Nottinghamshire County Council

Environment & Resources Department

HIGHWAY INSPECTION MANUAL

Guidance for Highway Safety Inspections

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1 Introduction

This document is intended as a procedural guide for all employees involved in the inspection of Nottinghamshire's highway network. It covers only highway safety and service inspections (a service inspection is an enhanced safety inspection with additional information recorded on overall condition but does not attempt to address structural condition surveys). This guide is not intended to cover inspections of public rights of way (generally rural footpaths and bridleways) as shown on the definitive map record, street lighting, or tree inspections.

2 The need for Highway Safety Inspections

Under Section 41 of the Highways Act 1980 Nottinghamshire County Council has a statutory duty to maintain a highway maintainable at public expense in a safe and serviceable manner for all types of road user. Neglecting this duty can lead to claims against the County Council for damages resulting from a failure to maintain the highway. Under **Section 58** of the **Highways Act 1980**, the highway authority can use a *"**Special Defence**"* in respect of action against it for damages for non-repair of the highway if it can prove that it has taken such care as was reasonable. Part of the defence rests upon:

"Whether the highway authority knew, or could reasonably have been expected to know, that the condition of the part of the highway to which the action relates was likely to cause danger to users of the highway".

This is where highway authorities have to show that they carry out highway safety inspections in accordance with their policies and national guidance. Highway inspection reports are part of the evidence used to show that the highway authority has acted reasonably.

Section 58 of the Highways Act also says

"*The court shall in particular have regard to …….*

a) *The character of the highway and the traffic which was reasonably to be expected to use it;*
b) *The standard of maintenance appropriate for a highway of that character and used by such traffic;*
c) *The state of repair in which a reasonable person would have expected to find the highway*."

Case history demonstrates that the highway authority must also be recording all customer reports of highway defects, however not all defects which the authority becomes aware of by inspection or customer report need to be repaired. Highways Asset Management System (HAMS) records may also be used as evidence to show that the highway authority has acted reasonably.

This is provided a system of prioritising repairs within the available budgets / resources consistent with the above criteria is in place.

3 Customer Care Policy

All enquiries are logged into the Highways Asset Management System (HAMS) via the Customer Relationship Module (CRM) The system automatically forwards the details to the most appropriate officer for consideration / action and reply.

4 Aims and Purpose & Inspection

The aim of inspecting the highway is to identify and take action to remove those hazards causing danger to highway users. Additionally the process will support the development of programmes, to maintain the asset and keep the highway in a serviceable condition. This is in line with our overall aim of network safety, serviceability, and sustainability.

Highway **Safety and Service Inspections** are undertaken to identify defects that are creating or likely to create a danger or serious inconvenience to users of the network or the wider community. Such defects should include those that will require urgent attention (within a maximum of 24 hours) as well as those where the reduced level of severity is such that longer periods of response would be acceptable, or confirm that no response is needed.

5 Responsibility of persons undertaking Inspections

The person undertaking the inspection is responsible for the accuracy of that inspection and the recorded information. In certain circumstances, that person may be called into Court to substantiate their inspection records. Persons undertaking inspections may also be required to provide information relating to third party claims received and provide statements towards the defence of claims where NCC legal and insurance representatives are involved.

6 Frequency of Highway Safety and Service Inspections

The Nottinghamshire County Council has set its own standards for the frequency of its highway safety and service inspections. These have been approved by Elected Members and take into account national guidelines for the definition highway type, hierarchy and inspection frequencies, issued in the latest Code of Practice for Maintenance Management *"Well Maintained Highways*" (July 2005). The standards are shown in NCC's Highway Network Management Plan (HNMP).

Table 1 – Frequency of Highway Inspections

Highway Type	Hierarchy category	Safety Inspection Frequency	Service Inspection Frequency*
<u>Carriageways</u>			
Strategic route	2	1 month	1 year
Main distributor	3a	1 month	1 year
Secondary distributor	3b	1 month	1 year
Link road (Locally Important Roads)	4a	3 months	1 year
Local access roads (All other roads)	4b	1 year	1 year
<u>Footways</u>			
Prestige Area	1(a)	1 month	1 year
Primary walking route (incl shared use facilities)	1	1 month	1 year
Secondary walking route (incl shared use facilities)	2	3 months	1 year
Link footway	3	6 months	1 year
Local access footway	4	1 year	1 year
<u>Cycleways</u>			
Not remote from Carriageway	A	As CWay	As CWay
Remote from Carriageway / Cycle Trails (when highway maintainable at public expense)	B	6 months	1 year

*Service Inspection – an enhanced safety inspection with additional information recorded on overall condition

It may be necessary to inspect certain highways at a higher frequency than shown above when there are particular hazards, e.g. a highway is deteriorating quickly or a road being used as a diversion route for 1 month or more. Any agreed additional (ad-hoc) inspections will need recording in the Highway Asset Management System.

