



Martin Carnell

Office for Data Analytics

www.officefordataanalytics.com

WHAT is The Office of Data Analytics?

- A programme to identify and protect vulnerable people at the earliest opportunity by developing an integrated hub for the collation and sharing of data between multiple agencies.
- It will collate data from national data sources, police, ambulance and public health, fire and rescue, local authorities and partners, and the Connecting Care and Troubled Families programmes.
- We will apply predictive analytics visualisation and data science to make possible a joined up and collaborative view on vulnerability risk and early intervention opportunities.

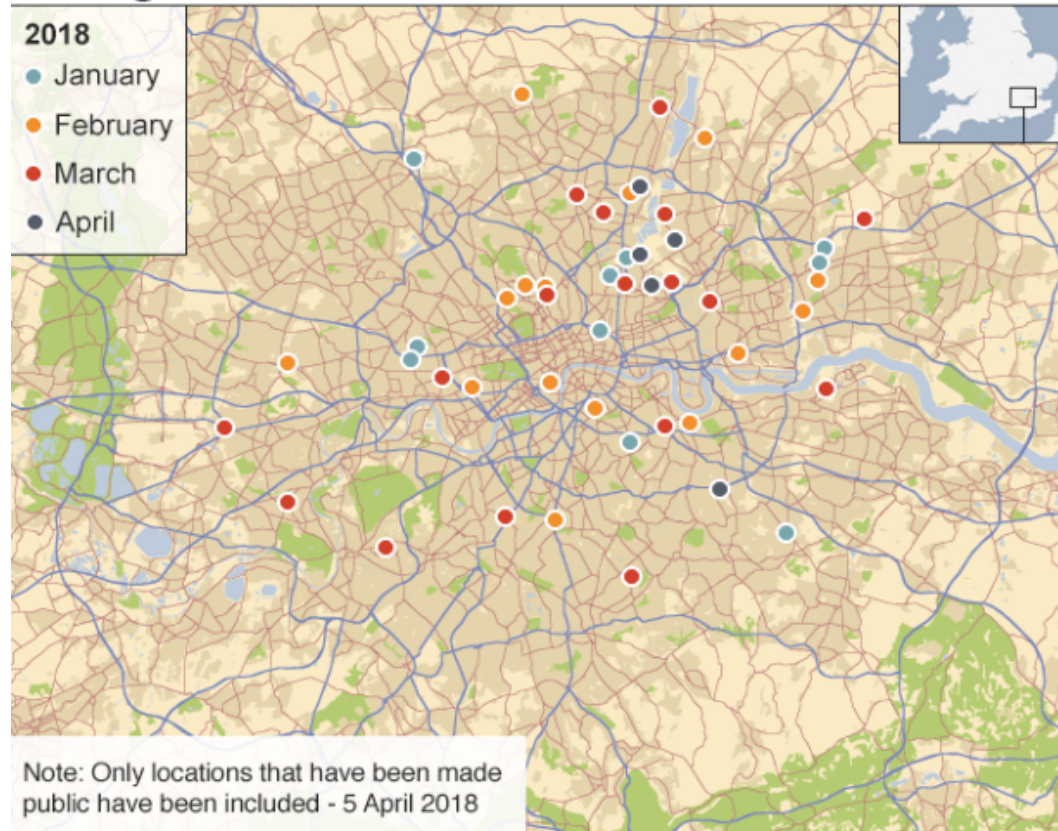
OUTCOMES for The Office of Data Analytics

- Reduced vulnerability and harm and safer communities
- Reduced demand for services
- Better targeting of intervention services in partnership
- Efficiency savings through reducing duplication of effort
- Earlier intervention through focusing 'upstream'
- Reduced injury collisions

Looking Back

Mapping of incident data. Useful reference but focused on the past

Killings in London in 2018



Looking forward

Use historical data to 'predict' future events. Use technology to manage the billions of pieces of data that surround our lives. Focus on reducing risk, harm and costs

Predictive mathematics + visualisation = insight

A powerful combination cutting through the complexity of the vast data available. There is a need to act on the insight if a difference is to be made



**Reducing
Missing
Persons**

**Reducing
Youth
Offending**

**Reducing
Serious
Organised Crime**

**Reducing
Arson**

**Troubled
Family
Analysis**

**Reducing
Suicide**

**Community
Risk Index
(vulnerability)**

**Improving
Safety on the
roads**

**Reducing
International
Criminality**

THE
BEHAVIOURAL
INSIGHTS TEAM



Home Office

IN PARTNERSHIP WITH  Cabinet Office

Examples of work undertaken to date...



