

# Data Sources

The data available in the Active Streets Assessment Tool is gathered from a number of sources, which are outlined below.

## Network Data

Ordnance Survey have provided the underlying spatial layer, from the OS Highways Road Link layer. This has been enriched with:

- Speed limit (*mph*);
- Average and minimum carriageway width (*m*);
- Gradient (%);
- Road class;
- Form of way; and
- Road number.

Basemap has provided vehicle counts from telematics data, which has been adjusted to provide a modelled AADF value which better aligns with the DfT count point data. This has been provided alongside average vehicle speeds (*mph*) and 85th percentile speeds (*mph*) for:

- AM peak (*7am to 9am, Monday to Friday*);
- PM peak (*4pm to 7pm, Monday to Friday*);
- Off peak (*10am to 4pm, Monday to Friday*);
- Evening (*7pm to 11pm, every day*);
- Night (*midnight to 4am, every day*); and
- Weekend (*7am to 7pm, Saturday and Sunday*).

Average speeds have been used in conjunction with data on the posted speed limit to provide the average speeds over the limit for these periods. Furthermore, congestion indices are calculated as:

- **Congestion Index (AM)** - *the ratio between AM peak average speeds and free flowing (night time) average speeds, as a 100-based index;*
- **Congestion Index (PM)** - *the ratio between PM peak average speeds and free flowing (night time) average speeds, as a 100-based index;* and
- **Congestion Index** - *the (geometric) average of the AM and PM congestion indices.*

A high Congestion Index of, for example, 200 would indicate that free-flowing speeds are, on average, twice as high as peak speeds, and therefore we would consider the road segment to highly congested. Whereas a congestion index closer to 100 would indicate that, on average, peak speeds are similar to free-flowing speeds and therefore there is a low level of congestion. The average congestion index for a road segment is around 130, meaning that free flowing speeds tend to be around 30% higher than peak speeds. So these indices can be interpreted as follows:

- A congestion index around (or less than) 100 means *peak speeds are free flowing, and the road experiences no congestion;*
- A congestion index around 130 means *peak speeds aren't quite free flowing, but experience the average level of congestion for a road;* and

- A congestion index noticeably over 130 means *peak speeds are much lower than free flowing speeds, and the road is heavily congested.*

STATS19 collision data has also been matched to the road network to provide:

- Number of collisions;
- Number of pedestrian collisions;
- Number of pedal cyclist collisions;
- Collision density (*per km*);
- Pedestrian collision density (*per km*); and
- Pedal cyclist collision density (*per km*).

### Community Data

Socio-demographic data on communities is also included in the Active Streets Assessment Tool, at the level of Lower Super Output Areas (LSOAs).

Data from [CACI's Acorn Geodemographic Segmentation](#) of communities has been used to provide insights into community attitudes and behaviours. Many of these are expressed as percentages of households, including:

- Car ownership (*No Cars Owned/Single Car Owned/Multiple Cars Owned*);
- Main car fuel type (*Main Car Electric/Main Car Hybrid/Main Car Traditional Fuel*);
- Mileage (*Drive Under 5,000 Miles Per Year*);
- Environmental opinions (*Value Environmentally Friendly Car/Self-Described Environmentalist/Do Not Care About Carbon Footprint*); and
- Cycling as a Hobby.

This data also includes:

- Monthly Commute Cost (£); and
- Percentage of workers by commute mode (*Work from Home/Active Travel Commutes/Public Transport Commutes/Private Motor Veh Commutes*).

Alongside Acorn data, data has been taken from the 2011 census to calculate the proportion of commutes that are primarily done by:

- Car;
- Public transport;
- Walking; and
- Cycling.

Population estimates from ONS are also used to provide population density levels for LSOAs.

Modelled Air Quality (AQ) data from DEFRA has been included across 1km grid squares. A technical report on the modelling used to obtain the data can be found [here](#). This includes annual average data on seven common pollutants:

- Particulate matter (*PM<sub>10</sub> and PM<sub>2.5</sub>*);
- Nitrous Oxides (*NO<sub>2</sub> and NO<sub>x</sub>*);
- Sulphur Dioxide (*SO<sub>2</sub>*);

- Ozone (measured as the number of days on which the daily max 8-hour concentration exceeds  $120 \mu\text{g m}^{-3}$ ); and
- Benzene.

### Additional Layers

Schools have been plotted in the Active Streets Assessment Tool, which are taken from the DfE published dataset.

An additional layer is included to show the [Space Syntax OpenMapping Choice](#) layer at the 2km level. This layer is indicative of where pedestrian movement is likely to be higher. For more information, see [github.com/spacesyntax/OpenMapping](https://github.com/spacesyntax/OpenMapping).

### Basemaps

The Active Streets Assessment Tool has a variety of basemaps available:

- **Esri.WorldGrayCanvas** – The default basemap, which makes roads and LSOAs easier to see. It does, however, have a more limited zoom level than other basemaps;
- **Esri.WorldImagery** – A basemap of satellite imagery provided by ESRI;
- **OpenStreetMap** – The open source Open Street Map basemap (*key available at <https://www.openstreetmap.org/key>*);
- **OpenStreetMap.HOT** – A variation on the Open Street Map basemap with slightly softer colours (*key available at <http://map.hotosm.org/>*);
- **CyclOSM** – The Open Street Map cycle infrastructure basemap (*key available at <https://www.cyclosm.org/legend.html>*);
- **Thunderforest.OpenCycleMap** – The Thunderforest cycle infrastructure basemap (*key available at <http://www.opencyclemap.org/docs/>*);
- **Thunderforest.Transport** – The Thunderforest public transport basemap.