Each part of the network is assigned a hierarchy which relates to its importance to transportation and usage. This hierarchy is stored in the Highway Asset Management System and records are kept of hierarchy changes. Footway hierarchies are different to carriageway hierarchies and therefore most roads have different hierarchy classification and potentially inspection frequency for carriageway and footway.

The defined inspection frequencies should be maintained in accordance with Table 1.

The Authority will ensure that the routes include the existing highway network and newly adopted highways, where appropriate, are added to the inspection routes.

7 Method of Inspection

DRIVEN

Carriageway Safety Inspections should always be undertaken by **two people** in a suitable vehicle travelling at a suitable speed that will enable adequate recording of defects – (guidance speed is 25mph), one driving and the other inspecting. The driver will not be expected to be actively involved in identifying and recording defects, but will concentrate on ensuring the safe passage of the vehicle. For high speed roads (above 40mph), a dynamic risk assessment should be undertaken by the inspectors to determine whether traffic management is to be provided to enable the inspection to take place safely.

For narrow roads, typically those less than 4m total width, the driven inspection may be carried out in one direction only.

WALKED

Carriageways can be inspected by one person on foot if the person is walking on a footway and can inspect the footway and carriageway at the same time.

All Category 1 and 2 and 3 footways (if there is a footway on both sides of the road) are to be inspected in both directions.

CYCLED

The cycle network (urban and rural) may be inspected by one person on a bicycle, or walked. Cycleways as part of the highway will be inspected as part of the highway inspection.

8 Health and Safety

Inspections must be carried out in a safe manner so as not to endanger staff or the public. **All operations will have a current risk assessment** which must be followed by staff.

9 Information to be Recorded

Each inspection must be recorded against the relevant Street Section in HAMS. As well as any defects found, an assessment of the overall condition of the carriageway and footway must be recorded as part of the annual service inspection. This information will be considered to identify potential preventative maintenance and renewal schemes. When recording inspections using a handheld device it will automatically time and date stamp the inspection. If no defects are present this must be recorded as part of the inspection. The inspection should show the inspector who carried out the inspection. (Inspections must not be carried out in another person's name).

All inspections shall be properly recorded into the Highway Management System and retained by the Authority for future reference.

10 Coverage

A safety inspection should identify and record highway defects such as

- Debris, spillage or contamination on footways, cycleways, carriageways or hard shoulders
- Displaced road studs lying in the carriageway
- Overhead wires in a dangerous condition
- Vandalism, the results of which are likely to endanger the public
- Abrupt level differences in footways, cycleways, carriageways or hard shoulders, the results of which are likely to endanger the public
- Potholes, cracks and gaps in footways, cycleways, carriageways or hard shoulders, the results of which are likely to endanger the public
- Damaged, broken or displaced kerbs representing a safety hazard
- Edge deterioration of the carriageway
- Apparent severe loss of skid resistance of the carriageway
- Missing or defective ironwork and other apparatus that is the responsibility of public utility companies should be directed to the relevant utility company for action as soon as possible, under section 72 of the NRSWA 1991. This should be within a timescale decided by the Inspector to be reasonable and in line with relevant NRSWA Codes of Practice
- Standing water, water discharging onto or overflowing across the highway if present at the time of inspection
- Blocked drains and grips
- Damaged, defective, displaced, missing traffic signs, signals or lighting columns
- Badly worn road markings, missing road studs.
- Dirty or otherwise obscured traffic signals and signs
- NRSWA Defects – contained in NRSWA 1991 Specification for the Reinstatement of Openings in Highways Second Edition 2002
- Bollards and street furniture defects
- Damaged safety fencing, parapet fencing, handrail and other barriers
- Sight-lines obscured by trees, other vegetation, unauthorised signs and other features.

