

Webinar

- Please use the Q&A Section to ask questions – We will answer as many as we can
- This is being recorded and will be available to review shortly
- The PDF slides are also available



Local Route Analysis and
Risk Mapping
Techniques
Richard & Craig

Local Route Analysis and Risk Mapping Techniques

This one-off Agilysis webinar will explore the ways in which we can identify distinct routes, match data to roads, and finally analyse risk to prioritise safety interventions.

It will show how analysis can be made much more accessible without significant technical skills, and how it can be shared quickly and easily with colleagues and stakeholders.

- How to define 'routes' using Ordnance Survey maps
- Data sources available to create road attributes
- Creating risk metrics
- Visualising high-risk roads in your area
- Tools to identify 'hotspots' along route



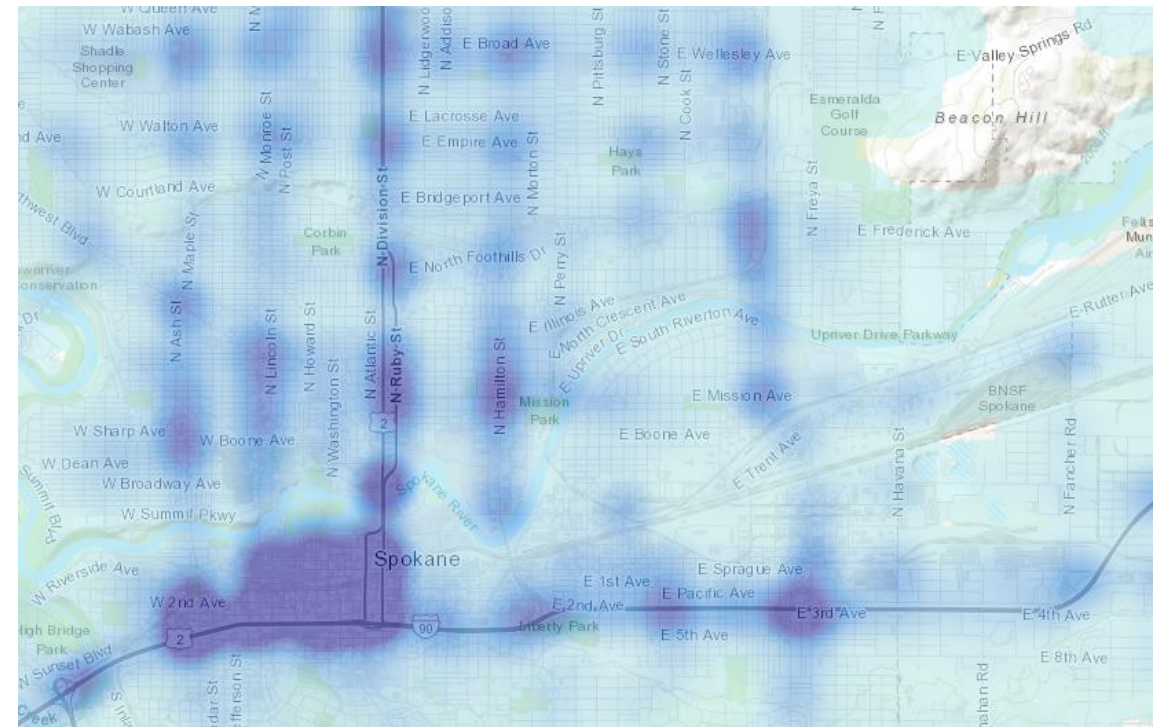
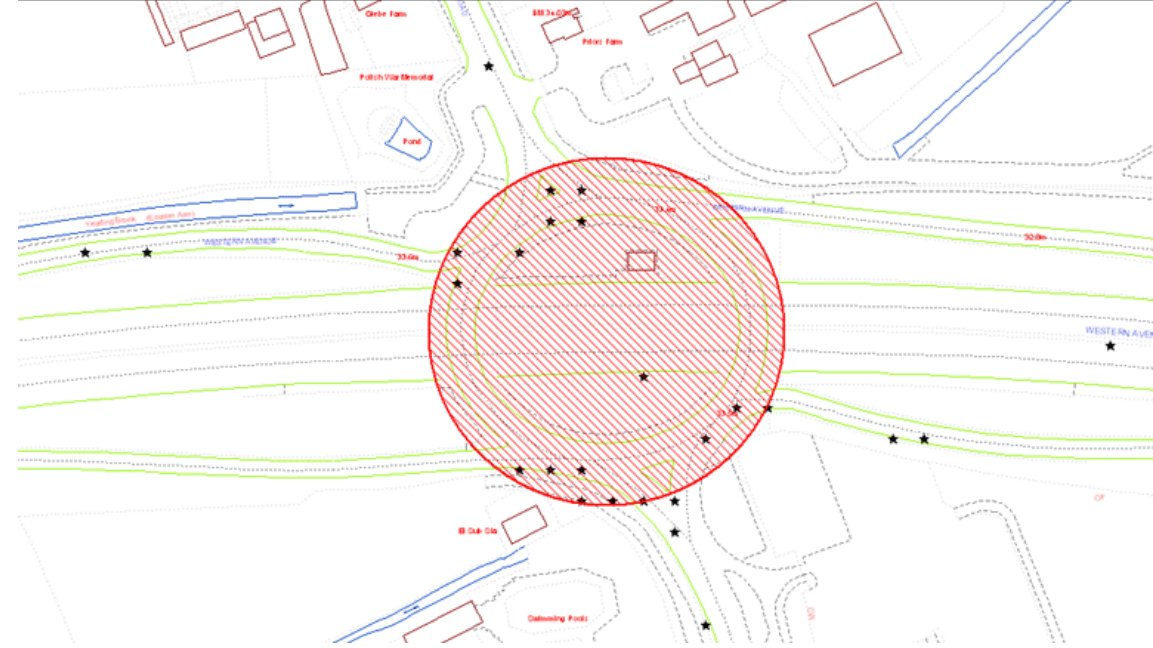
How to analyse roads?

POLL: What routine spatial analysis do you undertake?

