Improving the assessment of roadside litter
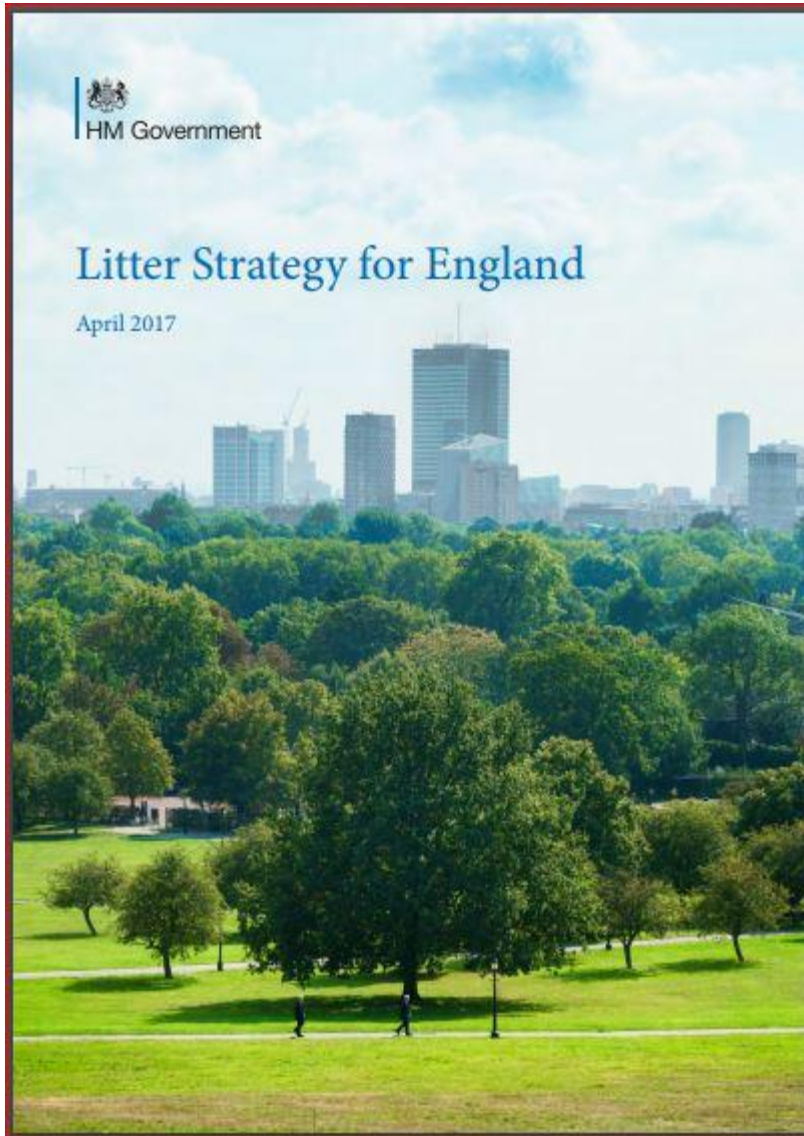
Tim Ashelford

Data Transformation Programme, Defra.

Background

Litter Strategy for England
April 2017

- HMG Litter Strategy

- *"Government will commission and publish an independent assessment of road cleanliness and publish cleanliness reviews by authority. We will then set a deadline for underperforming authorities to improve their performance within this Parliament.*

- *We also propose to reallocate responsibility for managing relevant cleaning activities from any local authority that is not fulfilling its statutory duties on the road network'.."*

- Roadside litter is a particular concern, especially where it occurs on major trunk roads as these are considered the 'gateways' to England's key economic areas. They often have high volumes of traffic and run through urban and rural areas, making litter disproportionately visible to users.

ITV REPORT   13 January 2018 at 11:48am

Rubbish roads: who's to blame for litter on verges?

Roadside litter
Photo: Press Association

Data Requirement

- Scope – English Trunk Roads cleaned by local authorities (>7000km).

- Data for every LA with a trunk road.

- Survey winter when vegetation does not obscure litter.

- Use established classification…..

Classification approach.