- Overhanging vegetation causing obstruction to pedestrian or vehicular traffic
- Obvious dead trees, or trees with obvious die-back, which could fall on the highway (to be referred to headquarters for specialist advice)

The above list is not exhaustive; the important issue is to ensure the safety and to prevent serious inconvenience to road users and the wider community.

11 Categories of Defect and Defect Category Selection

There are 3 categories of defects, Cat.1, Cat.2 (High) and Cat.2 (Low).

a) Category 1 defects
These are defects that require immediate action to be made safe at the time of inspection, if reasonably practicable. In this context, making safe may constitute a permanent first time repair using modern proprietary repair techniques, displaying warning notices, coning off or fencing off to protect the public from the defect. If it is not possible to correct or make safe the defect at the time of inspection, repairs or other action of a permanent or temporary nature should be carried out as soon as possible and in any case within 1 working day. A temporary repair will be followed up with a permanent repair that will be issued as a separate instruction as per the appropriate defect category.

b) Category 2 defects
Category 2 defects have been categorised according to priority, **high** (**H**) and **low (L).**

- **(i) Category 2 (High)** defects are those that **WILL** become Cat 1 within **3 months** if not attended to. Our target is to repair 90% of Cat 2 (H) within 28 days, and 100% within 90 days.
  Category 2 (High) defects will be issued for a 28 day completion time..

- **(ii) Category 2 (Low)** defects are those that are **LIKELY** to become Cat 1 in 3 -12 months' time. We will monitor our performance of rectifying these defects within 90 days depending upon the available budget.
  Category 2 (Low) defects will be issued on a 90 day completion time.

The categorisation of defects will be reviewed annually to consider the impact of budgetary constraints, the practicality of delivery and the volume of work being identified.

Other sites may be recorded as suitable for preventative maintenance. These are sites with minor deterioration and surface irregularities which are highly unlikely to become defects before the next safety inspection. Work will not be issued for these; however, their suitability is recorded to allow preventative maintenance treatment to be undertaken and recorded.

c) Defect category selection will depend upon the inspector's **assessment at the point of inspection** which should be based on*:*

- Overall probability and impact of damage or accident occurrence.
- Hierarchy and frequency of inspection from Table 1 above.
- The depth, surface area – (extent of the defect).
- The location of the defect relative to other highway features such as junctions and bends.
- The location of the defect and its likely effect on the road user. Consideration will be given to pedestrians and vulnerable road users and whether it affects walking routes outside sheltered accommodation, elderly people's homes, doctors' surgeries etc. Consideration will also be given to the position of the defect in traffic lanes and in particular the wheel tracks.
- The volume of traffic, vehicular or pedestrian.
- The nature and extent of interaction with other defects.
- Forecast weather conditions and time of year, especially considering the potential for freezing of standing water.
- If the defect is categorised as a Cat.1, consider whether the next day is a working day and if not, given the above parameters, consider whether an emergency response would be more appropriate.
- **Example defects**, classification and guidance contained in Appendix A and Tables 2, 3 and 4.

12 Claims by Third Parties

The authority receives many claims for damages for alleged failure of statutory duty, i.e. Section 41 Highway Act 1980 (Duty to maintain a highway). The inspection records constitute an important defence document. In the event of such a claim the person undertaking the inspection will be required to complete a Third Party Accident Report Form.

APPENDIX A

TYPES OF HIGHWAY DEFECT

The following are **examples** of highway defects together with a description of those classed as **Category 1**, **2H & 2L.**
The list is *not* exhaustive and the Inspector will need to use their risk assessment as detailed in Section 11c to what is likely to be hazardous.
Category 1 defects should be made safe or repaired within a maximum period of 24 hours of discovery.

Carriageways and Category A Cycleways

Defect	Cat. 1 if:	Cat. 2H if:	Cat. 2L if:	Additional advice
Pothole/spalling ***** Depressions ***** Rutting ***** Gap/crack ***** Sunken ironwork *****	See **Table 2** below	See **Table 2** below	See **Table 2** below	See **Table 2** below
Edge deterioration* Constituting a hazard to the travelling public especially cyclists.	Greater than 100mm 'drop off' on the edge of an unconstrained road. If a cycle route 50mm should be used. Edge deterioration that has broken away will be considered as a pothole–see Table 2	See section 11 b (i) definition above	See section 11 b (ii) definition above	
Debris, spillage, contamination* Constituting a hazard on straight sections of road, bends, roundabouts and junctions	Diesel / oil spillage etc., mud on road, dead animals causing a danger	Not Applicable	Not Applicable	General non-emergency debris/rubbish clearance is a District Council responsibility May require serving of notice under Highways Act or NRSWA. For Cat 1 making safe can include