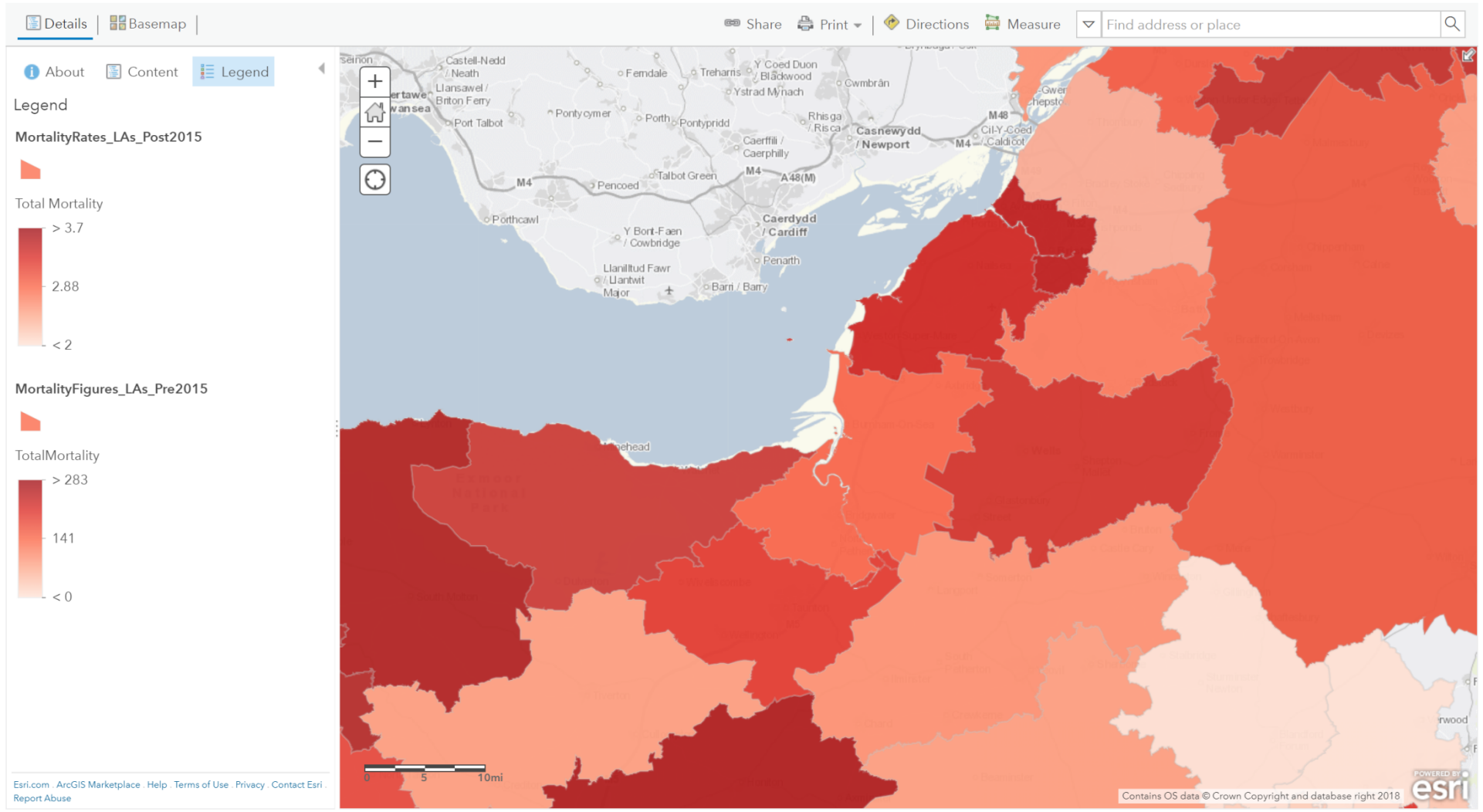
Community Risk Index

Provides a baseline against which future progress can be measured and provides a complete overview of risk of death in an area.

Includes data on:

- Drowning
- Murder
- Accidental falls
- Transport collisions
- Suicide

Drawn from public health data. Applied across the South West Region. Open Source.



Missing People

- Costs in dealing with missing people are significant for Police and Local Authority.
- Opportunity exists to act on the insight provided which predicts who will go missing from what location and when.
- ASC are exploring next steps but there is limited engagement from any other partner at present.

Opportunity presented for local authority partners to act on the insight and save costs as well as reduce the chance of vulnerable people being exploited.

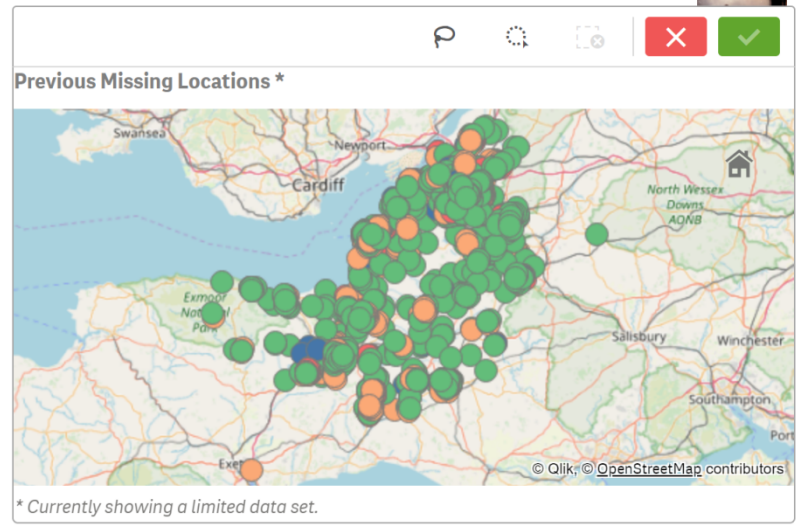
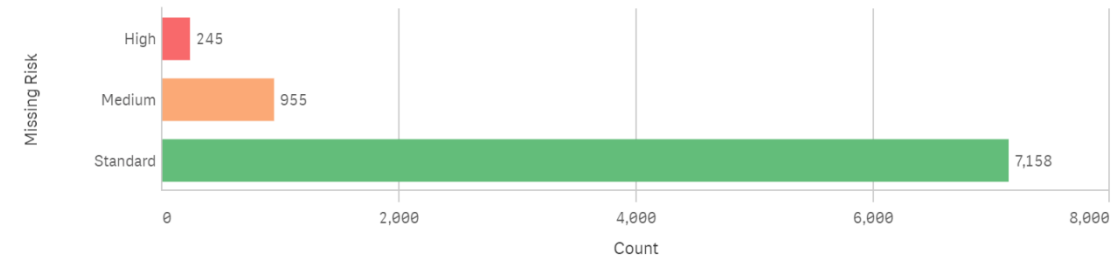
Future Risk (missing 5+ times next 12M or 2 times next 30 days)

All the risks on this page are calculated using predictive analytics. However Bristol has an improved model as it has enhanced data from Insight Bristol.

Misper

Area LPA

Predictive Risk of Going Missing



Name	Risk	Times Missing 12M (Total)	1_Parents and children involved in crime or ASB	2_Children who have not been attending school	3_Children who need help	4_Adults at risk of financial exclusion or young people at	5_Families affected by Domestic Abuse	6_Drugs
KP_\++7A@I"JM)GT5U58Y% 17/04/2003	94	0 (22)	1	2	1	0	0	0
DLTUG^JS\Z9T?Q6.(SIL) 18/09/2006	93	3 (5)	0	2	4	0	0	2
JFHX.VED@WVC` ;8Y8P4K) 01/02/2000	92	0 (2)	2	1	3	1	1	2
MX)VXI"V\$RE`L(W)V,GG' 02/10/2002	91	24 (25)	3	2	5	1	2	4
E@:7P^B*92Z\$WS73J^)3UI 18/12/2002	91	6 (8)	4	3	3	1	0	2
LP,9GBMBA>[9=G5]GIY?I. 09/03/2002	89	9 (15)	0	2	3	0	0	1
P1JEU:](9M&6#R)KX0K[- 24/08/2003	87	2 (2)	0	1	2	1	1	1
FGQ">JVL;75JZ>E/SW?<{(19/09/2002	86	9 (19)	0	1	3	0	0	0
A]KX167>@N4TAT7@HTG]X% 30/04/2004	85	9 (11)	0	3	3	0	0	1

Road Safety

- Has a good history of joint activity with partners in focusing on early intervention to help reduce the costs and consequences of road deaths/injuries
- Always been open to using a variety of data sources but opportunities limited
- Forecasting future death rates, locations and type of vehicle involved

Opportunity for other local authorities & bodies with an interest in road safety to engage

Nick Cowling

Somerset County Council

**Service Manager – Road Safety &
Transport Data**

ODA Road Safety App Lead Adviser

Sharing your health and care information

Making the right information available to the right people at the right time

GETTING THE BIGGER PICTURE

A new service called SIDER (Somerset Integrated Digital electronic Record) is being rolled out across Somerset over the next few years to allow GP practices, hospitals and Social Care to securely view your health and care information.



