WEBINAR WILL BEGIN AT 14:00

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NEW WAYS OF ACCESSING ROAD SAFETY DATA

RICHARD OWEN & BRUCE WALTON

WEBINAR SUPPORT

- Please use the chat function to discuss topics raised as we go along
- If you have a question, start your comment with QUESTION to make it clear to the presenter
- This is being recorded and will be available to review shortly
- The PDF slides are also available

NEW WAYS OF ACCESSING ROAD SAFETY DATA

Democratising data

Collecting data

Pre-analysed results

Analysis ecosystems

Sometimes you do need a geek

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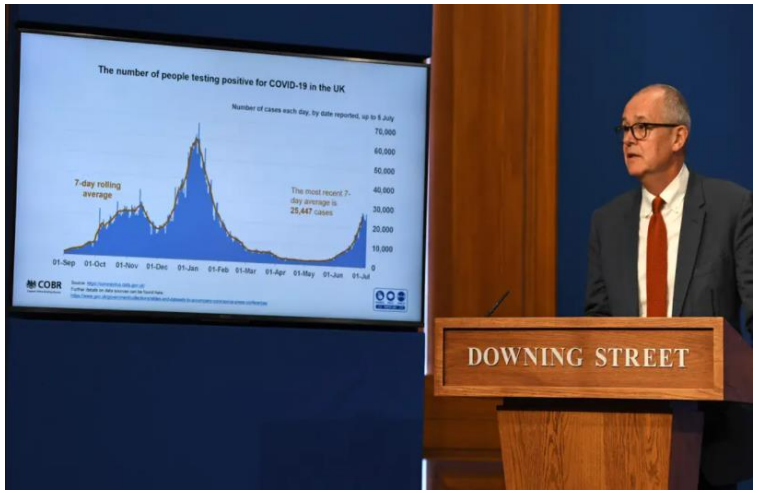
DEMOCRATISING DATA

The value of data, its collection and the sharing of that data has never been more important and more well-understood.



“Publicly funded data should be publicly available”

UK Data Service

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DEMOCRATISING DATA

- The UK has been at the forefront of sharing data over the last decade
- Freedom of Information Act
- Easier to publish than process requests

Documents

DfT's spending over £25,000 for July 2021

View online **Download CSV** 736KB

This file may not be suitable for users of assistive technology.

▶ Request an accessible format.

DEMOCRATISING DATA

data.gov.uk | Find open data

highways england Highways England Open Data

LONDON DATASTORE

Birmingham DATAFACTORY

Ordnance Survey

Office for National Statistics

UK Data Service

OpenData

Open Geography Portal

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DEMOCRATISING DATA

- Machine readable

Statistical Release 30 September 2020

Department for Transport

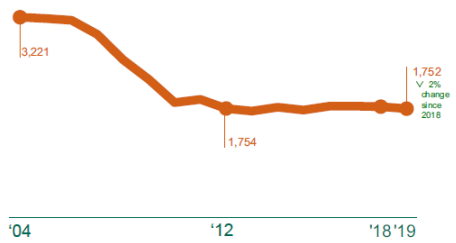
Reported road casualties in Great Britain: 2019 annual report

There were 1,752 reported road deaths in 2019, similar to the level seen since 2012, which follows a period of substantial reduction in fatalities from 2006 to 2010.

About this release

This release gives an overview and commentary of reported road casualties in 2019. It provides the number of personal injury road traffic accidents in Great Britain that were reported by the police in 2019 using the STATS19 reporting system. It also includes the number of people killed or injured in these accidents and which road user group they were in. This is the final release of headline accident and casualty figures for 2019 and an update of provisional results published in July 2020.

Chart 1: Fatalities in reported road accidents: GB, 2004-2019



Department for Transport statistics

Reported Road Casualties Great Britain Annual Report 2020

RAS50005

Vehicles in reported accidents by contributory factor and vehicle type, Great Britain, 2019

Contributory factor attributed to vehicle[1,3]	Pedal cycle Number	Pedal cycle Per cent[2]	Motorcycle Number	Motorcycle Per cent[2]	Car Number	Car Per cent[2]	Bus or Coach Number	Bus or Coach Per cent[2]
Road environment contributed	**345**	***4***	**1,515**	***11***	**6,923**	***6***	**100**	***4***
Poor or defective road surface	59	*1*	128	*1*	281	*0*	6	*0*
Deposit on road (eg. oil, mud, chippings)	31	*0*	271	*2*	515	*0*	2	*0*
Slippery road (due to weather)	180	*2*	905	*7*	4,314	*4*	31	*1*
Inadequate or masked signs or road markings	6	*0*	16	*0*	313	*0*	4	*0*
Defective traffic signals	3	*0*	3	*0*	131	*0*	4	*0*
Traffic calming (eg. road humps, chicane)	6	*0*	25	*0*	51	*0*	7	*0*
Temporary road layout (eg. contraflow)	3	*0*	21	*0*	125	*0*	6	*0*
Road layout (eg. bend, hill, narrow road)	67	*1*	184	*1*	1,453	*1*	35	*1*
Animal or object in carriageway	14	*0*	100	*1*	518	*0*	8	*0*
Slippery inspection cover or road marking	2	*0*	14	*0*	4	*0*	1	*0*