- Areas
- Clusters
- Routes

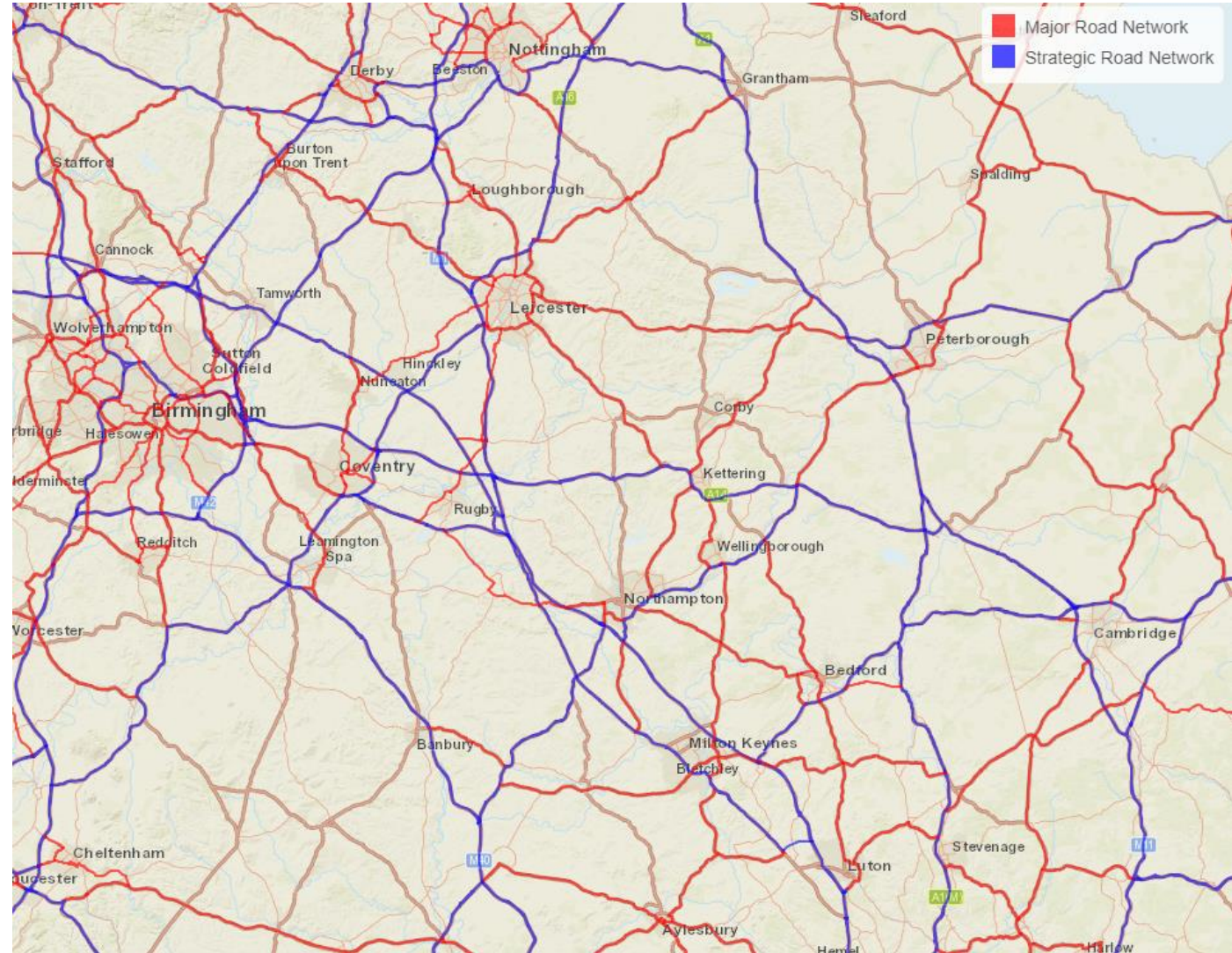
How to analyse roads?

- Ignore network – Cluster analysis, heatmap
 - Crude density analysis tool
 - Lacks network-awareness
 - Frequently identifies busy junctions
 - Doesn't reflect how roads are used
 - Has been popular in the past



How to analyse roads?

- Use someone else's routes
 - MRN



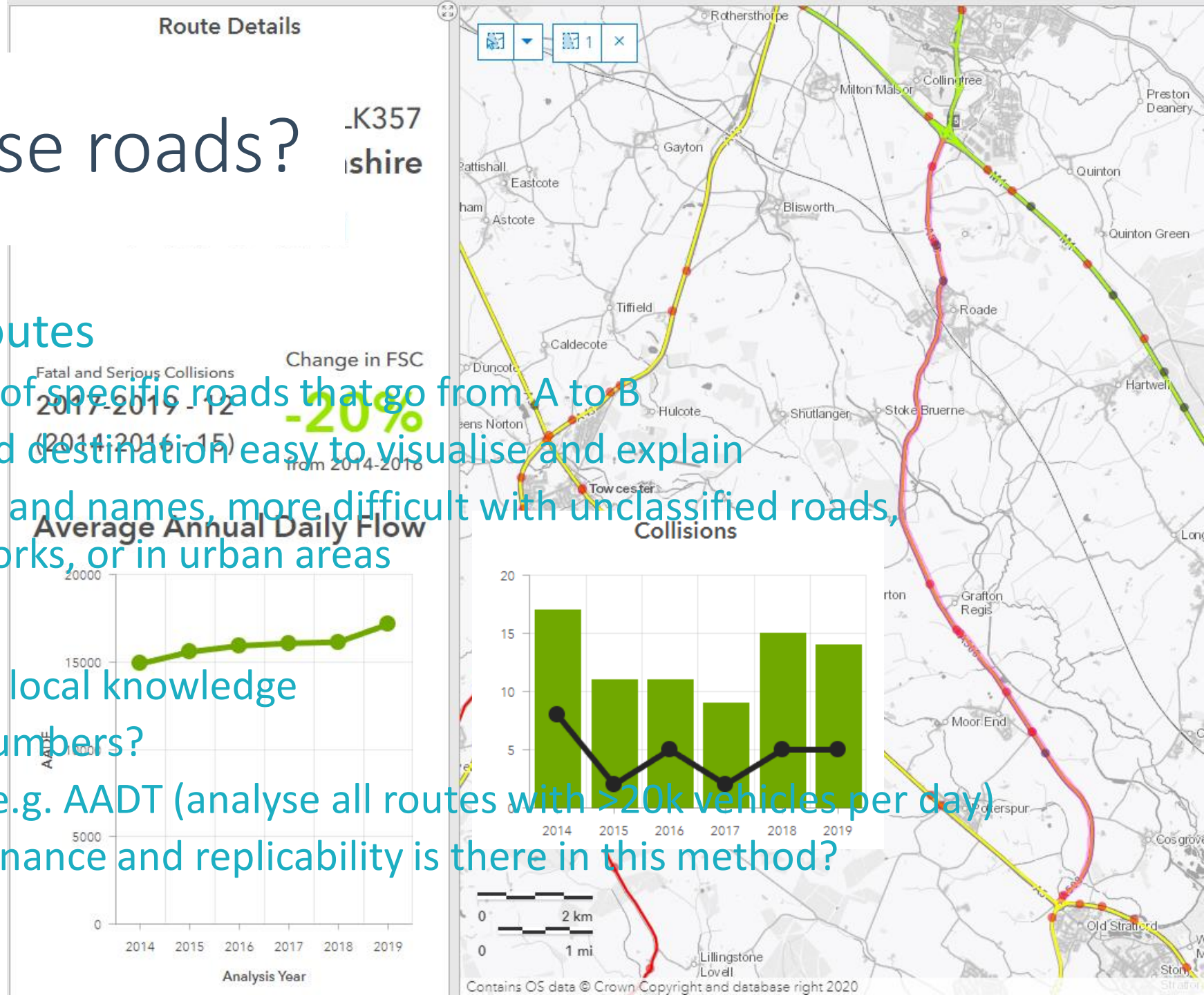
How to analyse roads?

