AECOM Noise and Air Quality Screening Tool

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Roadside Screening Tool

Aligns air quality and noise at the strategic level, where the links are most viable.

– Uses strategic traffic flow data

– Identify high roadside noise levels and pollution concentrations

– Informs and prioritises further study

– Utilitises existing data:
  • Emissions modelling
  • Population and health indices
  • GIS presentation tools

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# Roadside Screening Tool

The tool will complement simple emissions models.

The outputs from large-scale source apportionment studies can be enhanced by sifting with simple commands and profiles.

CAZ SCENARIO 1: 100% EURO 6 COMPLIANT CARS

CAZ SCENARIO 2: 100% EURO 6 COMPLIANT LGV

CAZ SCENARIO 3: 100% EURO VI COMPLIANT HGV

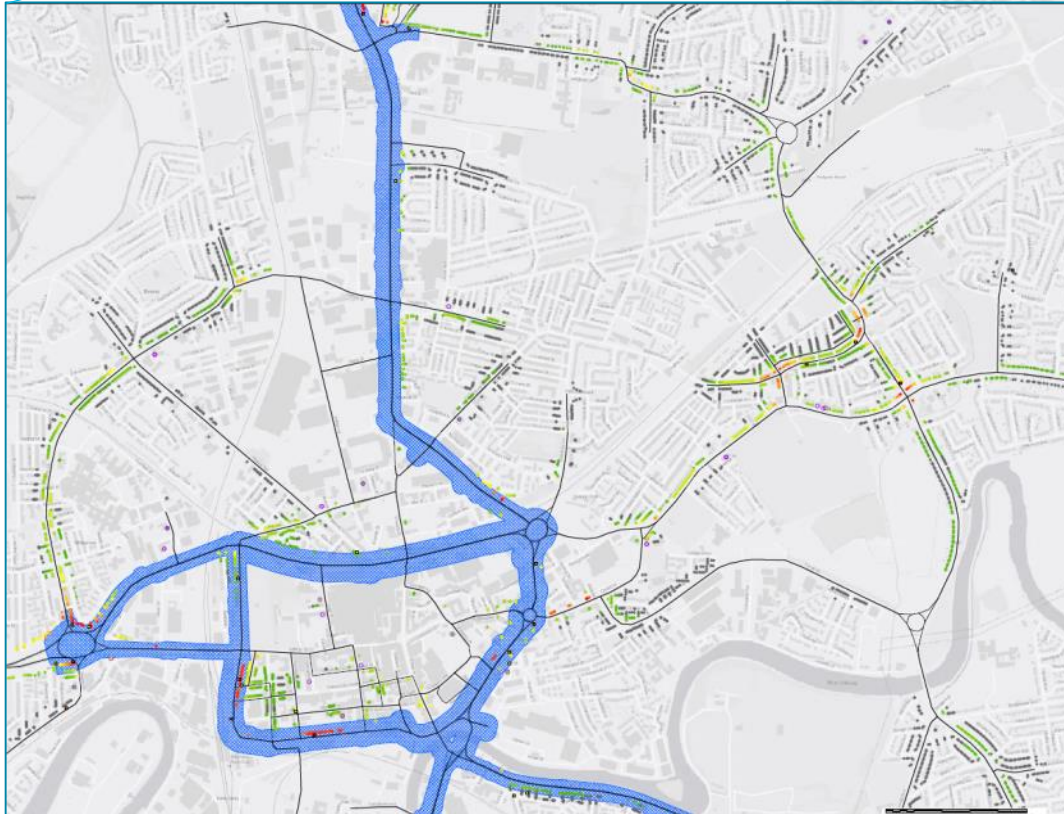CAZ SCENARIO 4: 100% EURO VI COMPLIANT BUS
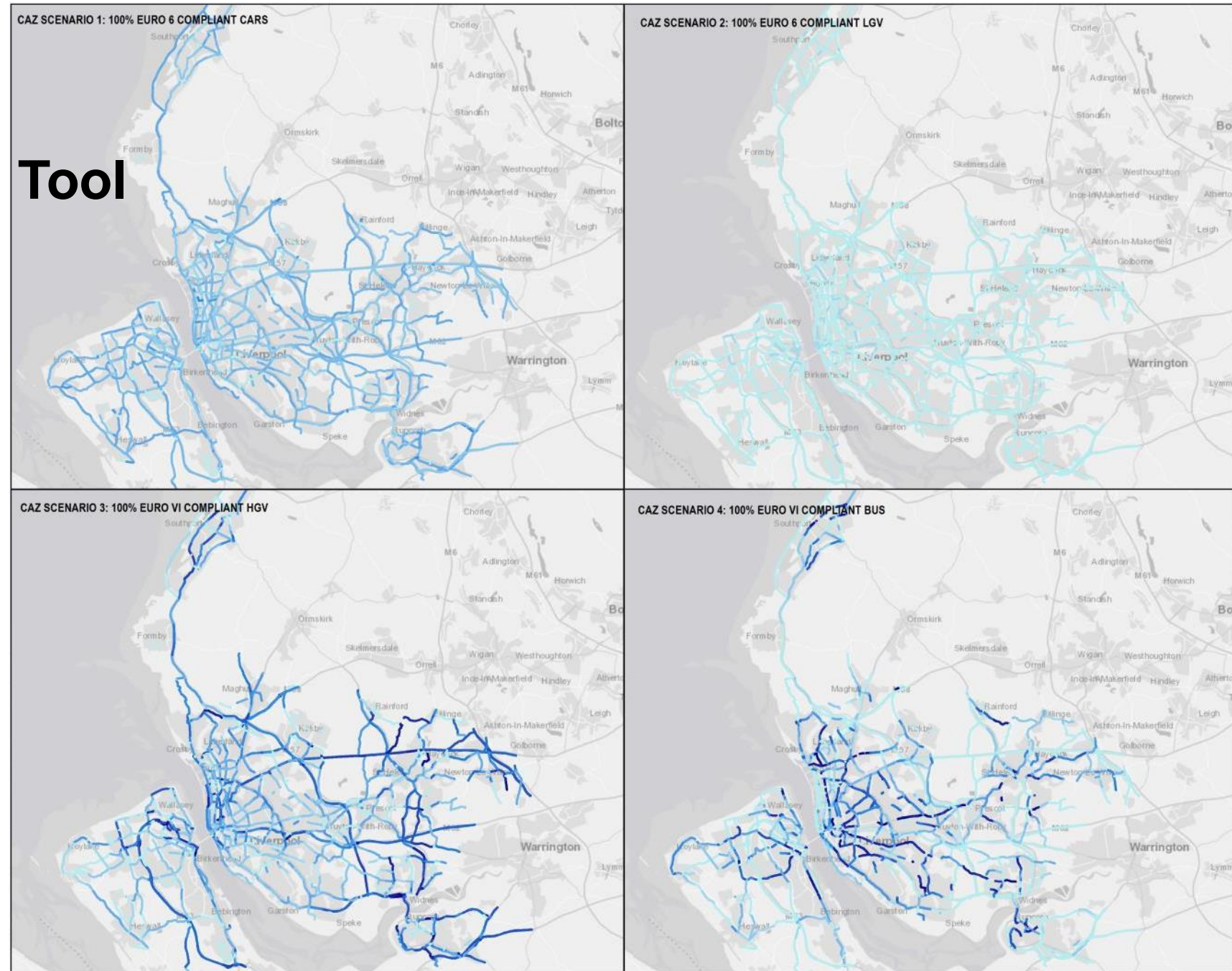
Model Verification