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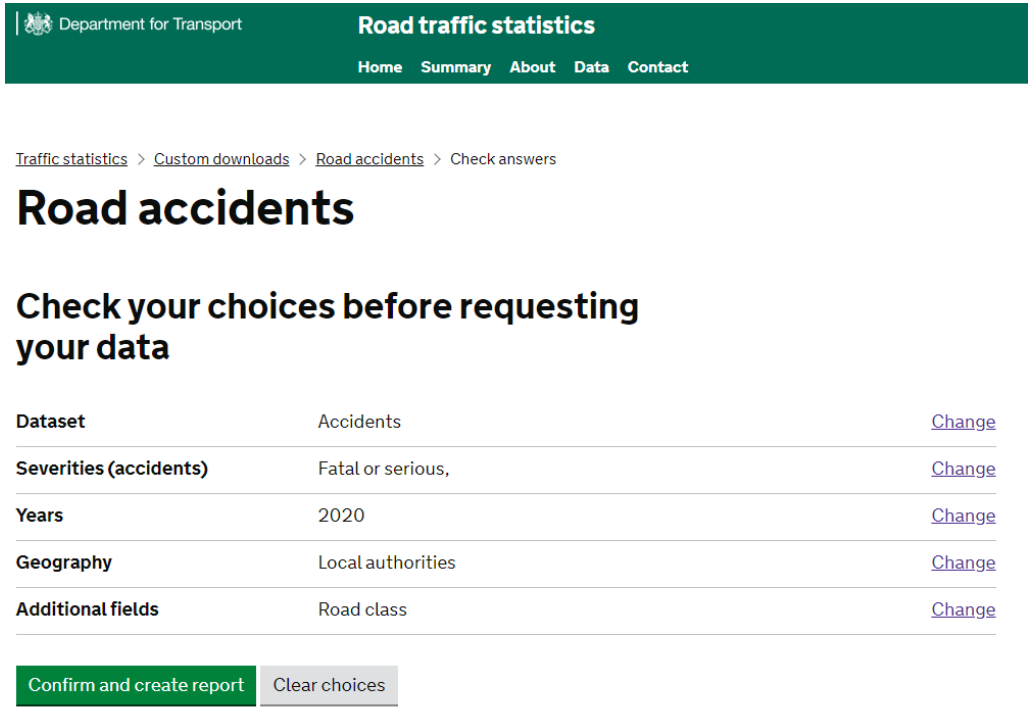
- Machine readable



Accident year	Local authority	Ons code	Road class	Fatal or serious
2020	Leicester	E06000016	A	29
2020	Leicester	E06000016	B	5
2020	Leicester	E06000016	C	11
2020	Leicester	E06000016	Unclassified	34

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- Machine readable

accident_index	accident_year	accident_reference	vehicle_reference	casualty_reference	casualty_class	sex_of_casualty	age_of_casualty	age_band_of_casualty
2020010219808	2020	10219808	1	1	3	1	31	6
2020010220496	2020	10220496	1	1	3	2	2	1
2020010220496	2020	10220496	1	2	3	2	4	1
2020010228005	2020	10228005	1	1	3	1	23	5
2020010228006	2020	10228006	1	1	3	1	47	8
2020010228011	2020	10228011	1	1	3	2	32	6
2020010228011	2020	10228011	1	2	3	2	33	6
2020010228012	2020	10228012	1	1	1	1	25	5
2020010228014	2020	10228014	1	1	1	1	41	7
2020010228017	2020	10228017	1	1	3	1	50	8
2020010228018	2020	10228018	1	1	1	1	62	9
2020010228020	2020	10228020	1	1	1	1	37	7
2020010228022	2020	10228022	1	1	1	1	-1	-1

DEMOCRATISING DATA

- API

GOV.UK DVLA API Developer Portal

getVehicleDetailsByRegistrationNumber

```
curl -X POST -d '{
"registrationNumber": "string" }'
https://driver-vehicle-
licensing.api.gov.uk/vehicle-
enquiry/v1/vehicles \ -H 'Content-
Type: application/json' -H 'Accept:
application/json' -H 'x-api-key: string'
-H 'X-Correlation-Id: string'
```


{ "registrationNumber": "WN67DSO", "taxStatus": "Untaxed", "taxDueDate": "2017-12-25", "artEndDate": "2007-12-25", "motStatus": "No details held by DVLA", "motExpiryDate": "2008-12-25", "make": "ROVER", "monthOfFirstDvlaRegistration": "2011-11", "monthOfFirstRegistration": "2012-12", "yearOfManufacture": 2004, "engineCapacity": 1796, "co2Emissions": 0, "fuelType": "PETROL", "markedForExport": true, "colour": "Blue", "typeApproval": "N1", "wheelplan": "NON STANDARD", "revenueWeight": 1640, "realDrivingEmissions": "1", "dateOfLastV5CIssued": "2016-12-25", "euroStatus": "Euro 5" }

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DEMOCRATISING DATA

- STATS19
- Traffic Counts
- Road Networks
- Area-data
  - Census
  - Population estimates
  - IMD
- NH flow and speed
- SpaceSyntax
- Defra
  - AQ
  - Noise
- Crowdsourced e.g. OSM

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DEMOCRATISING DATA

esri ArcGIS Marketplace

Waze Live Alerts Layer
By Waze
Data

TravelTime ArcGIS Pro Add-In
By TravelTime Technologies Ltd
ArcGIS Pro Add-in

Pedestrian Frequency Atlas - United Kingdom
By Nexiga GmbH
Data

Wejo - Traffic Intelligence
By Wejo Data Services Inc
Data

RoadIQ Conditions
By Moove.ai
Data

Riskmap route risk analysis for the GB road network
By RSA / Agilysis
Data

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COLLECTING DATA

Safety4Traffic, The Original Elk Warning, Sweden

Safety4Traffic Oy

Traffic Analytics Data

Sensagrate

BMW Safety Relevant Traffic Information Creative Commons BY-NC-SA-4.0

BMW

NexTraq Data Services

Nextraq (formerly Discrete Wireless)