- Create your own routes

- It's easier to think of specific roads that go from A to B
- Points of origin and destination easy to visualise and explain
- Use road numbers and names, more difficult with unclassified roads, complicated networks, or in urban areas

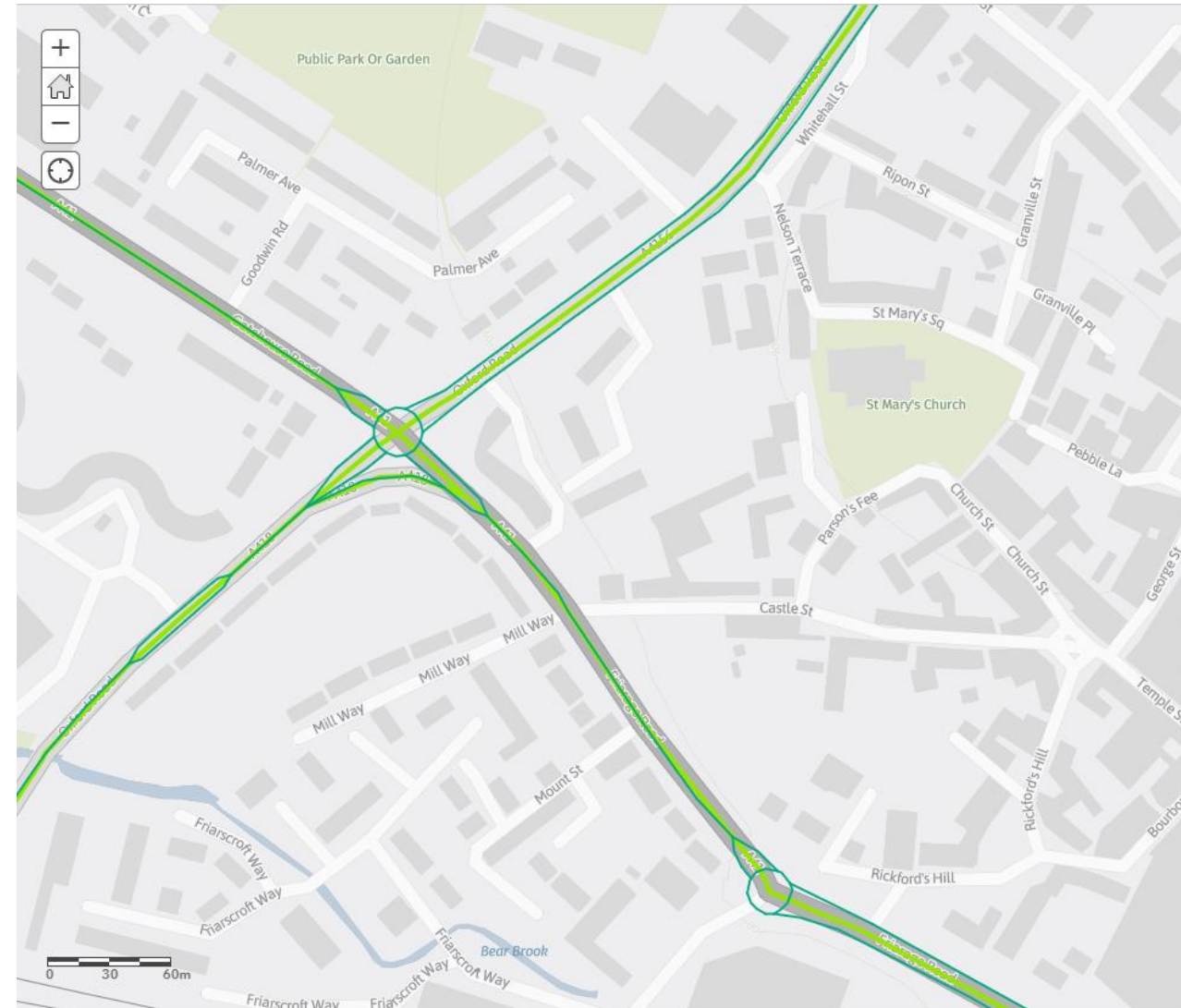
- Does require effort

- Create maps using local knowledge
- Or just use road numbers?
- Informed by data e.g. AADT (analyse all routes with >20k vehicles per day)
- How much maintenance and replicability is there in this method?