Verifies within ~20% at kerbside monitoring locations

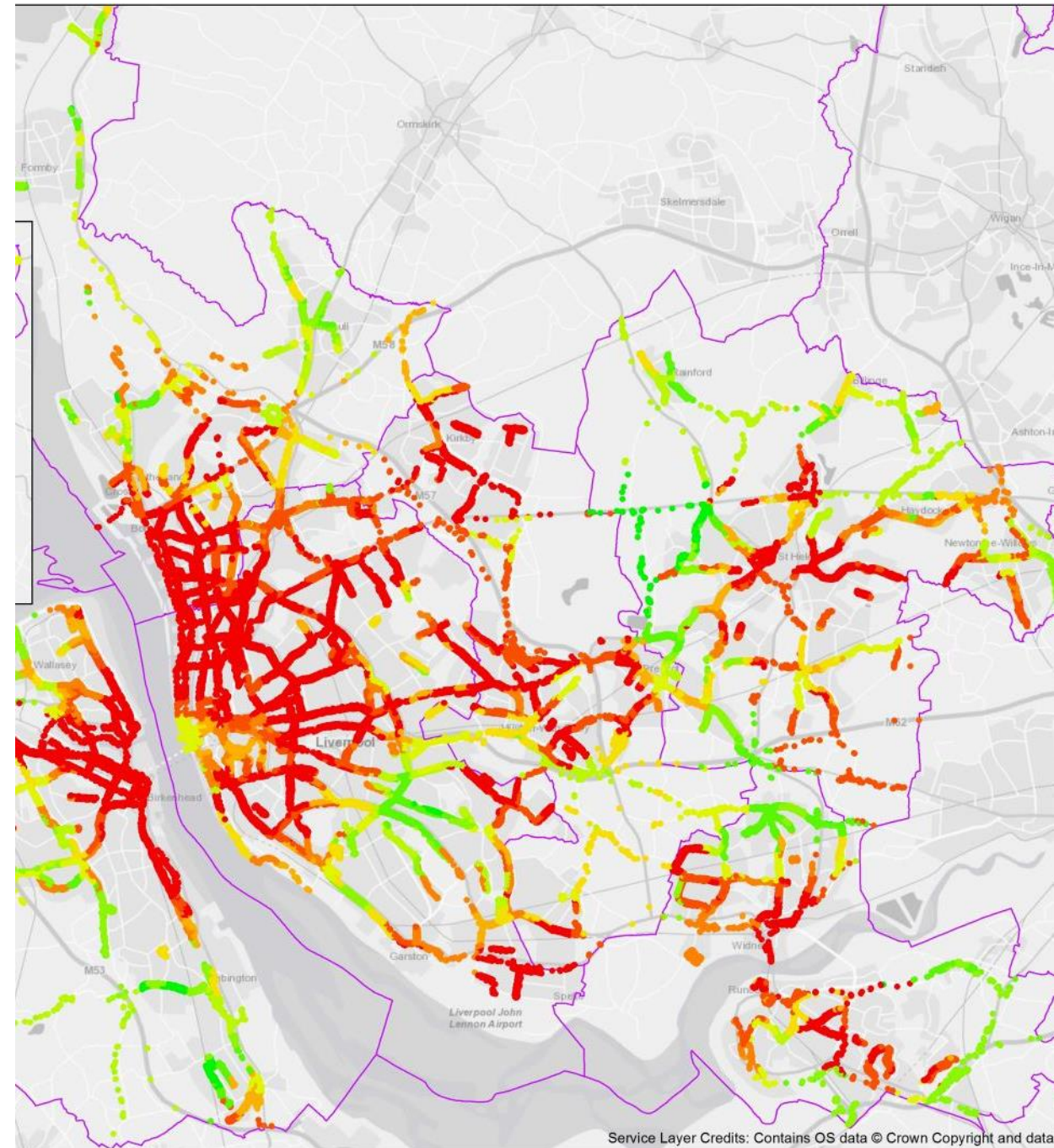