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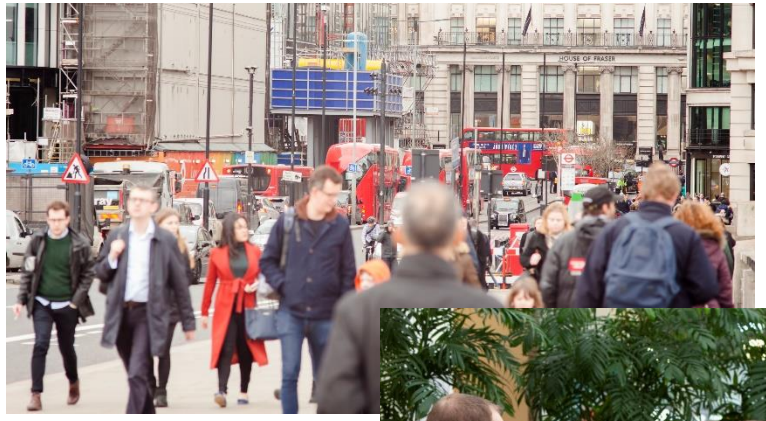
WHAT DATA WOULD YOU LIKE TO ACCESS MOST?

POLL

DATA APART FROM STATS19

- Network in use
  - People, behaviours and outcomes
- Demographics
  - Populations and their road usage
- Observation
  - Real time data collection
  - Simulation and opinion



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DATA LIMITATIONS

Not all data comes from the same place

Data sources are not always compatible

All data is only as good as its source

It is not always fit for purpose

NETWORK IN USE

Source:
Enforcement activity
Data gathering on the road

Understand actions and consequences before the worst happens

Challenging to relate to collision history: requires secure location data

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LOCATION, LOCATION, LOCATION!

Name:

Boundary Road os No118

Parish:

Newbury

V4 Site:

A4 London Road, Newbury

Speed:

30mph

RI… Assessment:

No RA uploaded

Status:

Established

Expiry date:

June 29, 2021

Easting:

447859

Northing:

166562

Upload new Risk Assessment:

10.6 KB

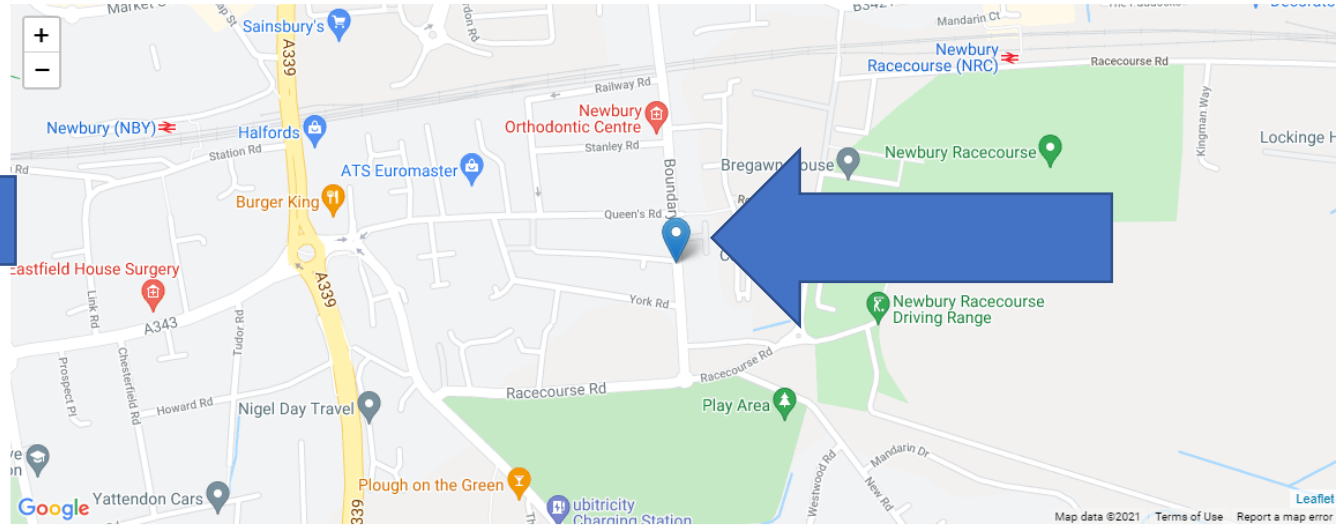
sample.pdf

Click to select file

Description:

66

Map:



Remove / Upload new image:

Click to select files

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DATA TYPES TO CONSIDER

- Inventories
  - Road characteristics, surface condition, street furniture
  - Supported by surveys (manual, vehicle or satellite)
- Traffic counts
  - Permanent, temporary or manual
- Speed management activity
  - Police enforcement
  - Community engagement, such as CSW and SID deployment
- CCTV and traffic cameras
  - Evidence of road use patterns and near miss events
- Maintenance inspections
  - Evidence of otherwise unrecorded damage only crashes

ENFORCEMENT DATA

Source: Thames Valley Police

Source: Agilysis

Event Date	Start Time	Duration	Operator	Detections
11/02/2018	12:44	2.00	PF	40
21/01/2018	08:10	2.00	AG	19
14/01/2018	08:15	2.00	LG	21
24/12/2017	08:50	1.00	BP	13
30/11/2017	07:40	2.00	TH	2
31/10/2017	06:50	2.00	TH	11
03/09/2017	12:40	2.00	BP	38
18/08/2017	06:45	2.00	TH	19
02/08/2017	10:40	2.25	CD	28
30/07/2017	08:10	2.00	LG	11
25/07/2017	09:40	2.25	CD	35
31/05/2017	07:50	2.25	CD	20
23/05/2017	06:35	1.25	TH	11