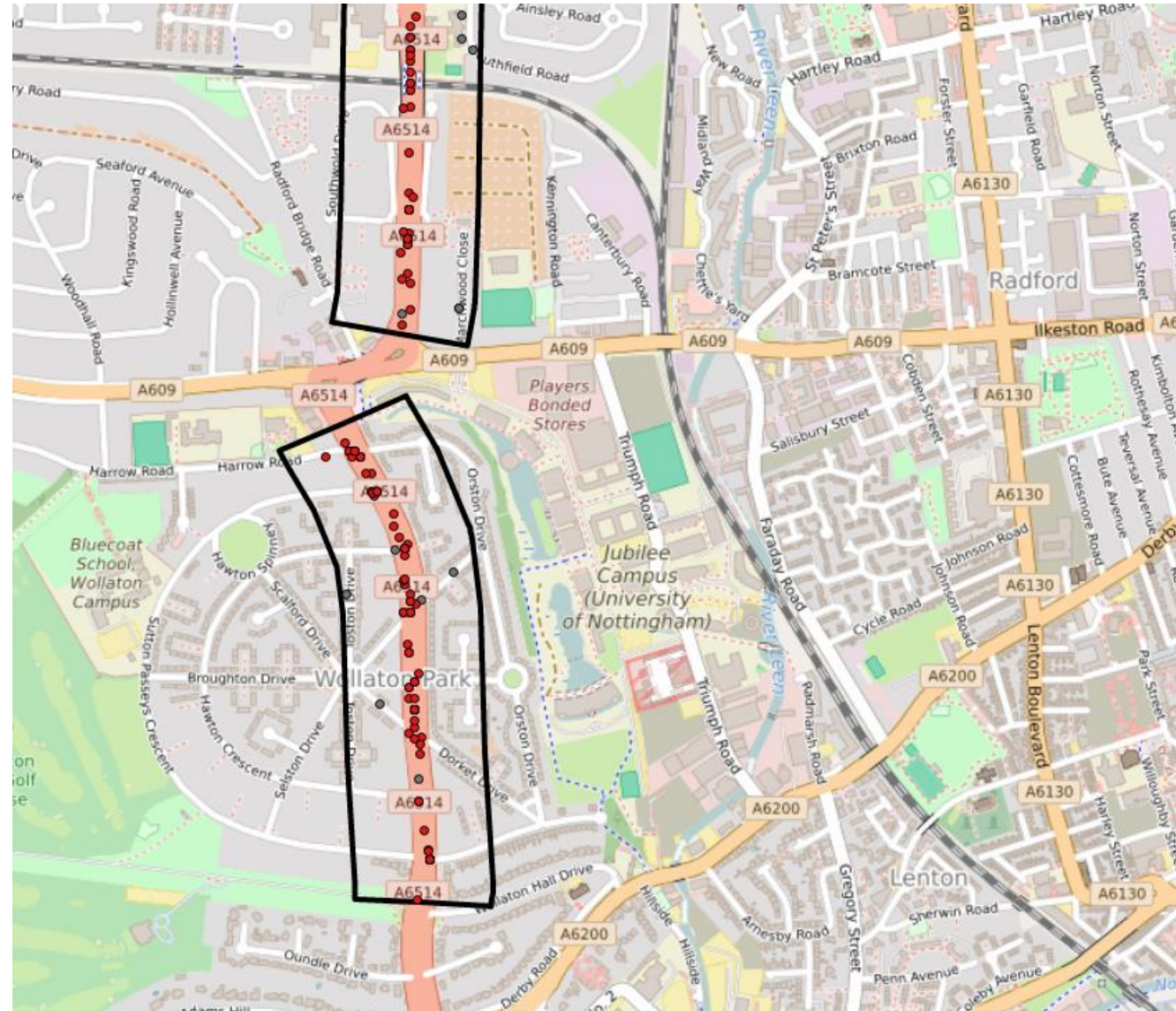
Selecting a Network

- OS Open Roads
 - More generalised
 - Good for longer distances
- OS MasterMap Highways
 - More detailed geometry
 - Extra data