Consistent with LAQM.TG(16) thresholds

AECOM
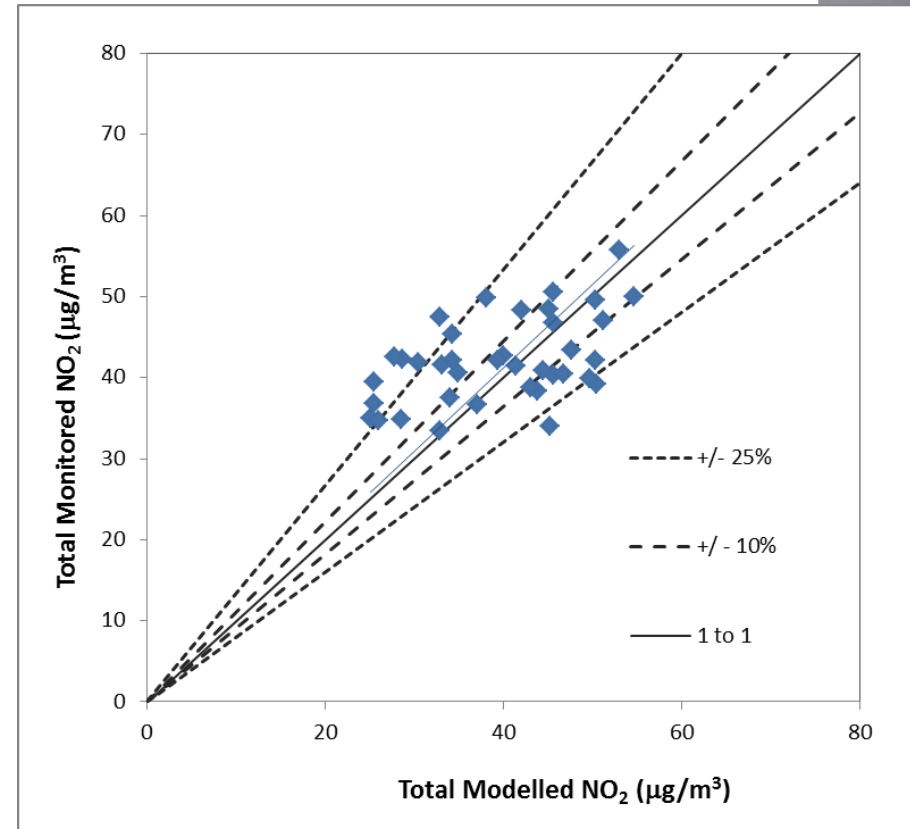