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TRAFFIC DATA

Scottish Borders COUNCIL Traffic Speed and Volume Dashboard

Average Speed | Combined

Average Speed ✓
85th %ile Speed

30

Time	Survey 1
08:00-09:00	20.8
15:00-16:00	24.2
06:00-22:00	28.1
06:00-24:00	28.1
07:00-19:00	27.7
All Day	28.2

Difference between Survey 2 and Survey 1 baseline

Time	Diff	%Diff	
08:00-09:00	-1.9	-9.1	↓
15:00-16:00	-4.1	-16.9	↓
06:00-22:00	-5.7	-20.3	↓
06:00-24:00	-5.7	-20.3	↓
07:00-19:00	-5.6	-20.2	↓
All Day	-5.7	-20.2	↓

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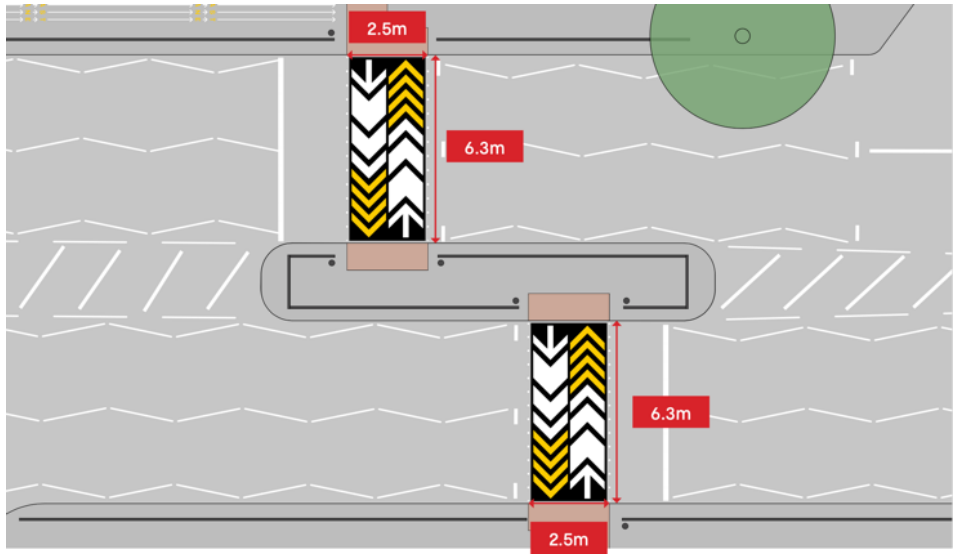
OBSERVED BEHAVIOUR DATA



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NATIONAL DATA SOURCES

- Overall network, traffic and fleet statistics
  - National count point data
- Demographic data
  - Population by age, gender and area
  - Qualitative demographics, for example:
    - Deprivation
    - Rurality
- Driver and vehicle licensing data

PRE-ANALYSED RESULTS

- Wouldn’t it be easier if all of the hard work was already done for you?
  - Members of the Public
  - Stakeholders
  - Politicians
  - Managers
  - Non-technical road safety experts

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Report purpose

These reports visualise the number of personal injury road traffic casualties in Great Britain that were reported by the police between 2017 and 2019 using the STATS19 reporting system. Using these reports, users can easily interact with and filter the data based on key fields such as severity, location, year and mode. When selecting these filters the data in the visuals will update to reflect the selected criteria.

About the data

Data coverage

There is no obligation for people to report all personal injury accidents to the police. These figures, therefore, do not represent the full range of all accidents or casualties in Great Britain. All accidents that were reported by the police and that occurred on a public highway involving at least one motor vehicle, horse rider or pedal cyclist, and where at least one person was injured are included in these statistics.
Further information about the data collected, notes, definitions and guidance is available in the background notes and more detailed guidance.

Severity adjustment

From 2016 onwards, figures on the severity of injury have been affected by a large number of police forces changing their reporting systems. In previous years, serious injuries may have been classified as slight injuries which impacts the comparability of these figures over time.
The **figures in these reports are based on adjusting figures** reported by the police to take account of changes in the reporting of injury severity by some police forces in recent years. These adjusted figures can reliably be used to compare trends over time across the country. They are based on what we estimate the totals would be if all police forces were using injury-based severity reporting systems. More details on severity adjustments and changes in reporting systems can be found in the severity adjustments section in our 2019 annual report and we welcome user feedback on them.
Figures as reported by the police (before adjustment) are presented alongside adjusted figures in the published tables