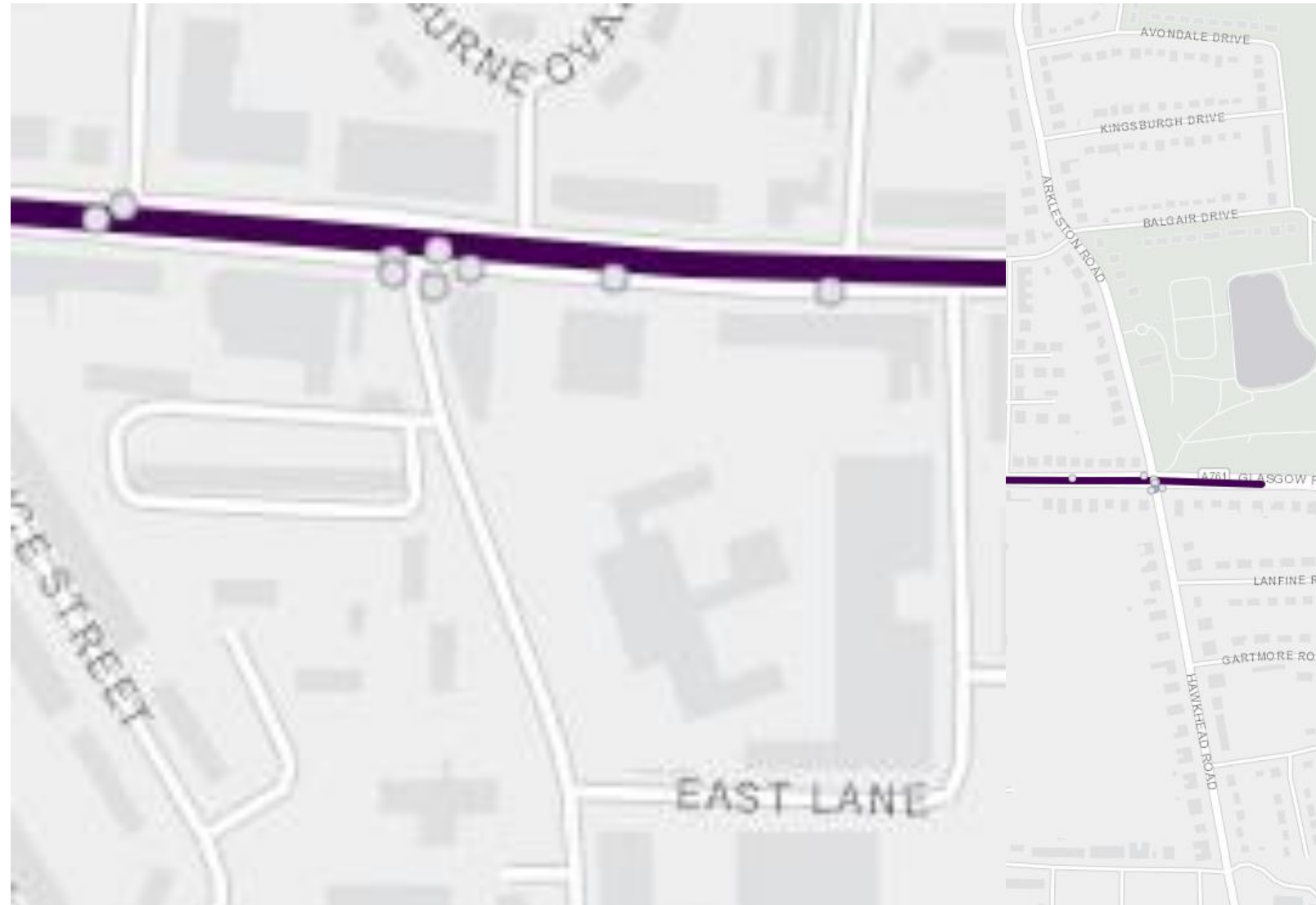
Matching Collisions

- Polygons
 - Collisions within
 - Option filter by road number / name



Matching Collisions

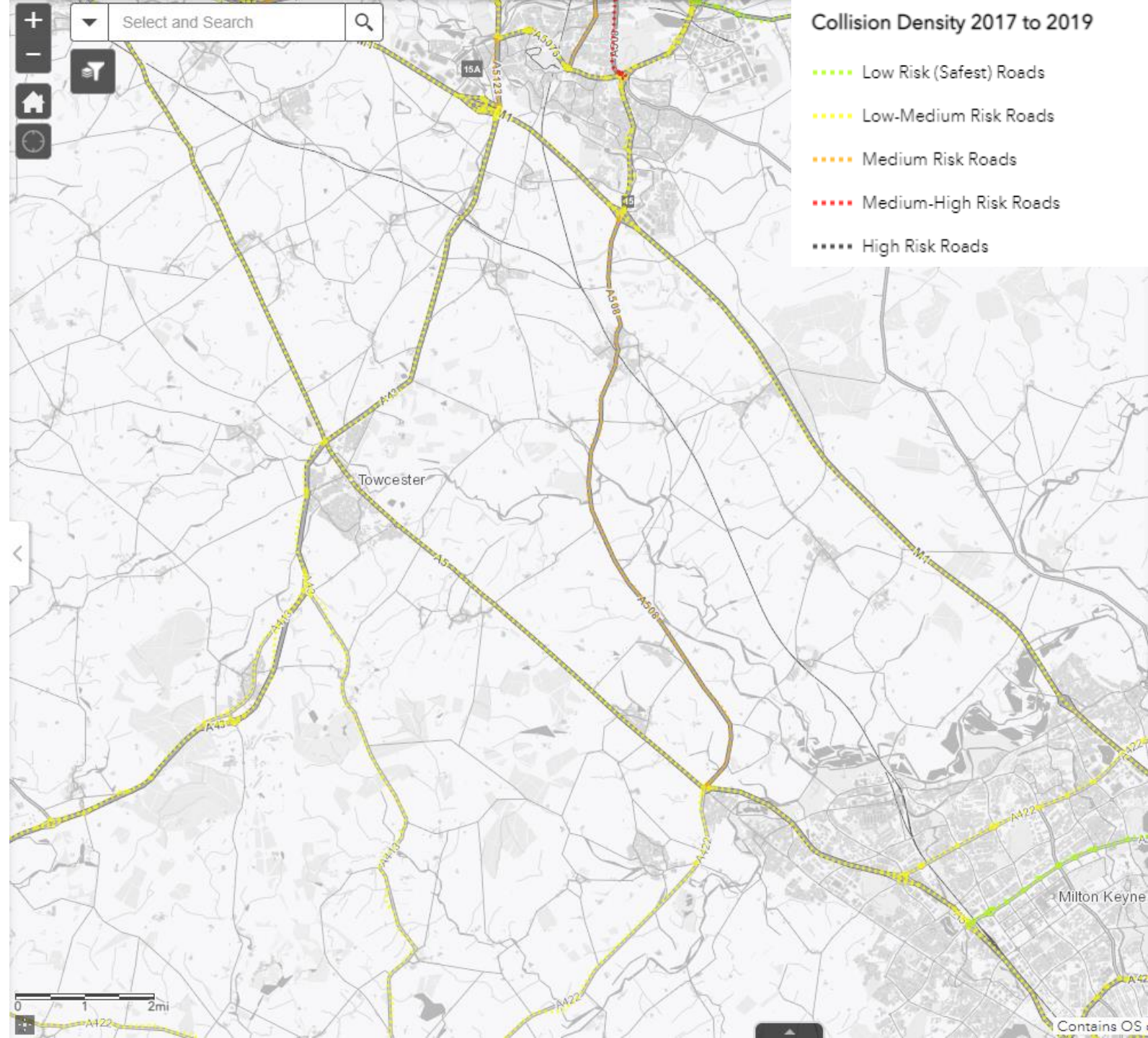
- Automated
 - Road Number
 - Proximity



Density vs Risk

Density

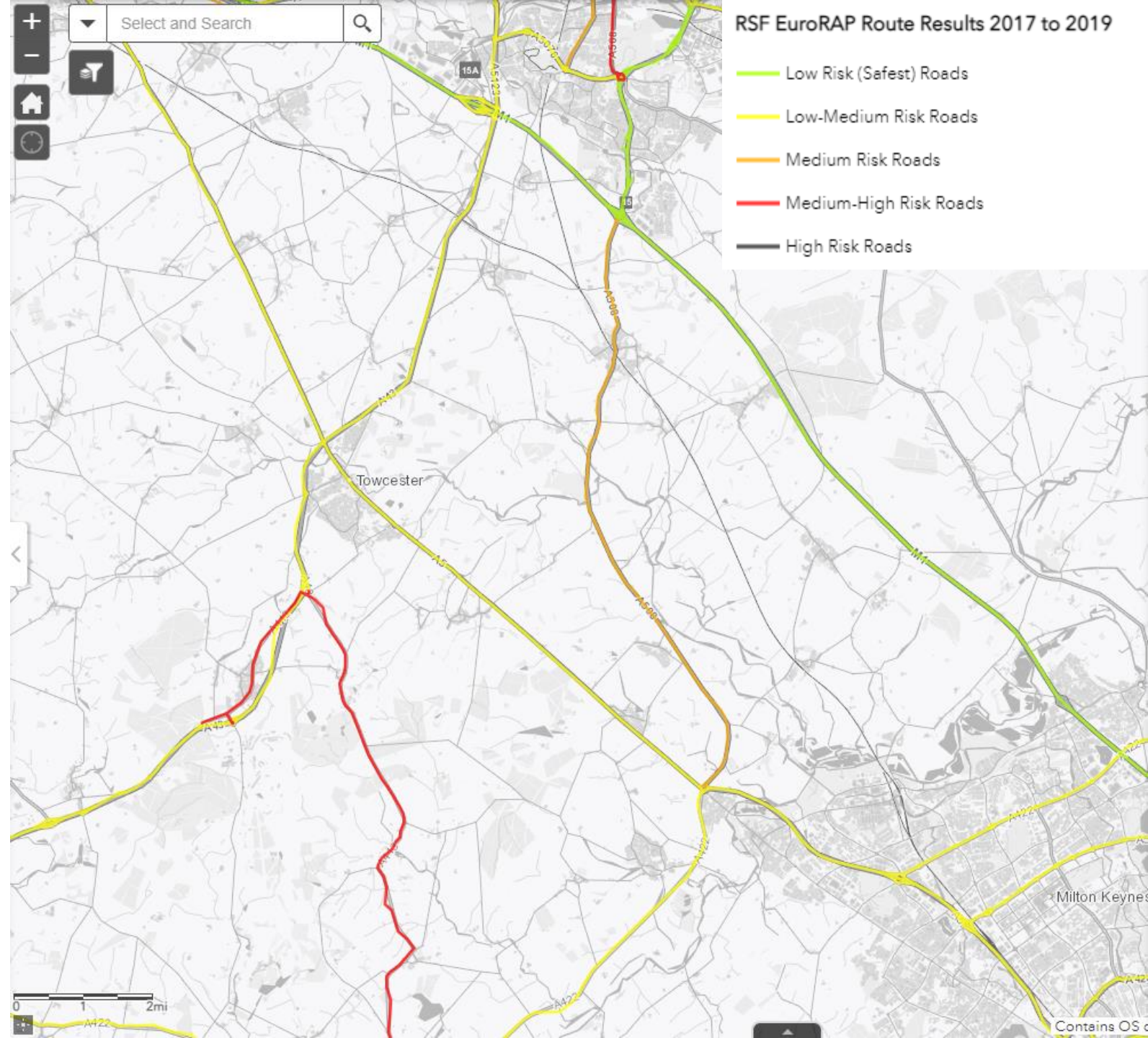
- Collisions per Km / Year
- KSI / All
- Road User Group
 - Motorcyclists
 - Cyclists
 - Pedestrians
- Collision Type
 - Speed
 - Fatigue