Informing Detailed Studies
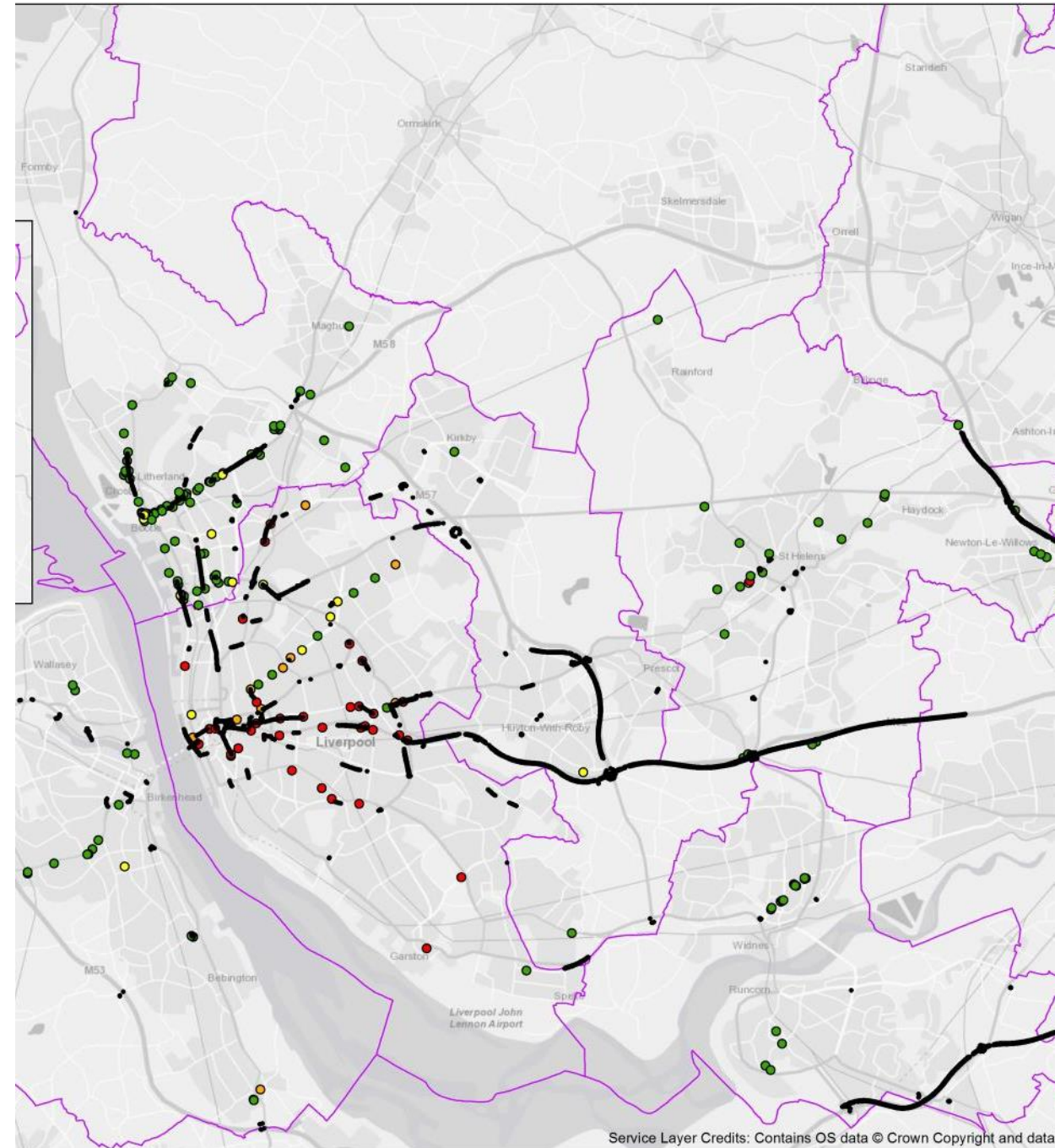
1. Population data