Data definition

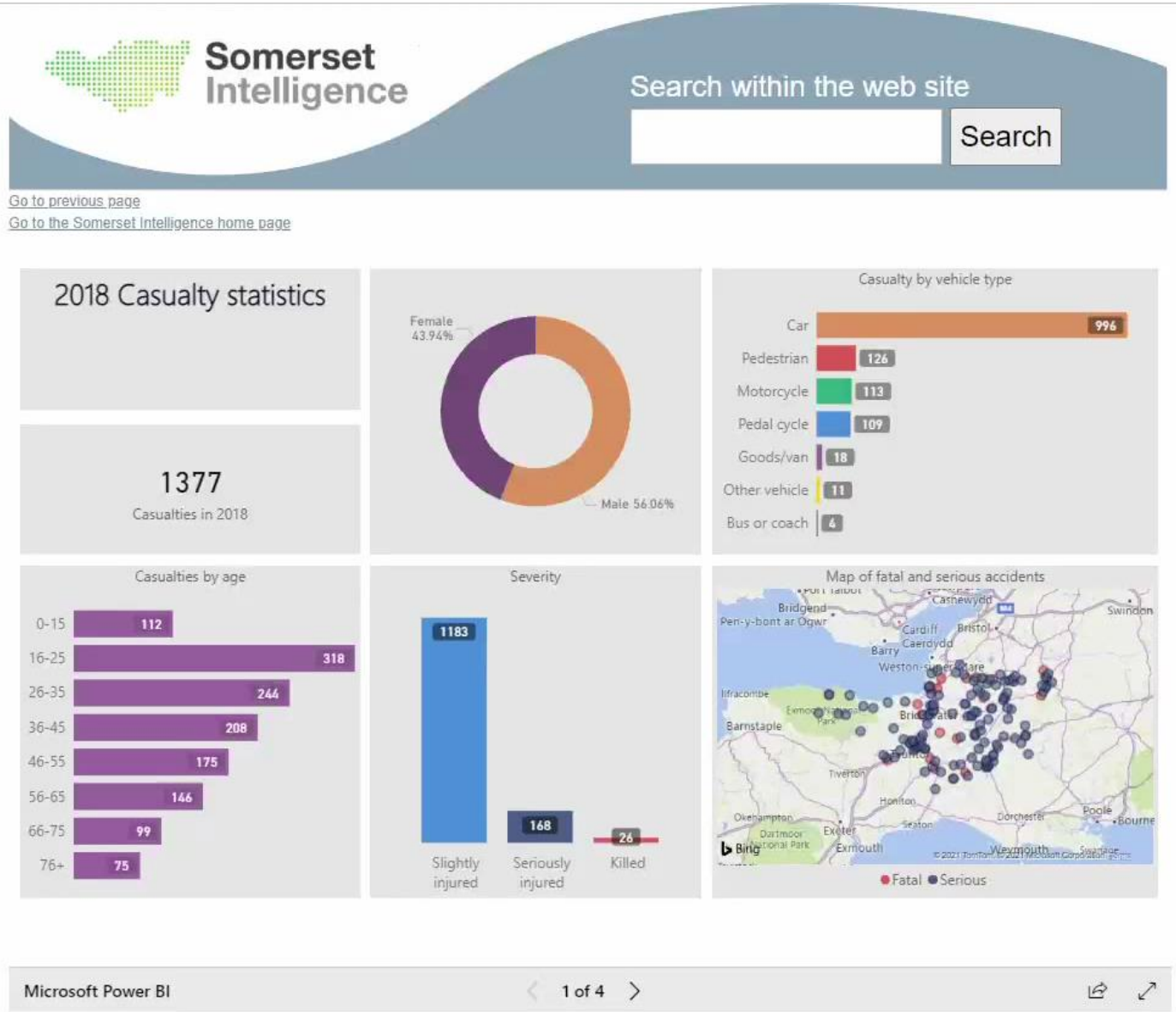
Accident: Involves personal injury occurring on the public highway (including footways) in which at least one road vehicle or a vehicle in collision with a pedestrian is involved and which becomes known to the police within 30 days of its occurrence. Damage-only accidents, with no human casualties or accidents on private roads or car parks are not included.

Casualty: A person killed or injured in an accident. Casualties are sub-divided into killed,seriously injured and slightly injured .

Killed: Human casualties who sustained injuries which caused death less than 30 days after the accident. Confirmed suicides are excluded.

Serious and slight: For police forces using an injury-based severity reporting system (IBRS) where the officer records the most severe injury for the casualty, the injuries are automatically converted to a severity level from 'slight' to 'serious'. A list of the injuries and severity allocated to them can be found on page 38 of the 2019 annual report. Police forces which are on non-injury based reporting system have their seveties adjusted as if they were on an (IBRS) using an adjustment model

https://maps.dft.gov.uk/road-casualties/index.html



More insight and analysis on the Road Safety page

Source: DfT Road Safety Data 2009-2018

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roadsafetyanalysis

Greater Manchester Police Pedal Cyclist Casualty Dashboard

Summary | What | Where | When | How | Who | Data Quality

HEADLINERS
powered by MAST

This dashboard was compiled by Road Safety Analysis to provide insight into the behaviours and collision involvement of pedal cyclist casualties in and from Greater Manchester Police. STATS19 collision data was analysed from 2015 to 2019, with additional trend analysis going back to 2010.

For a more complete analysis, including
- a more thorough analysis influenced by road safety experts;
- analysis of selected comparators to provide context;
- contributory factor analyses;
- insights from experts on road safety interventions; and
- carefully crafted personas for targeted interventions,
full Insight Studies are available from Agilysis.

Charts coloured pink indicate a focus on residency, whilst charts coloured purple indicate a focus on crash location.

10%
of Greater Manchester Police resident casualties were pedal cyclists

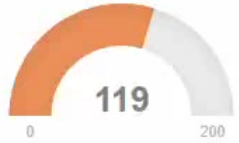
10%
of casualties injured in Greater Manchester Police were pedal cyclist

2342
Greater Manchester Police resident pedal cyclist casualties

2468
pedal cyclist casualties in Greater Manchester Police

Greater Manchester Police resident pedal cyclist casualty index, relative to Great Britain

Pedal cyclist casualty risk rate index in Greater Manchester Police, relative to Great Britain