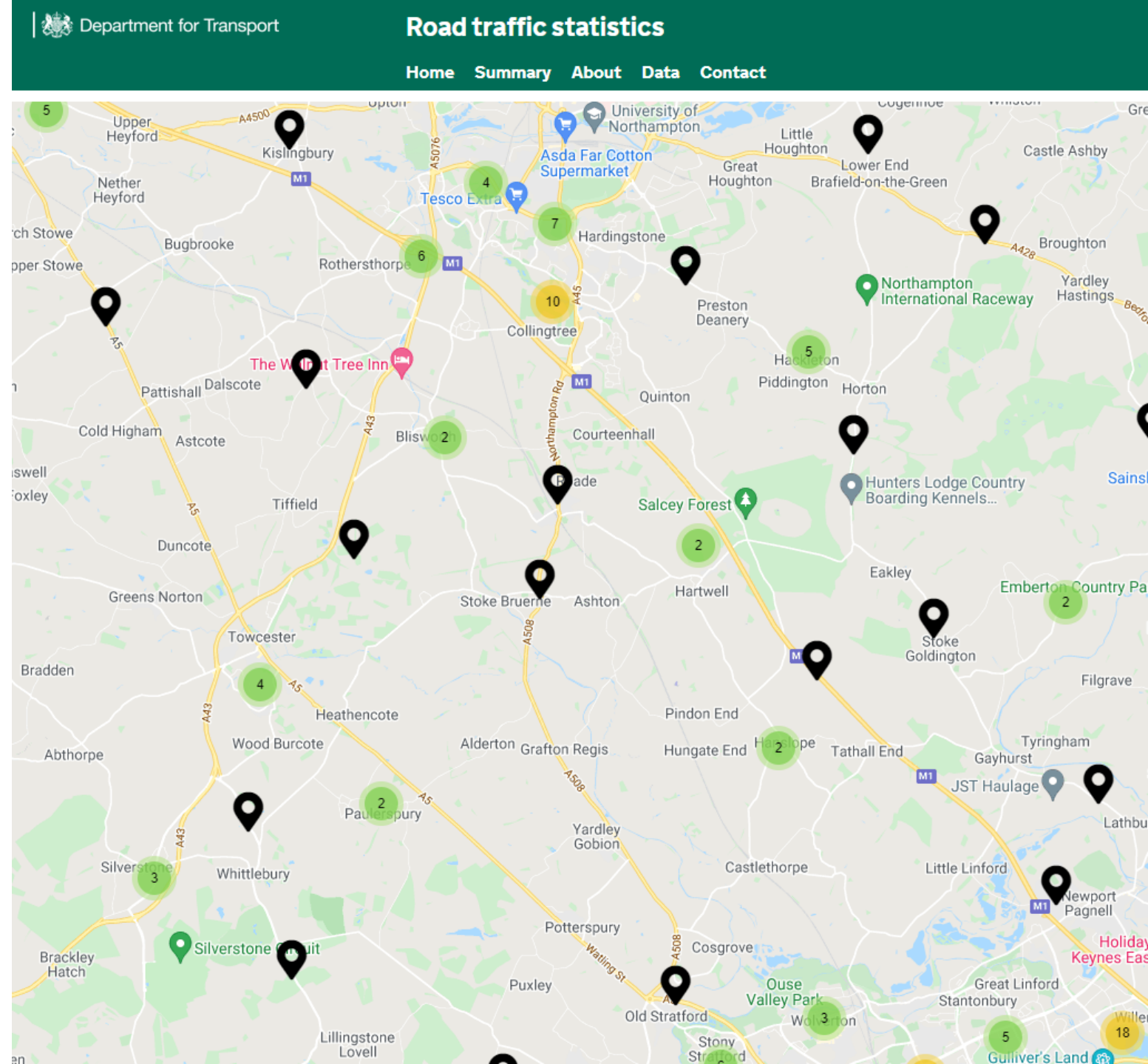
Density vs Risk

Risk

- Collisions per MvKM / Year
- KSI / All
- Requires AADT for Routes
- Road User Group
 - Motorcyclists
 - Cyclist
 - ~~Pedestrians~~
 - HGV



Density vs Risk



Density vs Risk

Manual count point 7224

[View count point profile](#)

Region: [East Midlands](#)

Local authority: [Northamptonshire](#)

Road classification: 'A' road

Road: A508



About this data

All data used to make this map is available for download as .json and .csv formats.