This new technology will help us to link up our existing IT systems that record and securely store your information, so that medical and care staff can view your information to help them deliver better and safer care for you. For example, they will

be able to see what medications you're taking, what allergies you have and what appointments you have coming up. If you have a care plan in place, they will also be able to see this to understand what your exact needs are.

SIDER HELPING YOU



Frank has diabetes. While out shopping he became ill due to very low blood sugars and was taken to his local Accident and Emergency department.

Frank was very confused, he knew his name and address, but couldn't remember who his GP was or what medication he was taking.

Using SIDER, A&E staff were able to view his records, check his medical history, medication and allergies.

Frank got the treatment he needed and they decided to stop some of the medication he was on that caused the low blood sugar. A message was sent to Social Services using SIDER, requesting an assessment for Frank for when he was discharged.

The Social Worker used SIDER to find out what treatment Frank received, and arranged a package of care and a key safe for the front door.

His GP carried out a review and created a care plan for Frank's diabetes, which she shared with the District Nurse through SIDER, saving her a trip to the GP practice.



SECURE

SIDER in action

Your GP records

As part of SIDER, hospitals and out of hours services, (for example, NHS 111 and community care) can, with your consent, now view your GP records electronically using GP Record Viewer.

GP Record Viewer allows clinicians, with your GP records at hand, to treat you quicker and more effectively. It has also reduced the amount of time GP practices spend answering calls from other care providers requesting your information.

As SIDER progresses, more records will become available in this way.

The benefits to...

An Out of Hours GP

"Even on day one of the new system, we received some abnormal lab results. Without access to the patient's GP record, I would have had to recommend the patient go to A&E, but as I could see their GP record I knew that attending A&E was not actually necessary."

A Paediatrics Consultant

"I accessed the GP record to complete a timeline on a young person who may have been at risk of abuse. Normally, getting this information would mean writing to the GP to get a print out of all their attendances. It was so much easier using GP Record Viewer."

A&E Nurse Practitioners

"I had an elderly lady who knew she was taking a new tablet but could not remember what it was called. She said she was not allergic to anything, however she was. These sorts of things could have proved really dangerous without being able to verify the information quickly."
"By having access to the GP record I was able to avoid duplicating blood tests and carrying out an unnecessary X-Ray examination."

Confidential

A Somerset primary link nurse

"Social Services called, a lady had thrown out her husband who had dementia. They had arranged an emergency placement for him, but no one seemed to know what tablets he should be taking. As I had access to the GP record I was able to tell them his current prescription, allowing medication to be dispensed and given safely."

APPROPRIATE

Look out for more information on SIDER in future editions of *Your Somerset*.

TECHNOLOGY FOR THE FUTURE



Taunton and Somerset NHS Foundation Trust is introducing new technology to improve patient care using £10m of government funding for digital projects.

- A new clinical app called Streams will allow doctors and nurses to capture your key information, such as your pulse or blood pressure, on a mobile device at your bedside. They will also be able to look at results of any important clinical tests, such as blood tests, in one place.
- Doctors and nurses will be able to record your 'vital signs' on a mobile device. They will also be alerted to any patient who may need assessing immediately.
- Digital whiteboards will give all medical staff working on a ward an overview of patients, helping to improve care, ward transfers and discharge from hospital.

For more information, visit www.tsft.nhs.uk/patients-and-visitors/confidentiality-and-data-protection/

SPEEDING UP THE REFERRALS PROCESS

Yeovil District Hospital clinical services have been working with GP practices across the area to improve the referrals process for patients. By using the hospital system they can now check and track patient referrals electronically, reducing response times.

GPs can now book an appointment for you and offer a choice of slots for 99 per cent of appointments. You can also choose to receive your appointment details by email or text.



ELECTRONIC PRESCRIPTION SERVICE

Nearly all GP practices in Somerset offer the Electronic Prescription Service (EPS).

This allows your GP to send your prescription electronically to the pharmacy of your choice. Speak to your GP practice or local pharmacy to find out more, or visit www.digital.nhs.uk/electronic-prescription-service



YOUR PERSONAL INFORMATION AND THE LAW

New laws are being introduced, which will give you more rights over what happens to your personal information.

The UK Data Protection Act (2018), which comes in on 25 May, will see the UK adopting new rules. This will change how all organisations and businesses deal with your personal data.



SO, WHAT DOES THAT MEAN FOR YOU AND THE INFORMATION WE HOLD ABOUT YOU?



For more information about the changes to the law and how it affects you, visit the Information Commissioner's Office website at www.ico.org.uk or NHS Digital at <https://digital.nhs.uk/>

A PATIENT'S VIEW

Many of us have computers, but how can we use them to improve our health?

- Sign into your patient record and see some of your own information
- Order your repeat prescriptions
- Learn more about your health, your conditions and how to keep well

To find out more, visit www.nhs.uk/GPonlineservices



Data Sources

Data points in Road Safety App

<input type="text" value="Agency"/> <input type="text" value="Agency Type"/> <input type="text" value="Data Source"/>			<input type="text" value="Year"/>	
			Totals	
Totals			404666	
+ Ambulance			12097	
+ Avon and Somerset Police			350684	
+ Avon Fire			539	
+ Cornwall Fire			356	
+ Devon and Cornwall Police			15547	
+ Devon and Somerset Fire			1021	
+ Dorset & Wiltshire Fire			682	
+ Dorset Police			1596	
+ Gloucestershire Fire			166	
+ Highways England			21806	
+ Somerset County Council			115	
+ TARN			57	

Summary

Year

Month

Weekday

Date

Hour of Day

...