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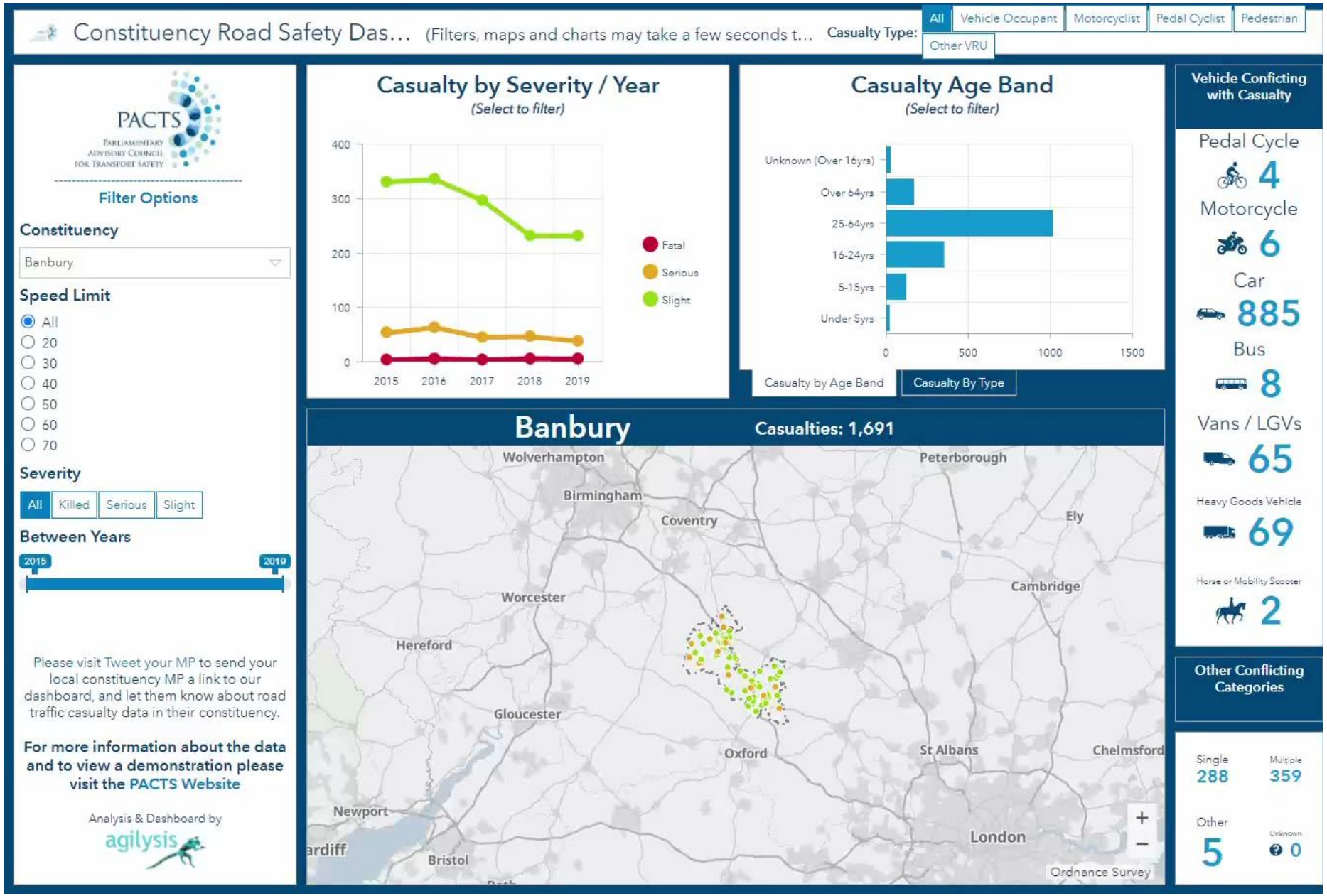

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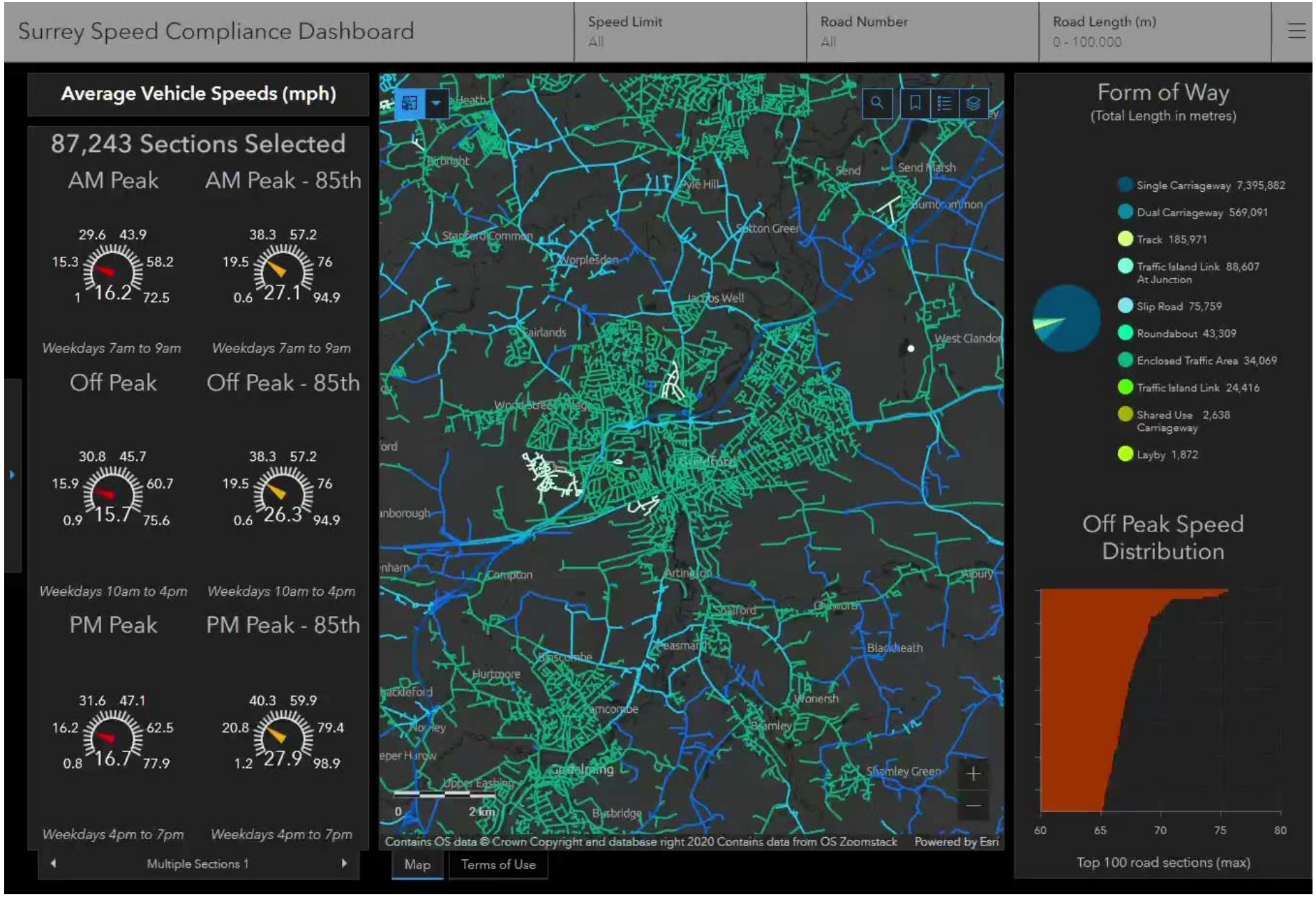