Download the data

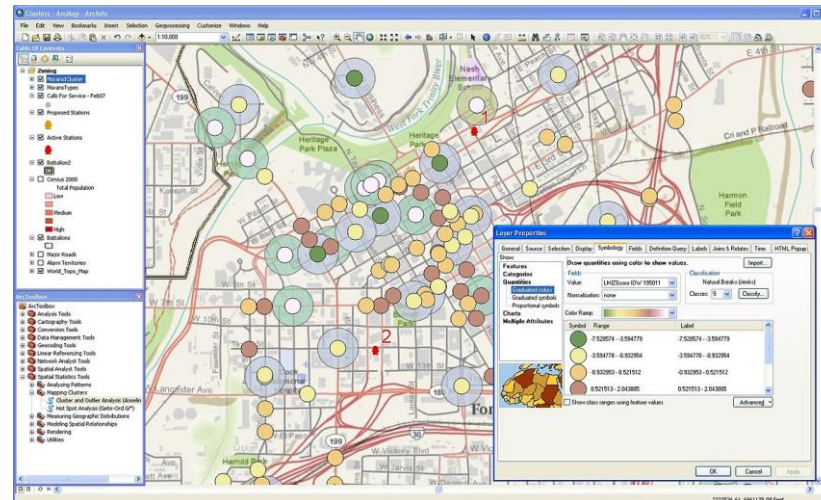
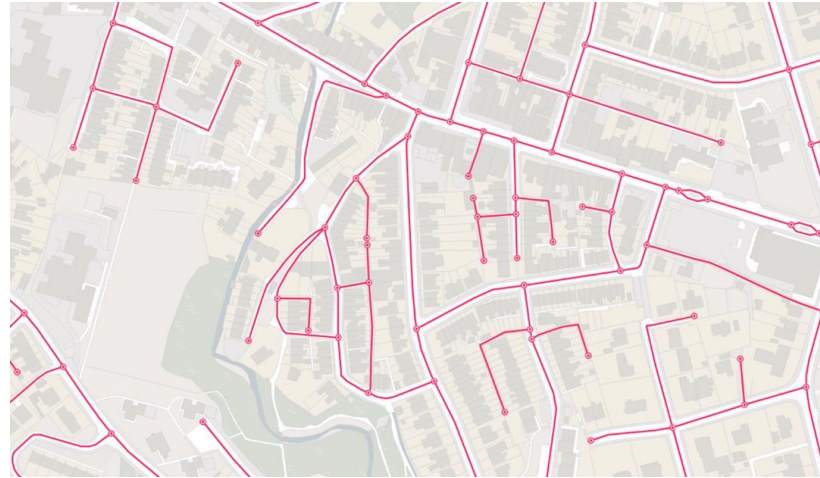
Download [Count point 7224 data](#).

Annual Average daily flow

| Year | Count method | Pedal cycles | Two wheeled motor vehicles | Cars and taxis | Buses and coaches | Light goods vehicles | Heavy goods vehicles | All motor vehicles |
|------|---|--------------|----------------------------|----------------|-------------------|----------------------|----------------------|--------------------|
| 2020 | Estimated using previous year's AADF on this link | 15 | 131 | 10046 | 58 | 1820 | 1096 | 13151 |
| 2019 | Manual count | 12 | 176 | 13756 | 91 | 2126 | 1225 | 17375 |
| 2018 | Estimated using previous year's AADF on this link | 6 | 83 | 12241 | 81 | 2539 | 1045 | 15988 |
| 2017 | Estimated using previous year's AADF on this link | 6 | 85 | 12300 | 85 | 2424 | 1024 | 15917 |
| 2016 | Estimated using previous year's AADF on this link | 6 | 87 | 12315 | 87 | 2291 | 997 | 15777 |
| 2015 | Estimated using previous year's AADF on this link | 6 | 87 | 12164 | 89 | 2121 | 963 | 15424 |
| 2014 | Estimated using previous year's AADF on this link | 6 | 84 | 11808 | 90 | 1908 | 913 | 14803 |
| 2013 | Manual count | 8 | 81 | 11542 | 80 | 1778 | 911 | 14393 |

How can you do this yourself?

- Map
- Data
- Software
- Skills



MG NSR/FIA

Incident URN

Other ref.

ACCIDENT STATISTICS

*FATAL / SERIOUS / SLIGHT

1.3 ACCIDENT REFERENCE

1.9 TIME DAY* 1.7 DATE

1st Road Class & No. or (Unclassified - UC) (Not Known - NK) 1st Road Name

Outside House No. at junction with / or metres * of

2nd Road Class & No. or (Unclassified - UC) (Not Known - NK) 2nd Road Name

Town Sector / Beat No.

County or Borough

Parish No. or Name 1.10 Local Auth No. (if known)

1.11 Grid Reference

REPORTING Name Number

OFFICER 1.2 Force Tel Number



Examples

- National Express
- Safety-focussed organisation
- Wanted more informed risk management for route planning
- 50+ local teams



National Express Demo



Examples

- Agilysis Road Network & RiskMap
- Analysable network using OS Open Roads
- STATS19 & DfT Count Point data
- Data + Online software