Road Name

...

Incident Type

Incident Severity

Fatal

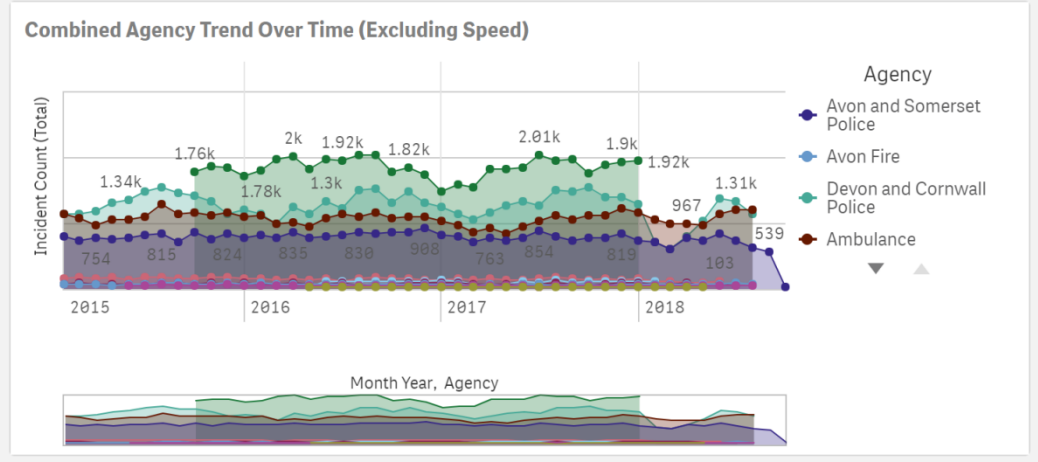
Injury (Not Specified)

Non Injury

Incident Description

Incident Reason

Incident Count (Total) 196.2k <small>96.1k Casualty Count</small>	Incident Count (County Council) 244	Incident Count (Highways Agency) 51.08k	Incident Count (Police) 467.1k	Data Count 571.4k
	Incident Count (Fire) 7.8k	Incident Count (Near Miss) 1.71k	Incident Count (Speed Enforcement) 64.72k	



Peak Day and Hour (all data sources)

	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23
Mon	612	413	377	453	903	1802	3464	4598	5639	6368	4810	4797	4680	4886	5527	6463	6642	5834	3907	3088	2486	1858	1318	820
Tue	529	371	335	382	767	1710	3137	4389	6082	5632	4970	4499	4721	4496	4966	6009	6159	5843	3950	3261	2512	1816	1338	878
Wed	525	386	289	361	689	1388	2787	4009	5188	5101	4057	3865	3958	4170	5037	5627	5724	5450	3844	2956	2271	1764	1248	878
Thu	594	412	350	445	758	1598	3346	4594	5974	5419	4575	4637	4484	4727	5396	5882	5979	5975	4399	3442	2732	2075	1598	1095
Fri	794	546	488	588	1134	2268	4143	5747	7106	7194	6376	6835	6830	6821	7311	8017	8019	7613	5360	3888	3101	2494	2095	1558
Sat	1281	841	777	679	1013	1330	2070	3229	4528	5862	6092	5991	5951	5730	5772	5668	5307	4907	4159	3301	2515	2240	1865	1738

Incident Details

Loc... In...

Persons Involved (Collisions) Office for Data Analytics

Year []

Month []

Weekday []

Date []

Hour of Day []

...

Road Name []

Beat Name []

Local Authority []

Bath and North East S...

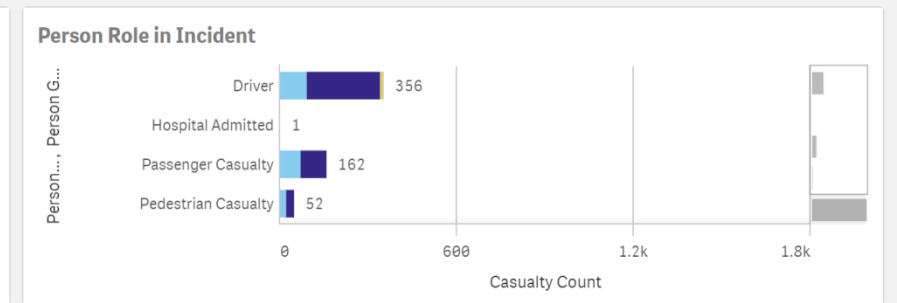
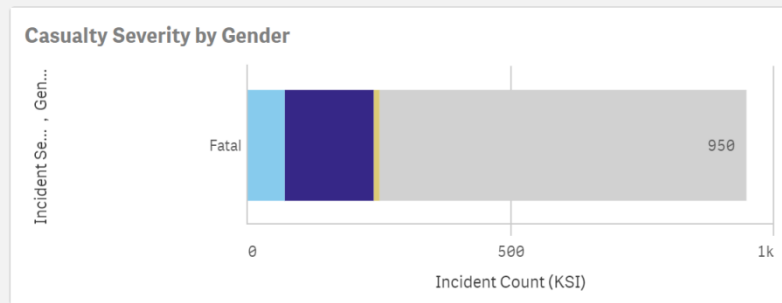
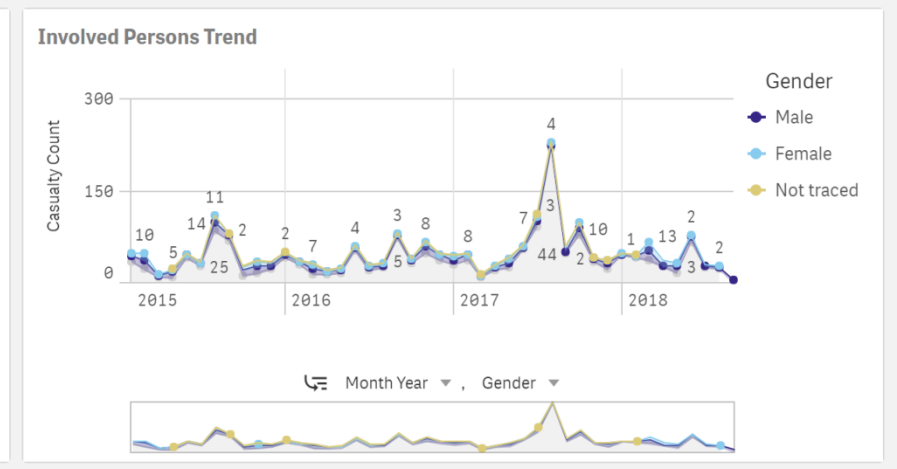
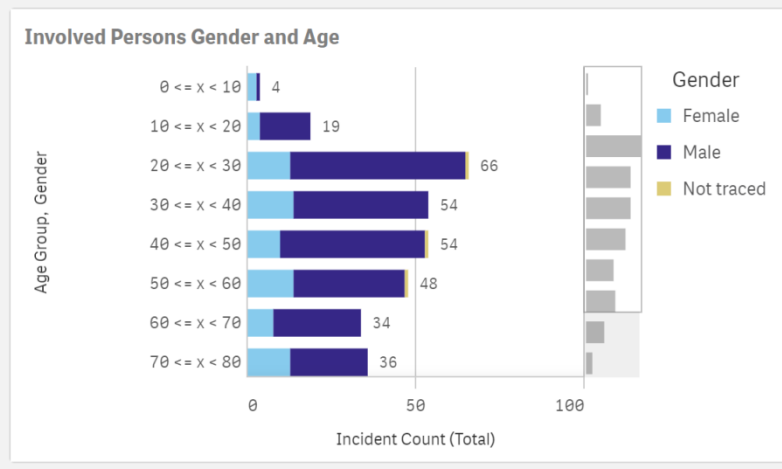
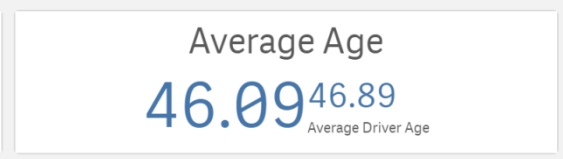
Bournemouth