GRADE A - no litter or refuse

Click image to enlarge

GRADE B - predominantly free of litter and refuse except for some small items

Click image to enlarge

GRADE C - widespread distribution of litter and refuse, with minor accumulations

Click image to enlarge

GRADE D - heavily littered, with significant accumulations

Click image to enlarge

An established methodology (Local Environmental Quality Survey for England) for surveying in 50 meter transects and classifying the road from A no litter, to D heavily affected.
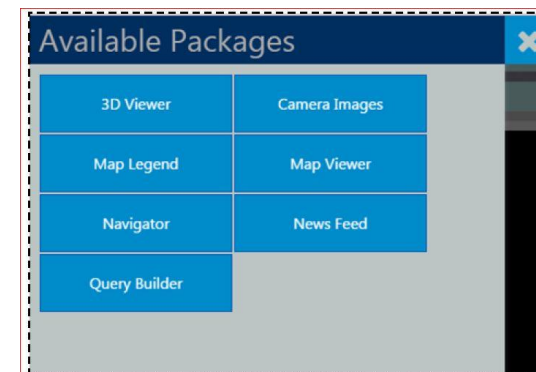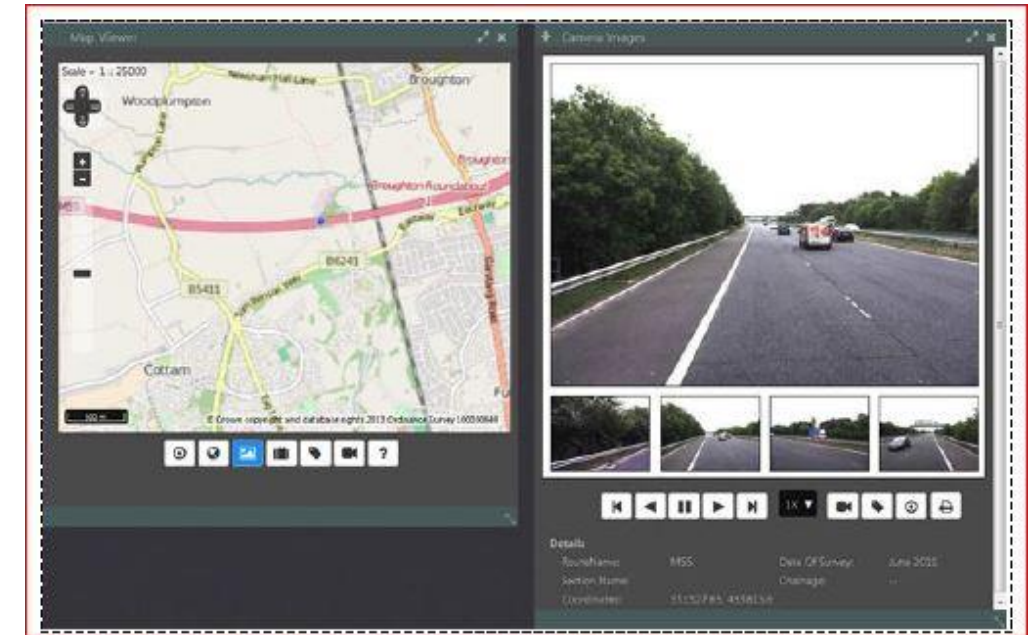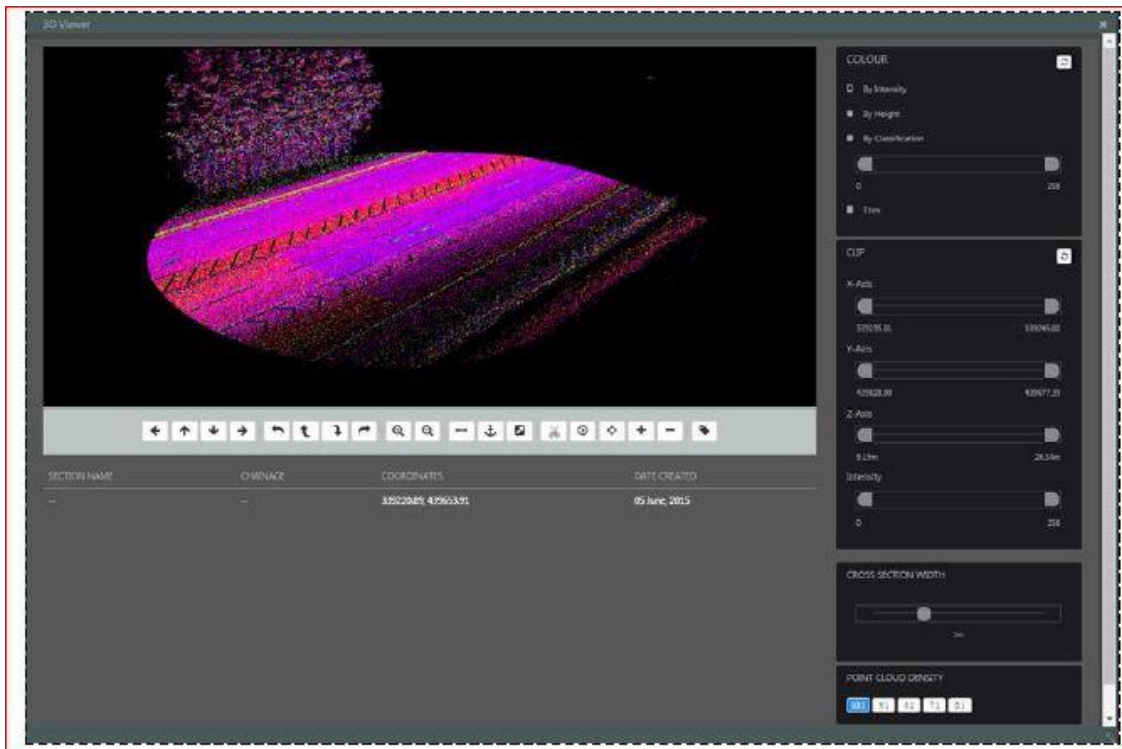
Traditional approach is a manual visual survey. Expensive and potential safety issues.

Highways England Asset Visualisation & Information System (AVIS)

AVIS

- Up to date imagery of entire strategic road network
- LiDAR point cloud of entire strategic road network
- Web based system

Next steps

- We are working on a data sharing agreement with HE to allow access to AVIS data. Already EA/HE MOU to share data to manage flooding on trunk roads.

- Could computer vision be used with AVIS data to classify roadside cleanliness?