				signing / treatment or removal of hazard
Drainage covers etc. ***** Defective gully grates, manholes, service covers etc.constituting a hazard, especially for powered 2 wheeled vehicles and cyclists	Missing or collapsed covers. 20mm trip within the frame. Broken gully grates, manholes, service covers etc	As **2L** unless likely to deteriorate within 28 days. Also Drainage gully grate with grating parallel to kerb.	Not Applicable	Utility should be dealt with under NRSWA Section 81. Cat 1 defects should be made safe if full repair is not possible within a maximum 24 hours
Surface water * Ponding / discharging across highway. Constituting a hazard of aquaplaning, vehicle avoidance measures or skidding, especially during winter.	Where excess water requires signing and guarding	Minor discharge across the carriageway.	Not Applicable	Where applicable serve notice to landowner. During Winter, winter maintenance manager needs to be informed.
Displaced level crossing pads. Must be reported to Network Rail as soon as possible	Must be reported to Network Rail as soon as possible	Not Applicable	Not Applicable	
Longitudinal and transverse trenches* (Stats/ NCC)	Refer to NRSWA tolerances in 2002 NRSWA Specification and Table 2 for NCC tolerances	Refer to NRSWA tolerances in 2002 NRSWA Specification appendix and Table 2 for NCC tolerances	Refer to NRSWA tolerances in 2002 NRSWA Specification appendix and Table 2 for NCC tolerances	Utility should be dealt with under NRSWA Section 81, but defect must be made safe. Repair should be undertaken if utility does not respond to Section 81 notice.

***Subject to Risk Assessment as detailed in Section 11c.**

Footways

Defect	Cat. 1 Defect if:	Cat. 2H Defect if:	Cat. 2L Defect if:	Additional advice
Pothole	See **Table 3** below	See **Table 3** below	See **Table 3** below	
Trip hazard * Crack in surface Raised/damaged paving slab Trip/pothole Rocking slab/block Tree root damage ** Sunken / raised ironwork	See **Table 4** below	See **Table 4** below	See **Table 4** below	** Tree root damage – Seek Advice from from NCC Tree Officers
Debris, spillage, contamination * Constituting a hazard	Such that require signing and guarding before clearance.	Obviously slippery inspection covers	Not Applicable	General non-emergency debris/rubbish clearance is a District responsibility May require serving of notice under Highways Act or NRSWA. For Cat 1 making safe can include signing / treatment or removal of hazard
Kerbing * Damaged, rocking, missing or dislodged kerbs.	Creating a trip hazard greater than 20mm where a risk assessment indicates substantial risk within pedestrian desire	See section 11 b (i) definition above	See section 11 b (ii) definition above	

	lines. If there is not substantial risk within the desire line the defect can be categorised as 2H or 2L depending on the level of risk.			
Defective and missing ironwork and service covers. * Refer to NRSWA s81 (see below)	Raised, low or broken gully grates, manholes, service covers etc. Trip hazard greater than 20mm	See section 11 b (i) definition above	See section 11 b (ii) definition above	Utility should be dealt with under NRSWA Section 81, but defect must be made safe. Repair should be undertaken if utility does not respond to Section 81 notice.

***Subject to Risk Assessment as detailed in Section 11c.**

NRSWA , Section 81 - Duty to maintain apparatus

" An undertaker having apparatus in the street shall secure that the apparatus is maintained to the reasonable satisfaction of the street authority, as regards the safety and convenience of persons using the street (having regard, in particular, to the needs of people with a disability), the structure of the street and the integrity of apparatus of the authority in the street**"**

Verges/Visibility

Defect	Cat. 1 Defect if:	Cat. 2H Defect if:	Cat. 2L Defect if:	Additional advice
Overgrown verges/vegetation or obstruction at road junctions and roundabouts	Visibility at junctions & roundabouts severely restricted.	See section 11 b (i) definition above	Not applicable	Contact 3rd parties and service notice if appropriate for Cat 2
Overgrown verges / vegetation or obstruction to footway	Footway impassable	See section 11 b (i) definition above	Not applicable	
Nuisance Items in the verge	Items causing an immediate danger	See section 11 b (i) definition above	Not applicable	Contact 3rd parties and serve notice if appropriate for Cat 2