Bristol

Incident Type []

Incident Severity []

...



Damage to Road Furniture Office for Data Analytics

Year

Month

Weekday

Date

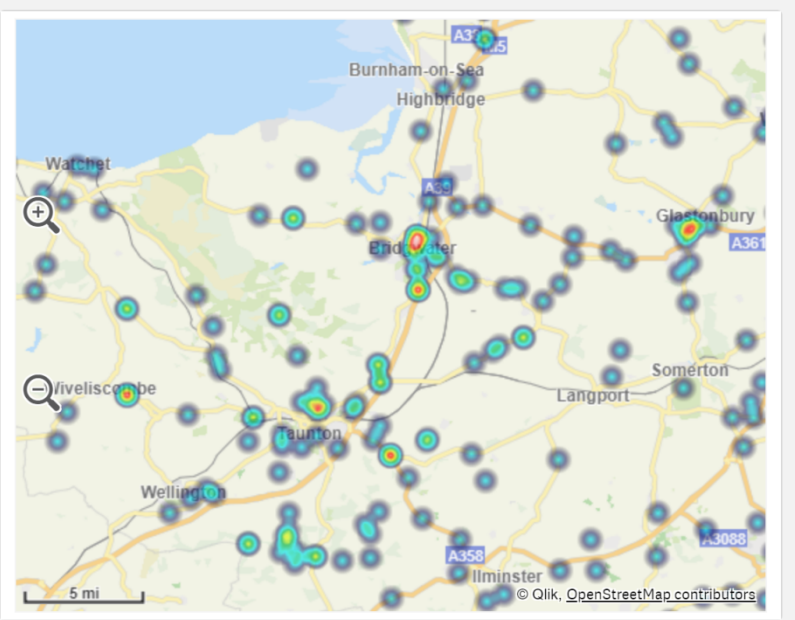
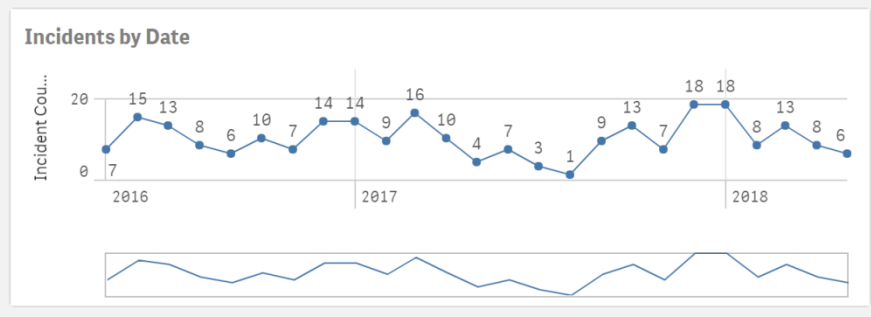
Hour of Day

Agency

...

