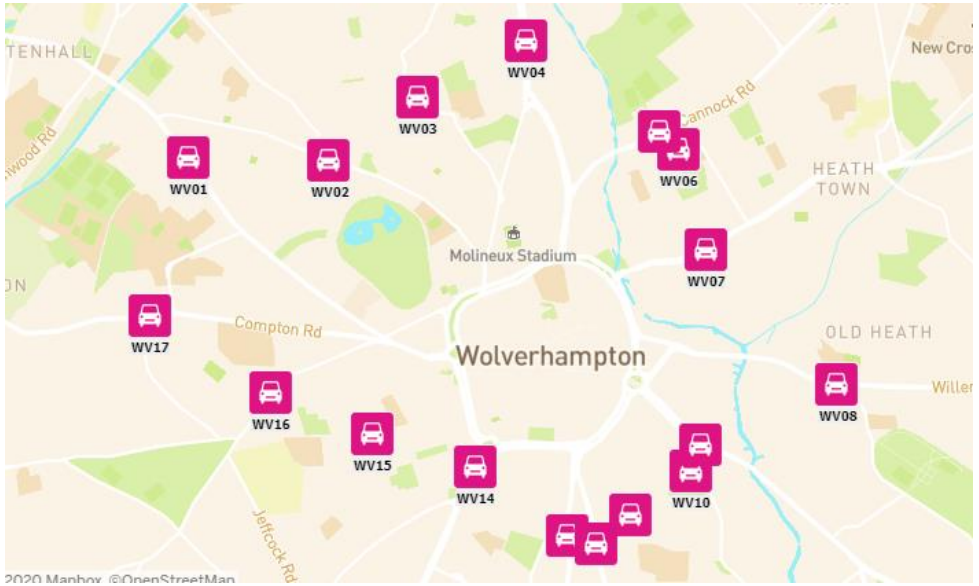
Challenge

- The West Midlands has collected highways data for over 15 years for use in transport planning and modelling.
- However, the outdated technology and cost has resulted in counts being undertaken for 1 week every 2 years.
- Whilst this provides long term trend it no longer meets the needs for 24/7 data.

Opportunity

- April 2018 TfWM first engaged with West Midlands Police.
- West Midlands Police captures Automatic Number Plate Recognition data as part of tracking criminal activity.
- However they cast aside the “normal” activity – the data that is valuable to TfWM and the local authorities/ municipalities.



Wolverhampton cordon count data sites – providing road trends data for over 15 years

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The West Midlands Data Engine

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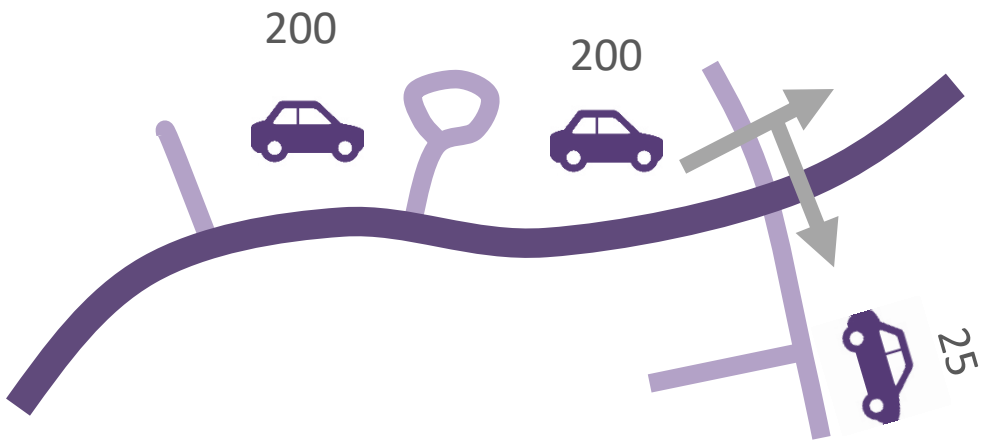
Solutions

Using the West Midlands Police real time data – via QRO



4.5 million data points per day

```
{
 "vrnHash" : "61768db8d1a38f1c16d3e6eea812ef423c739068",
  "dateTime" : "2018-01-27T13:14:15",
  "classification" : 11,
  "locationId" : 1234,
  "locationX" : -3.3380599,
  "locationY" : 52.2747002,
  "xyType" : "WGS84",
  "vehDirection" : "T"
}
```

```
"FieldID":"FieldValue"
```

Which fields are sent can be configured to include any of the following ANPR data:

