

## Appendix B - Highways Asset Condition Surveys

Highway asset condition surveys and inspections carried out in Rutland

Carriageways	Machine based surveys	Frequency
	<b>SCANNER (Surface Condition Assessment for the National Network of Roads)</b> – A driven survey with lasers to identify defects in the carriageway i.e. potholes rutting, cracking, areas where the surface is deteriorating and processed by 'on-board' computers. It produces a Road Condition Indicator (RCI) and it allows the deterioration on one section of road to be compared with another. It produces a prioritised listing of different lengths of carriageway for the highway engineer to amalgamate into schemes and treatments such as surface dressing, patching, resurfacing and proprietary products.	Annual
	<b>Sideway-force Coefficient Routine Investigation Machine</b> – Measures the wet skid properties of the carriageway with a priority on bends and at junctions. Through a series of investigatory levels determines whether some form of intervention is required. These may be a resurfacing, a high skid resistance material or skid warning signs. The highway engineer reviews the outputs of the investigation and prioritises any treatments.	Annual
	<b>Visual Inspections</b>	
	Highway inspectors undertake regular carriageway inspections to identify defects requiring reactive interventions, roads needing proactive programming of patching and other maintenance functions. This information is also used to repudiate insurance claims with evidence that the authority is doing everything practical to keep the network safe.	Monthly to annual, depending on classification or road
	<b>GAIST Visual Inspection survey</b> – GAIST is a company specialising in supporting local authorities in managing highway assets. Their survey consists of them taking a high definition video of the whole highway network from a moving vehicle. This is then processed by a specialist team of surveyors who review the video and identify defects to the carriageway such as potholes, areas of deterioration and cracking. They are less able to identify rutting and some other defects. The GAIST visual inspection data is added to the SCANNER and SCRIM data and via a series of algorithms gives the carriageway network ratings of between 1 and 5 (5 is bad) it also gives the percentage of the section at the condition rating. The condition ratings are combined giving each section	Annually

	an overall condition rating. The output allows the highway engineer to assign appropriate length schemes and treatments allocated to the carriageway network.	
<b>Footways</b>	<b>Footway Network Survey (FNS)</b> - This is a visual condition survey for footways and is undertaken systematically to all the footways to identify the main defects (potholes, cracking and other defects). This gives each section a condition rating and allows the highway engineer to prioritise the worst sections for treatment.	Not undertaken, footways are inspected during the road inspection by the inspectors
<b>Structures</b>	Highway structures are generally bridges and culverts over 1.0 m in diameter, retaining walls and the like. They may be a can be a proper bridge or just a large preformed pipe, which may be circular in diameter or a 'box culvert'. Irrespective they are treated in the same way and are the subject of a structural general inspection (annual) which is a general check on its condition, what may have deteriorated since the last inspection. There is also a structural principal inspection (every 6 years) and is a detailed inspection of the structure, and may require physical checks, and detailed investigations. The output of each are written up as structural reports and reviewed by a competent bridge engineer. It set out the recommended proactive maintenance work, the reactive maintenance work and, any structural deficiencies which may need short term traffic restrictions and any structural maintenance work necessary to restore the integrity of the structure. Leicestershire County Council structures team provides help and support for the management of our structures.	Principal – 6 yearly General – annually
<b>Street Lighting</b>	All street lighting columns are the subject of a visual inspection when an operative attends site to affect any repair. This will identify any visual defects associated with the column and if any action is needed. This information should be held against the column on the highway asset management database and used to determine a column replacement programme. Additionally, there are a series of structural and column wall thickness tests all designed to provide condition data. Most of these are expensive and are part of a long-term programme.	Visual when fault has been reported, others not used on a preventative basis

<b>Traffic Signals</b>	The main traffic signal assets are the signal posts and the equipment cabinets. As with streetlights, these are the subject of visual inspections when operatives visit site, but as faults are generally few and far between, the proxy condition survey is using the age of the assets and of the traffic signal systems. Modern signal systems include self-diagnosis for faults and traffic flow smoothing to allow for peaks and troughs in traffic. Leicester City Council's traffic control team provide support and advice to Rutland for all traffic and pedestrian lights.	When faults have been detected.
<b>Traffic signs, lines and studs</b>	The most effective method of inspection of traffic signs and lines and road studs is from a driven survey by the highway inspectors during the day and at also night to determine the extent of the observed condition of each at the different times of the day. Signs should be reflective at night, be clean and may be obscured by trees and hedges. There are a number of technologies being trialled to collect condition data, including the use of artificial intelligence, to capture asset data, however these can be expensive and are subject to an amount of data sorting post inspection and prioritisation. Generally, the replacement of these assets is from the revenue budget, unless it's a part of a larger scheme.	As part of the visual inspection, of the carriageway
<b>Highway drainage</b>	Highway drainage consisting of road gullies, offset kerbs (the hole in a kerb for water disposal). Beeny Blocks (a series of holes in the kerb where the water flows away), grips (channel cut in rural verges) pipes and outfalls. It is the highway asset with the least inventory data that has been collected and its condition is also least known. The main flood areas are those where we have captured some drainage inventory and condition data. This information is used to prioritise sites for improvement with those sites where properties could flood of the highest priority. The highway engineer determines the works programme on a risk-based approach.	Reactive basis