Incident Count (County Council) **244**

Location Count (Road Furniture ...) **217**



Road

Beat Name

CSW Network

Mendip

North Somerset

South Somerset

West Somerset

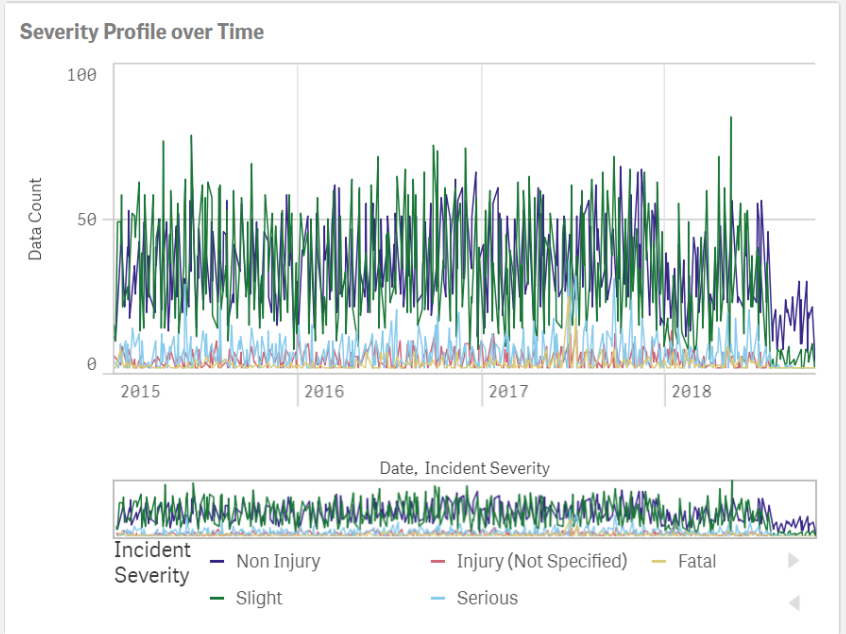
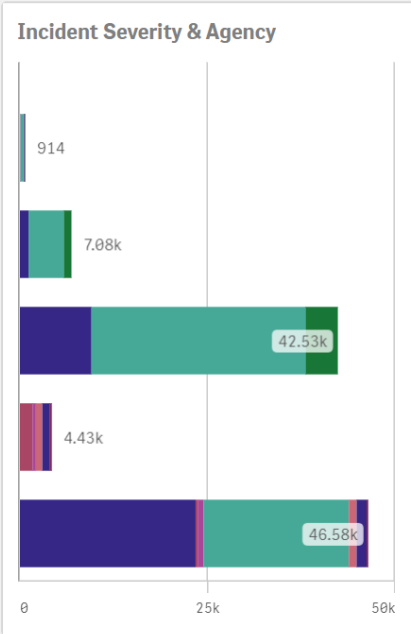
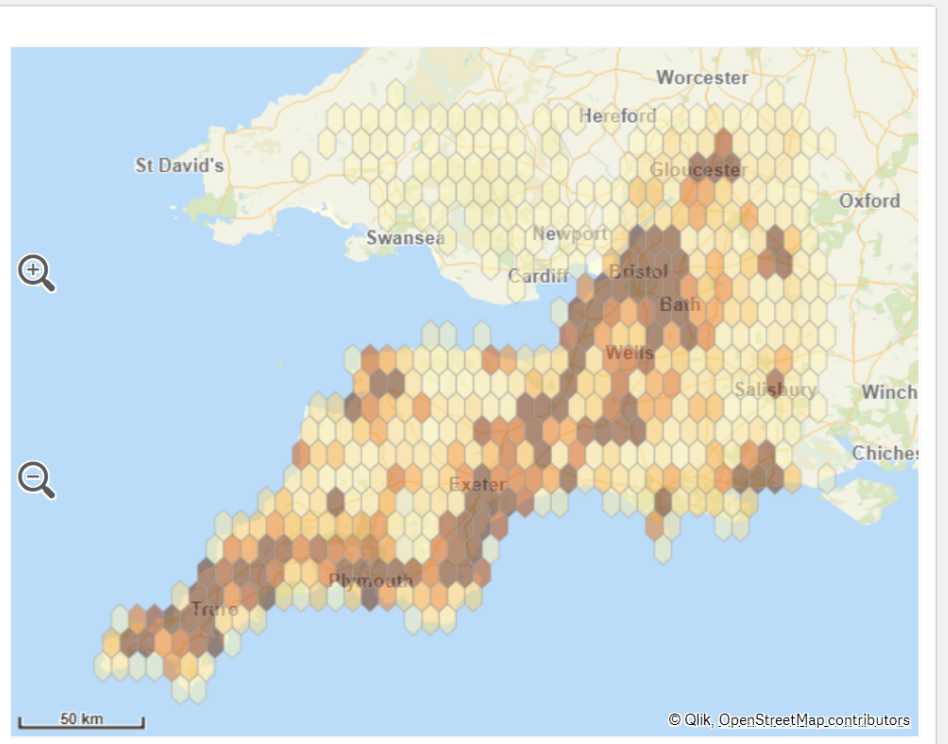
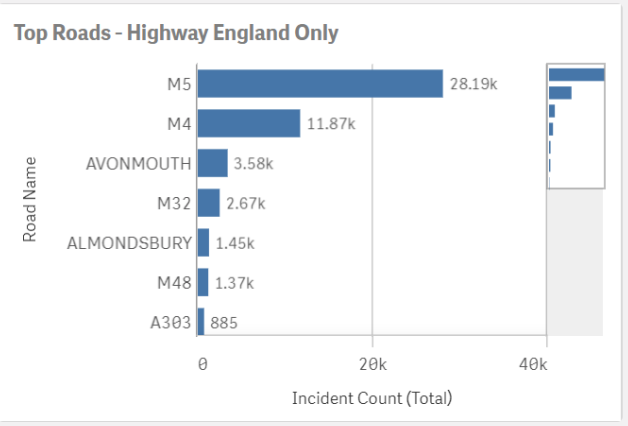
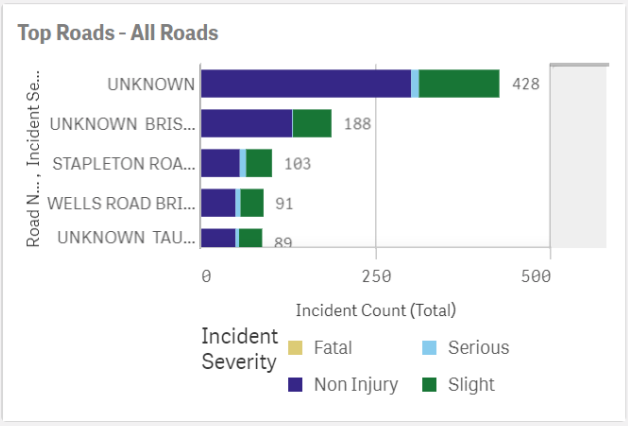
Top Location Descriptions

Location Description	Incident Count (County Council)
Totals	244
BLAGDON HILL ROAD(T4300/60)	3
BURROW WALL / GROVE HILL(A361/350)	3

Incident Detail

Date	Time	Hour	Incident Type	Location Description	Incident Count (County Council)
Totals					244
14/04/2016	13:45:37	-	County Council	RIMPTON ROAD(T5713/10)	1
15/04/2016	13:16:34	-	County Council	WESTERN DROVE(T1660/60)	1

- Agency Type
- Agency
- Year
- Month
- Weekday
- Date
- Hour of Day
- Road Name
- Beat Name
- Local Authority
- Area Unknown
- Bath & North East Somerset
- Bath and North East Somerset
- Bournemouth
- Bristol
- Incident Type
- Incident Severity
- Incident Description
- Incident Reason