Traffic signs, Road Markings, Street Lighting and Street Furniture

Defect	Cat. 1 Defect if:	Cat. 2H Defect if:	Cat. 2L Defect if:	Additional advice
Signs / Road Markings / Road Studs*	Badly damaged or missing Stop or Give Way Sign Loose sign face In danger of falling on pedestrian, or falling into carriageway.	Obscured or dirty hazard / warning sign face. Faded or missing road 'Stop' or other mandatory lines at major junctions Missing "cats eyes"	Partly obscured or dirty sign face Faded sign face Damaged or missing advance Give Way sign Faded or missing other mandatory road markings	Lining defects to be identified for lining programme. Major junction lining faults to be passed to maintenance manager.
Street Lighting **ALL ELECTRICAL HAZARDS MUST BE REPORTED IMMEDIATELY TO STREET LIGHTING TEAM**	Lighting column or illuminated sign knocked down. Exposed live electrical wiring.	Lighting column or illuminated sign minor damage. Lighting column or illuminated sign inspection door loose. Illuminated bollard damaged, missing or unlit.	Lighting column or illuminated sign minor damage. Lighting column or illuminated sign inspection door loose. Illuminated bollard damaged, missing or unlit.	Cat 2H or 2L to be determined based on severity of damage and location of apparatus

Traffic Signals **ALL SIGNAL DAMAGE MUST BE REPORTED TO THE TRAFFIC CONTROL CENTRE**	Exposed live electrical wiring. Seriously damaged or defective traffic signals;	Not applicable	Not applicable	
Fencing / Barriers* Safety fencing Private fencing Pedestrian barriers Knee rail fencing Highway fencing	Obviously damaged fencing or barriers causing immediate danger to highway users	See section 11 b (i) definition above	See section 11 B (ii) definition above	Contact 3rd parties and service notice if appropriate for private fencing.

***Subject to Risk Assessment as detailed in Section 11c.**

Table 2 Carriageways and Category A Cycleways

Pothole/spalling, depressions, rutting, gap/crack width and sunken ironwork or other hazard

Road Type		Strategic Route	Main Distributor	Secondary Distributor	Link Road	Local access road
Road Hierarchy		2	3a	3b	4a	4b
Inspection Frequency		1 month	1 month	1 month	3 months	1 year
Category 1 Defect (1 working day repair) *		>As per adjacent footway in vicinity of pedestrian crossing or pedestrian route >40mm elsewhere				
Category 2H (28 day repair)	2H	Category 1 within 3 month if not attended to				
Category 2L (90 day repair)	2L	Category 1 within 3 to 12 months if not attended to				

Table 3 Footway Potholes

Footway Type	Prestige Area	Primary Walking Route	Secondary Walking Route	Link Footway	Local access footway
Footway Hierarchy	1a	1	2	3	4
Inspection Frequency	1 month	1month	3 months	6 months	1year
Category 1 Defect (1 working day repair) *	>20mm				
Category 2H (28 day repair)	Category 1 within 3 month if not attended to				
Category 2L (90 day repair)	Category 1 within 3 to 12 months if not attended to				

Table 4 Footway Trip Hazard

Crack in surface, raised/damaged paving slab, trip/pothole, rocking slab/block, sunken or raised ironwork or other tripping hazard

Footway Type	Prestige Area	Primary Walking Route	Secondary Walking Route	Link Footway	Local access footway
Footway Hierarchy	1a	1	2	3	4
Inspection Frequency	1 month	1 month	3 months	6 months	1 Year
Category 1 Defect (1 working day repair) *	>20mm vertical face/movement/crack				
Category 2H (28 day repair)	Category 1 within 3 month if not attended to				
Category 2L (90 day repair)	Category 1 within 3 to 12 months if not attended to				

***Subject to Risk Assessment as detailed in Section 11c.**

Items to be dealt with as an enquiry in the Highway Asset Management System

Debris, spillage and contamination

NRSWA s81 defects

Nuisance items in the verge

Overgrown verges / vegetation or obstruction at road junctions and roundabouts

Overgrown verges / vegetation or obstruction to footway

Signs

Street lighting

Traffic signals

Fencing / Barriers / Private Fencing