Data	FieldID	Description	FieldValue
Capture Time	CaptureTime	Plate read capture time	See section 2.5
Make	Make	Vehicle make	See section 2.6
Model	Model	Vehicle model	See section 2.6
Colour	Colour	Vehicle colour	See section 2.6
Class	Class	Vehicle classification	See section 2.7
Engine Type	EngineType	Vehicle engine type	See section 2.8

Amazon Web Services realtime data

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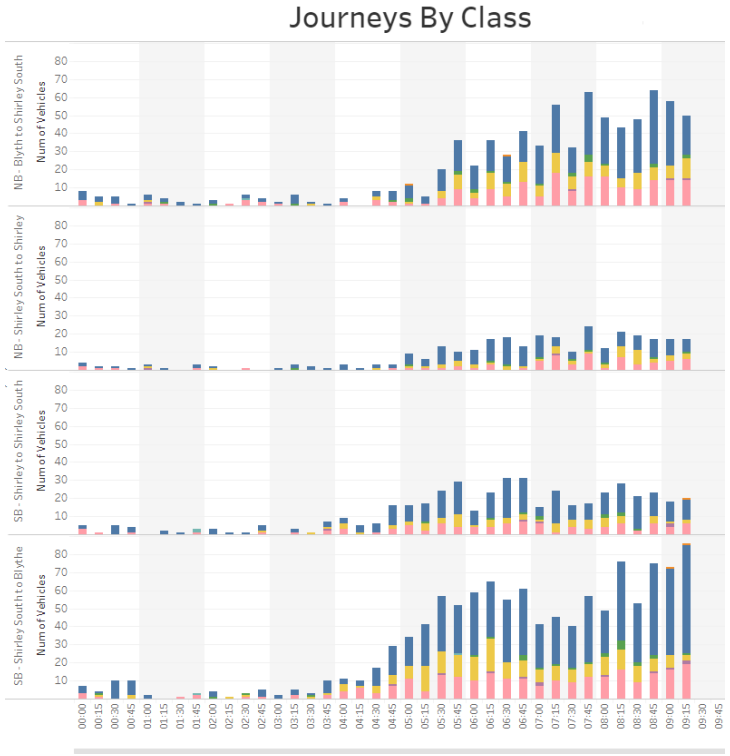
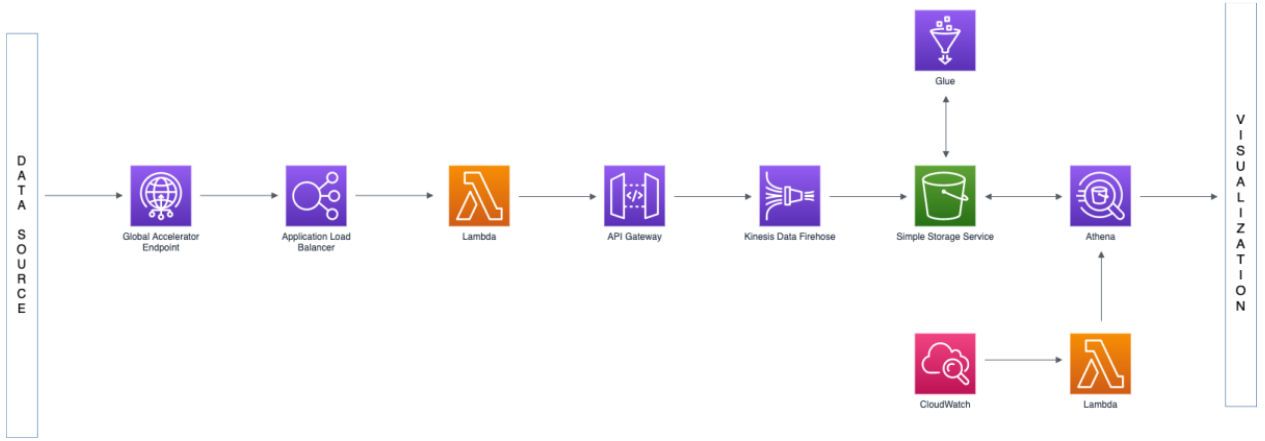
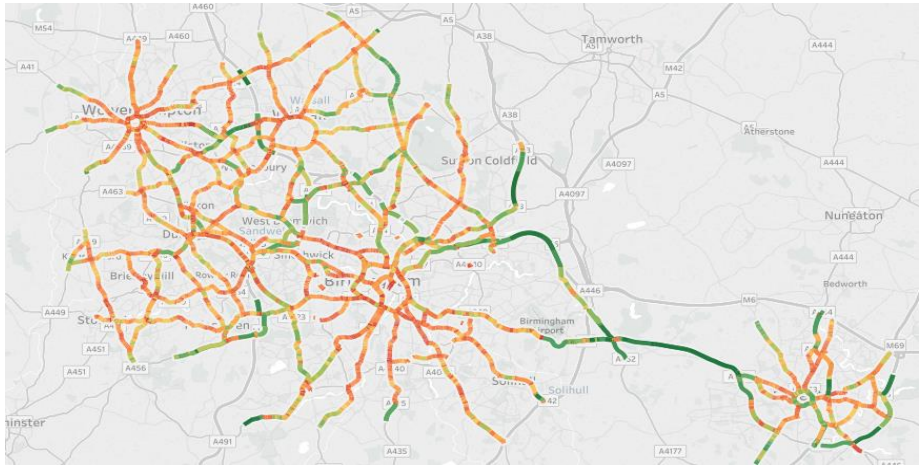
By gathering 24/7 data on the Key Route Network, in real time, it will be possible to have a near real time view on the main roads of the West Midlands and provide the data volume to deep learn standard travel patterns and therefore support more accurate traffic modelling.