Incident... Incident... HH0_05W0_05

Most Common Incident Descriptions with a Severity

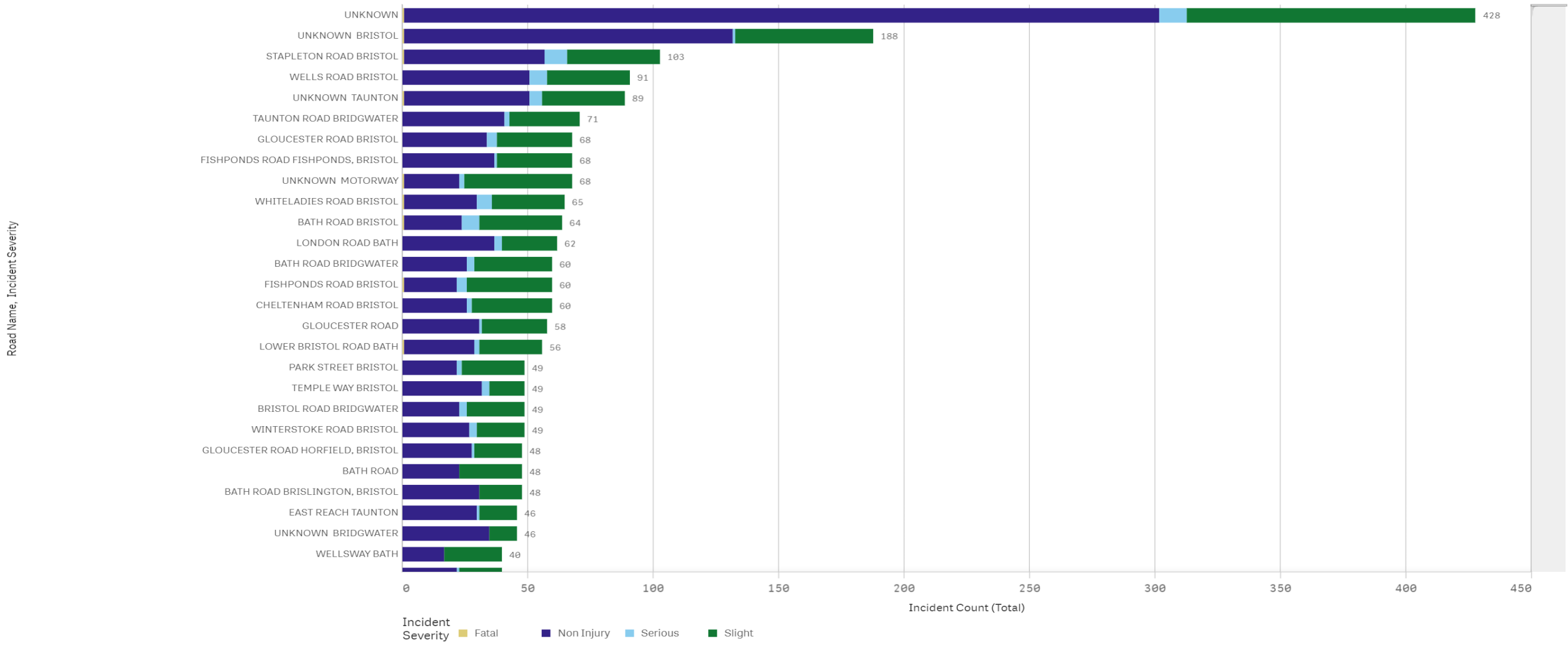
Incident Description	Incident Count (with severity)	Incident Count (KSI)
Totals	4365	2009
Breakdown - not in live lane	2337	1203
Obstruction - Tyre	1899	1079
RTC persons trapped (small vehicles)	1068	599
Pedestrian	524	262
Breakdown - live lane	476	129
Abandoned Vehicle	441	245
RTC	360	95
Infrastructure Damage	293	65

No selections applied

Incident Profiler

Office for Data Analytics

Top Roads - All Roads



- Agency Type
- Agency
- Year
- Month
- Weekday
- Date
- Hour of Day
- Road Name
- Beat Name

- Local Authority
- Area Unknown
 - Bath & North East Somerset
 - Bath and North East Somerset
 - Bournemouth
 - Bristol

- Near Miss Road User
- Cyclist
 - Driver
 - Motorcyclist
 - Pedestrian
 - Unknown