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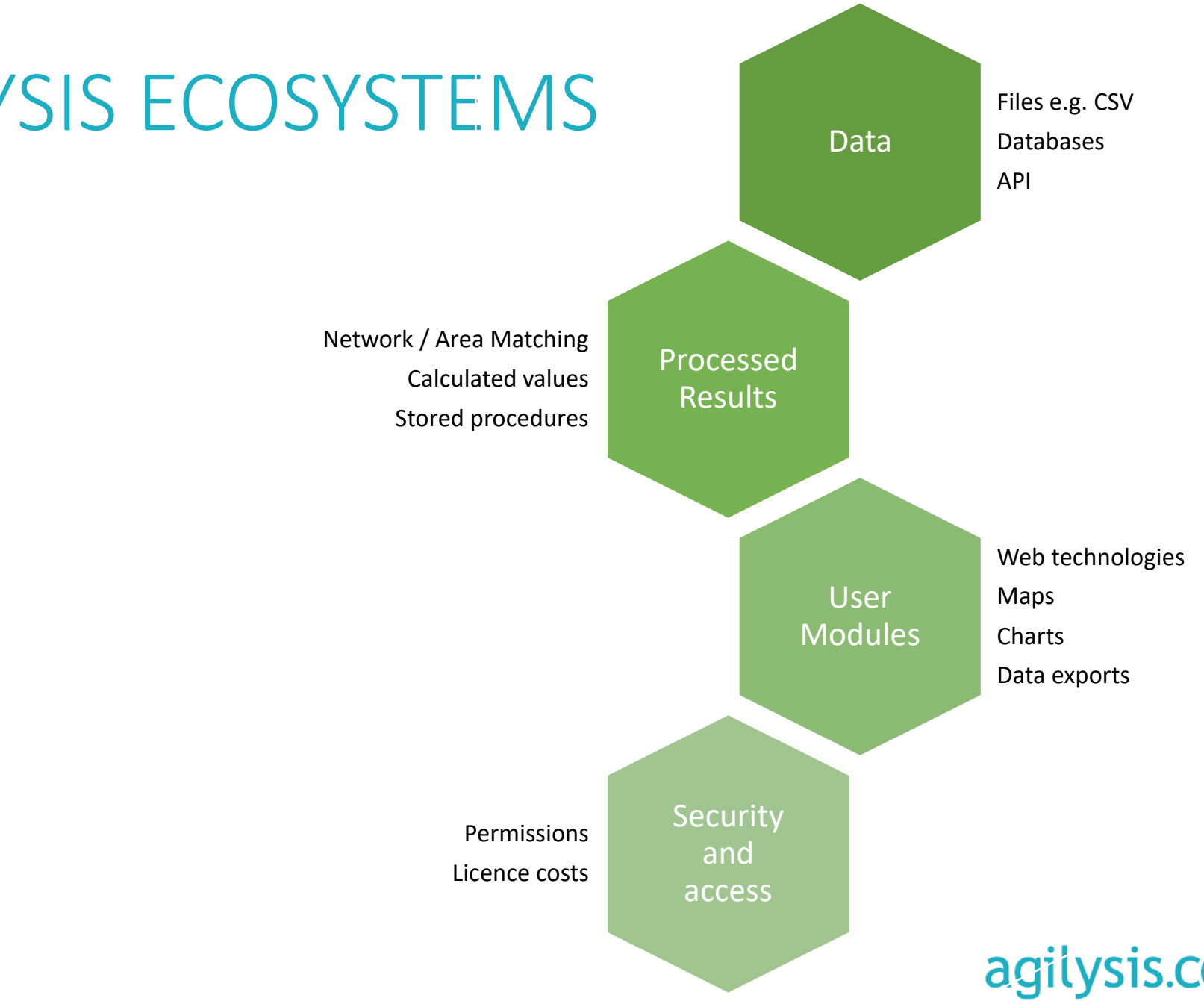
ANALYSIS ECOSYSTEMS



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ANALYSIS ECOSYSTEMS

Files e.g. CSV

Databases

API

- Where does your data come from?
- Direct entry
- API
- Manual Export
- Data Warehouse
  - Offline
  - Cloud

ANALYSIS ECOSYSTEMS

Network / Area Matching

Calculated values

Stored procedures

- Data validation
- Offline processing
- Interactive on-the-fly possibilities?
- RAP
- Documentation
- QA

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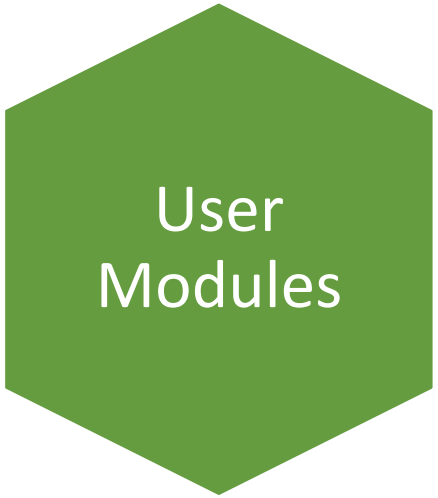
ANALYSIS ECOSYSTEMS



Web technologies

Maps

Charts

Data exports

- SaaS
- Bespoke
- Chart Interactivity
  - Filters
  - Cascading results
  - Save layouts?
- Map layering & Interactivity
- Re-export for something else?