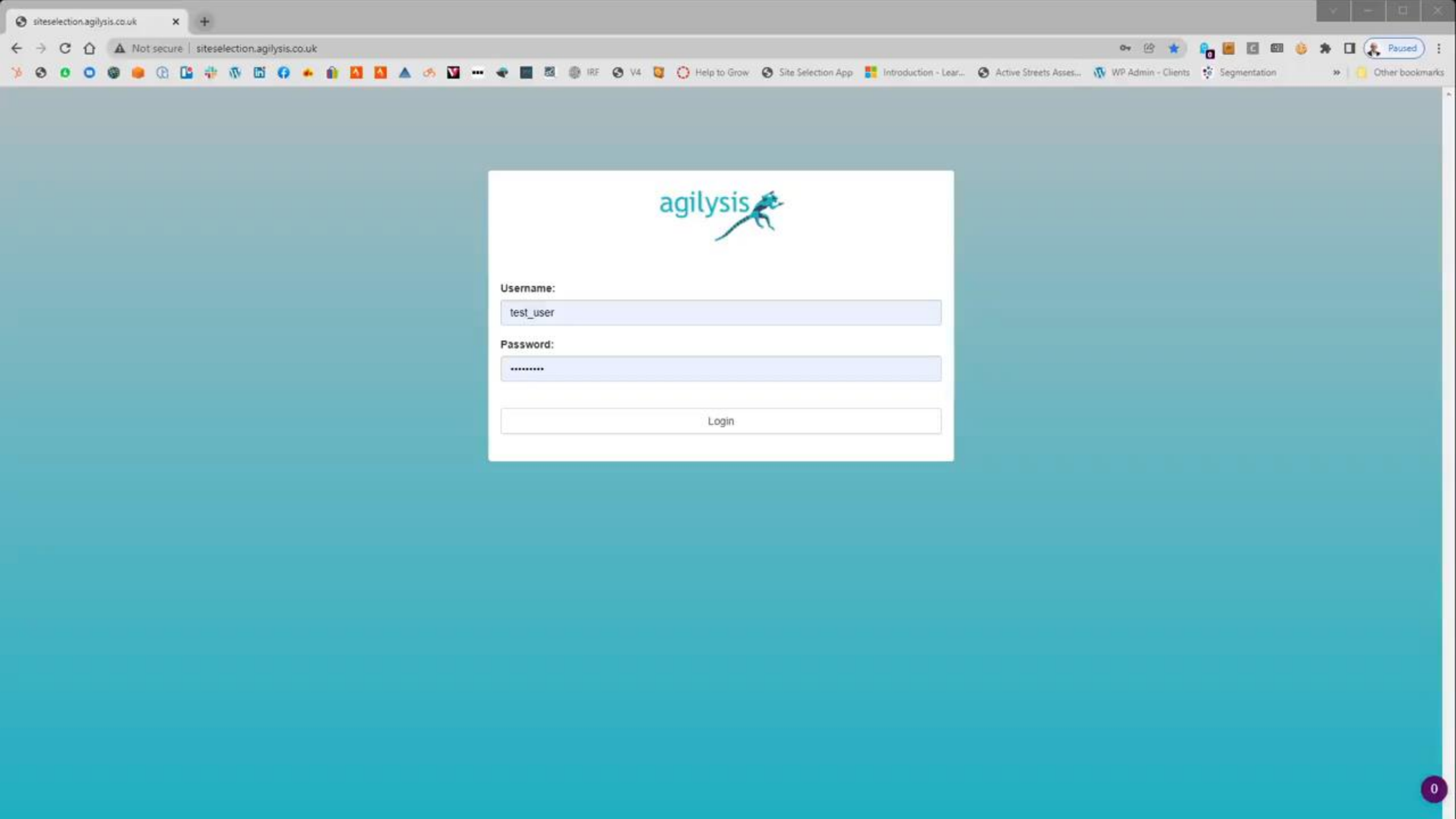
ARN & RiskMap Demo

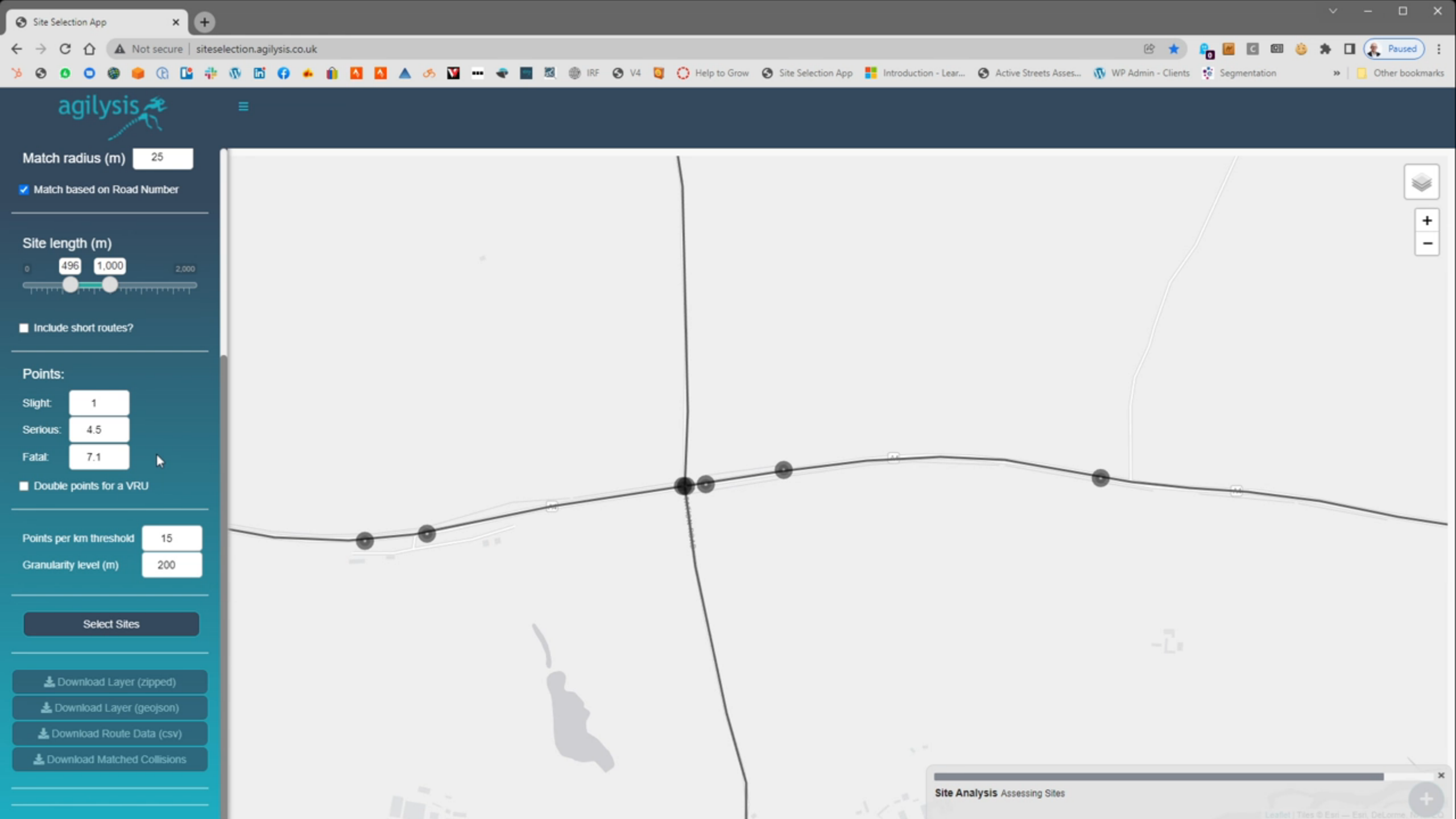


But what about clusters and hotspots?

- Is route analysis always the best approach?
- Needs more location specific analysis too
- Safety Camera site selection criteria







Accessing Agilysis Tools

- Riskmap - £2,500 per authority per update
- Site selection tool - £1,500 per year



Q&A

- Do you want to mentions techniques and methods you use?
- What other data are there?
- How to interpret and implement results?
- What barriers are there internally to this kind of work?
- Is this a high or low analytical priority?