Indices of Multiple Deprivation (IMD) can be used with population data to identify sensitive locations near modelled links.

2. Roadside pollution

Road links with high roadside pollution concentrations are sifted.

Those links in proximity of properties can be identified.

3. Impacted residents

Road links with high roadside pollution concentrations are sifted.

Those links in proximity of properties can be identified.

The properties adjacent to those links are sifted with reference to the IMD to prioritise the most significant roads for further Actions.

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Service Layer Credits: Contains OS data © Crown Copyright and data
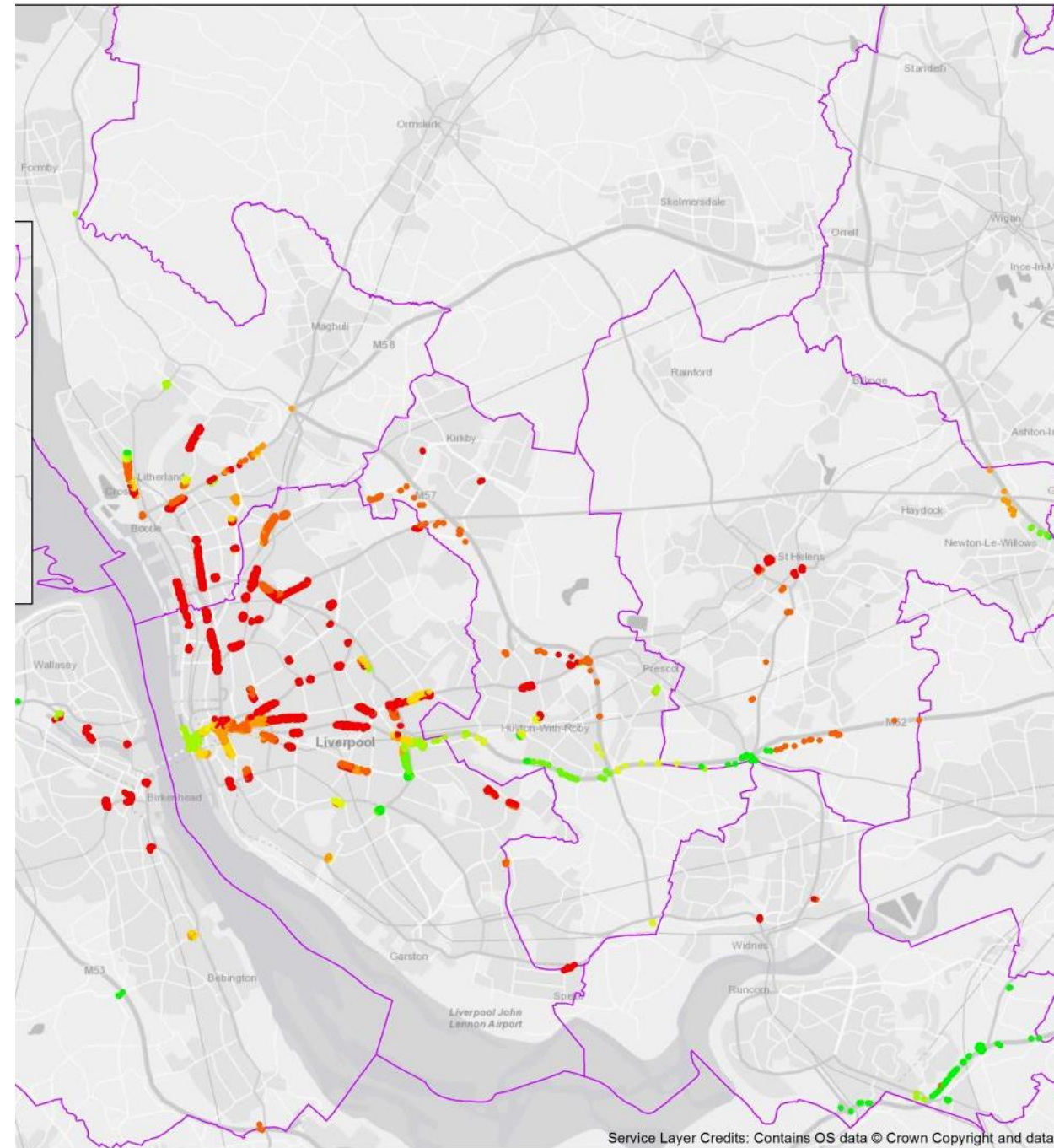
Noise

- Basic noise level (CRTN)
- Free-field, 10m from road edge
- 18hr (0600-2400) AAWT preferred but 24hr AADT will give an idea of trends
- Quick to produce
- Monitoring could help validate but CRTN is quite robust at such distances

Noise, LA$_{10}$ $_{18\text{-}hour}$

|	
	54.0 - 57.0
	57.1 - 60.0
	60.1 - 63.0
	63.1 - 66.0
	66.1 - 69.0
	69.1 - 72.0
	72.1 - 75.0
	75.1 - 78.0
	78.1 - 81.0
	81.1 - 84.0

First Issue — DM / DE — 07/06/17 — P01
Revision Details — By / Check — Date — Suffix

Purpose of Issue

FOR INFORMATION

Project Title

**LIVERPOOL CITY REGION
AIR QUALITY**

Drawing Title

**ROAD TRAFFIC NOISE
LEVELS AT 10M**

Designed	Drawn	Checked	Approved	Date
DM	DU	TS	TS	19/02/2018

Internal Project No.	Suitability
60547444	

Scale @ A3	Zone
1:140,000	

AECOM

Rev
P01

1	0	1	2	3	4 Kilometres

Presentation and Visualisation

Enhances the value of novel use of existing tools and services to increase efficiency and speed:

- Georeferencing road networks
- Creating buffers and receptors
- Automating calculations for road gradients
- Automating identification of street canyons