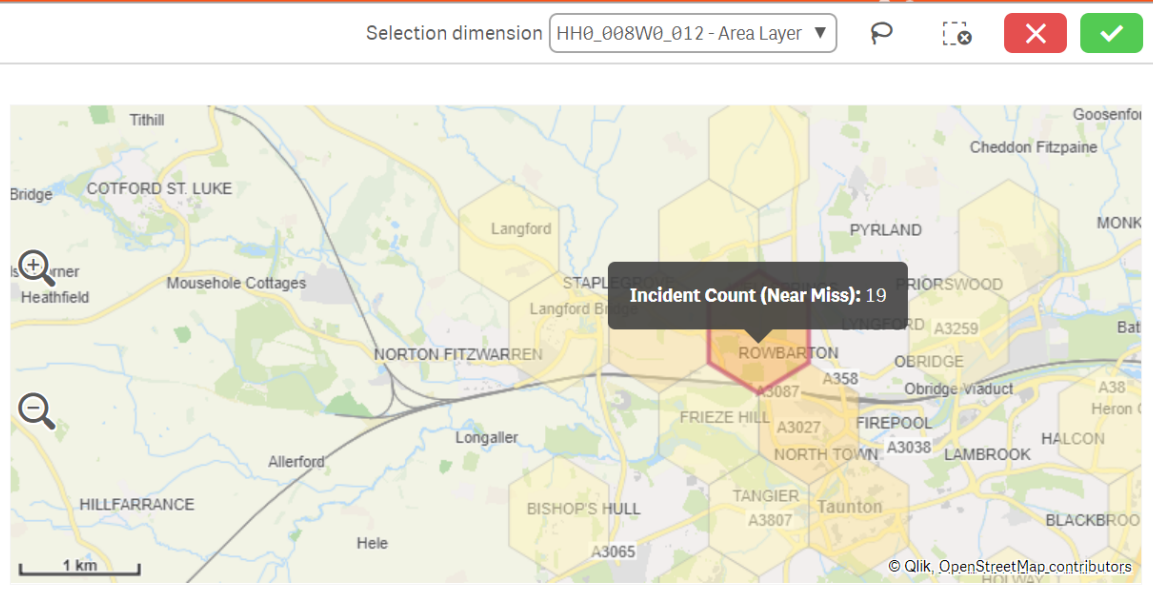
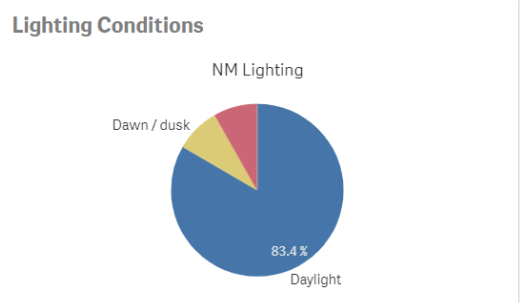
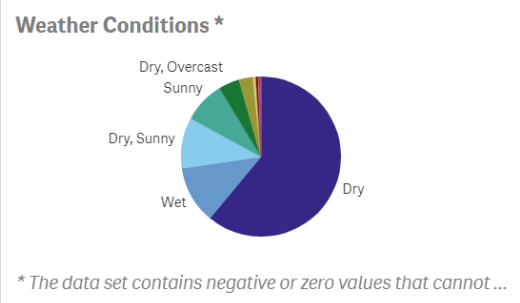
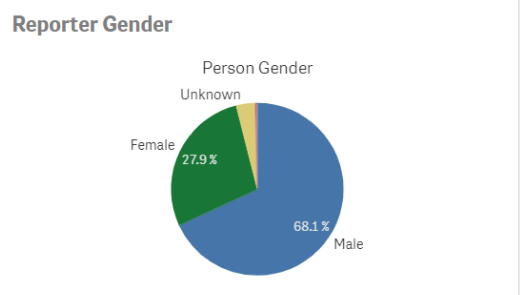
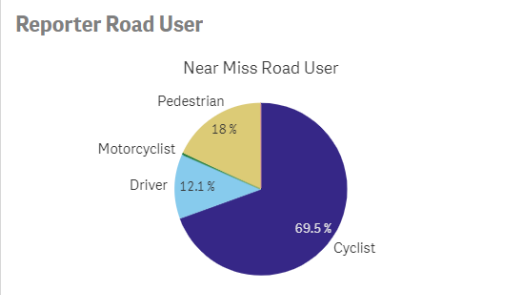
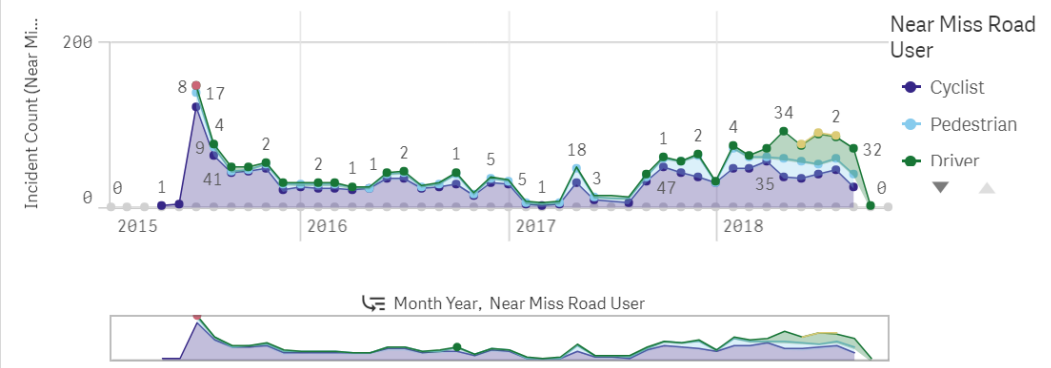
Incident Count (Near Miss)

1.71k⁵⁴⁹ Reporters

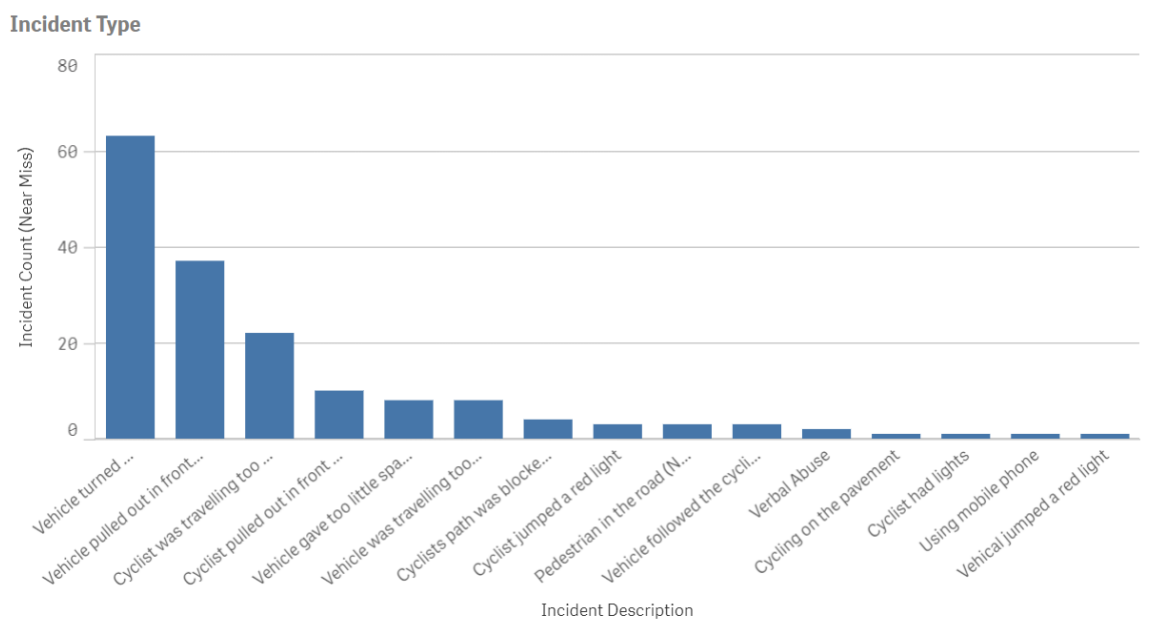
Wet Weather

102⁵³⁶ Dry

Near Miss Reported Trend



Map controls: Home, Incident Count (Near Miss), Legend, Info





Agency Type

Agency

Year

Month

Weekday

Date

Hour of Day

Road Name

Beat Name

Local Authority

- Area Unknown
- Bath & North East Somerset
- Bath and North East Somerset
- Bristol
- Devon

Incident Type

Incident Severity

Multi-agency locations (will change resolution as you zoom in)





Any Questions?

www.officefordataanalytics.com