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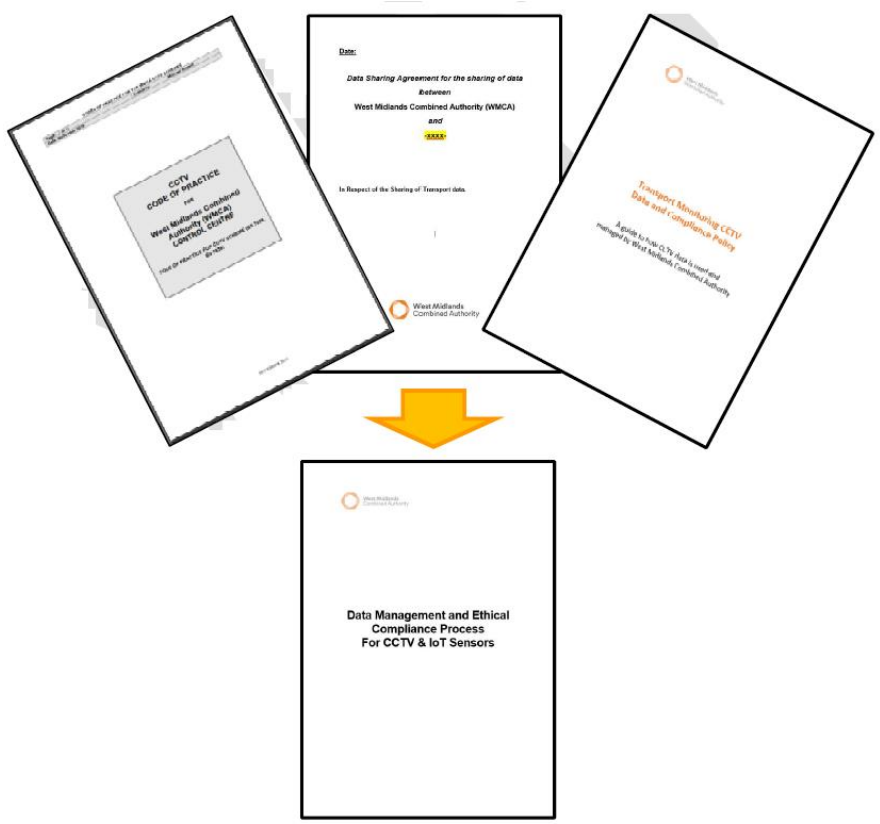
The benefits

- West Midlands Police funded to deploy more ANPR cameras.
- TfWM receive higher volumes of data for much lower cost.
- TfWM utilise the Police framework for camera deployment.
- Public sector co-operation.

Privacy, ethics and GDPR

In the project, we have produced:

- A memorandum of understanding between TfWM and West Midlands Police that includes privacy, data sharing and a service level agreement.
- A CCTV Data and Compliance policy.
- IoT Data Management and Ethical Compliance Process.
- Undertaking governance on the transport side.
- Introducing online workflow management of data sharing: https://www.informationsharinggateway.org.uk/



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THANK YOU

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NETWORK RESILIENCE LIVE LAB WWW.TFWM.ORG.UK/LIVELAB

RTCC VIDEO HTTPS://WWW.YOUTUBE.COM/WATCH?V=QEMFZHEIVI4

CONGESTION MANAGEMENT PLAN
HTTPS://WWW.TFWM.ORG.UK/MEDIA/2917/CONGESTION-MANAGEMENT-PLAN

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