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ANALYSIS ECOSYSTEMS

Permissions

Licence costs

- Public accessibility
- Password protection
- Licensed data
- Personal data
- Backups
- SLA
- Scalability

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SOMETIMES YOU NEED A GEEK

- Data is meaningless without understanding
- End-user must provide clear specifications
- Technological barriers are much lower
- Coding becoming more important

- What kind of geek do you need?

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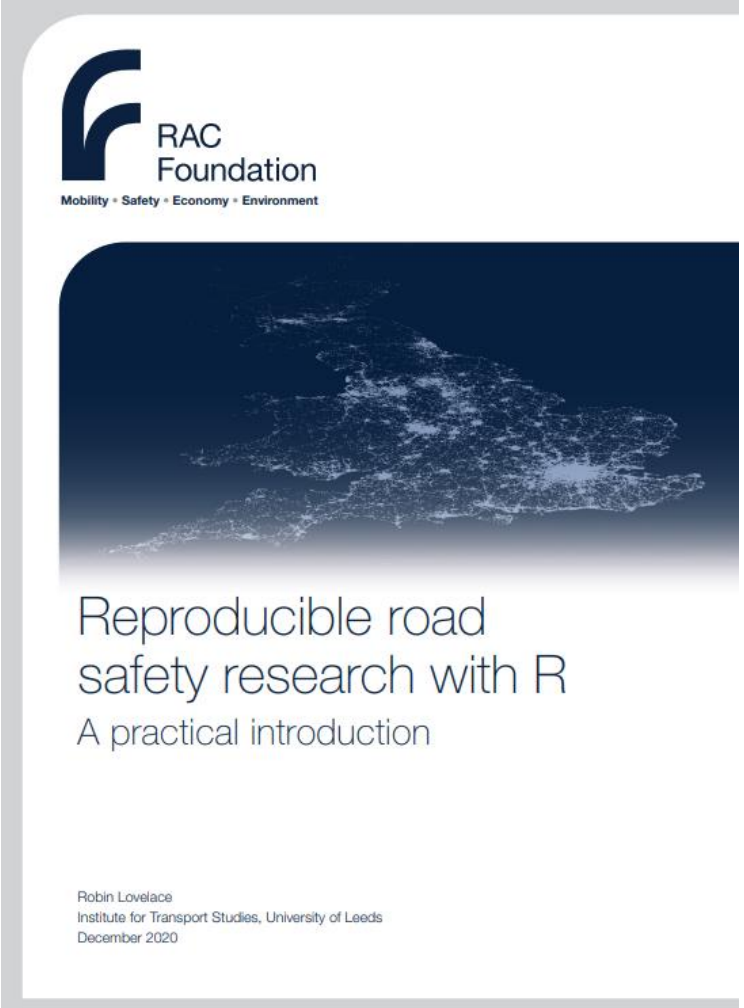
SOMETIMES YOU NEED A GEEK

Data Scientist

- https://www.racfoundation.org/research/safety/reproducible-road-safety-research-with-r
- Coding skills (R, Python)
- Great for processing data (if it's stored appropriately)
- Reproducible Analytical Pipelines
- Data visualisation and tools



SOMETIMES YOU NEED A GEEK

Business Intelligence Analyst

- Good understanding of data structures
- Mix of desktop applications and online SaaS
- Easier to use
- Plenty of useful, standard features
- May be limiting in certain circumstances
- Will incur licencing costs

ArcGIS Online

+ a b | e a u

Power BI

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SOMETIMES YOU NEED A GEEK

Road Safety / Transport Specialist

- Understand requirements of the end-user
- Skilled at using proprietary software
- Purchase pre-analysed outputs
- Limited data processing skills
- Will be proficient at report writing and communicating to multiple audiences

Excel

TRL Software

BUCHANAN COMPUTING

BASEMAP
Digital mapping and transport data solutions

MASTii

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WHAT KIND OF GEEK TO YOU WANT IN YOUR TEAM?

POLL

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Q&A

RICHARD & BRUCE

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Road Safety: What Works and What Does Not Work?

Tuesday 12th October 2021 at 14:00-15:00

Presented by Richard Owen and Tanya Fosdick, with guest speakers Neale Kinnear from TRL, Matt Staton from Road Safety GB, Brian Lawton from the Road Safety Foundation and Jessica Truong from Towards Zero Foundation

Register now | Read more

New Ways of Accessing Road Safety Data

Tuesday 19th October 2021 at 14:00-15:00

Presented by Richard Owen

Register now | Read more

Second Decade of Action

Tuesday 2nd November 2021 at 14:00-15:00

Presented by Dan Campsall with guest speakers Lotte Brondum from the Global Alliance and Jonathan Passmore from Road Safety, Injury & Violence Prevention

Register now | Read more

What Works part 2

Tuesday 9th November 2021 at 14:00-15:00

Presented by Dan Campsall and Tanya Fosdick

Register now | Read more

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