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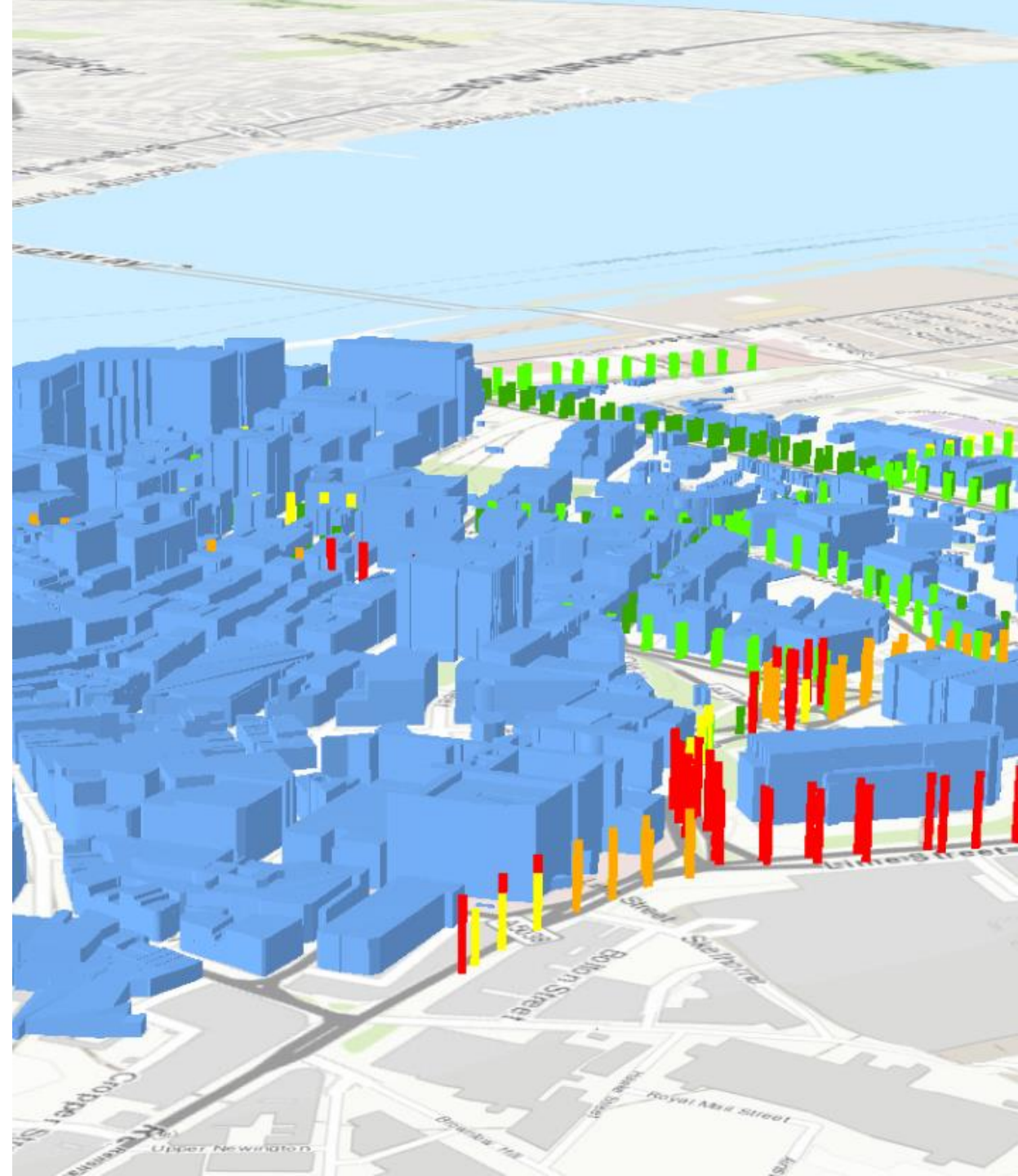
Summary

The deliverables and opportunities for this may include:

- Prioritising areas for further assessment
- Indicating baseline conditions in the absence of further data
- Responding to client requirements with minimal cost / time implications
- The approach makes efficient use of existing data, such as regional Saturn models and population indices for LSOA

With regard to the Welsh guidance and linking noise and AQ:
- This is a high-level approach that supports further detailed work using recognized tools and methods
- It is more suited to strategic or regional assessment, and less-so for local assessment where the differences between AQ and noise are apparent.