Northumberland
County Council

HIGHWAY INSPECTION MANUAL

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CONTENTS

1. Introduction

This manual has been developed with the primary aim of providing operational guidance to those officers involved in undertaking highways safety inspections in order to ensure a consistent countywide approach by utilising a formalised system that prescribes the frequency of inspections and the method of assessing, recording and responding to defects in the highway.

The manual has been prepared with reference to the Code of Practice "Well-managed Highway Infrastructure". It sets out the structure of the assessment and inspection regimes to be followed and gives guidance on the activities to be undertaken as part of each. This guidance includes information on intervention levels and processes to be followed.

In this manual the term 'Intervention Level' is used to define the minimum criteria at which making safe or repairing (intervention) will take place. In complying with its duty to maintain the highway, as outlined within Section 41 of the Highways Act 1980 and for the purposes of Section 58, which provides for special defence, Northumberland County Council undertakes inspections of the highway incorporating the carriageway, footway, grass verge and pathways upon which the public have a right of access and which are maintained at public expense.

Safety Inspections for other asset groups such as bridges and street lighting are not covered in this document.

This manual deals with safety inspections that are derived from two main sources:

1. **Planned Cyclic Safety Inspections**
   To identify defects which are hazardous (to any user of the highway including drivers, pedestrians, equestrians and cyclists) so that an effective repair can be carried out within a predetermined response time. Cyclic Safety Inspections are carried out to specified frequencies, dependent upon the hierarchy of each highway. During the inspection, defects that are at or exceed the minimum intervention levels (subject to Risk Assessment), as outlined in the Risk Analysis of Highway Defects Policy are identified and processed for repair.

2. **Reactive Safety Inspections**
   In response to particular circumstances, including reports of defects from the police, public, other agencies and utility companies.

In addition to and concurrent with a Safety Inspection the following are also observed:

- Observation Assessments
  Service or Detailed Inspections are designed primarily to establish the programmes of routine maintenance tasks not requiring urgent execution (e.g. pre-surface dressing patching, patching, haunching, drainage provision). A programme of condition surveys (e.g. SCANNER, Coarse Visual Inspection [CVI], Griptester and Footway Network Survey [FNS]) have been introduced to give an overall picture of the condition of the network for carriageways, footways and cycleways in Northumberland have superseded the use of Service Inspections as the primary source for identifying required maintenance works.
- Utility Company Apparatus
  Inspected concurrent with a Highway Safety Inspection and information sent to the Streetworks team for liaison with the relevant party requiring them to undertake remedial action under section 81 of the New Roads and Street Works Act 1991.

Highway safety inspections are undertaken by Highway Inspectors. The Highways Inspector is required to record any defects which are deemed to require repair when applying the criteria in this manual.

3rd Party Reports
Reported defects that do not meet the criteria for treatment should be recorded so that a comprehensive response can be sent to the reportee.

Planned Maintenance Works
From time to time Inspectors will be instructed to provide locations and details of non actionable defects that may assist the management team to prepare programmes of minor works e.g. patching, haunching / kerbing, drainage, sign replacement etc.

2. Definition of Road, Footway and Cycleway Categories

Based on the guidance in Well-managed Highway Infrastructure, the Council has developed functional road, footway and cycleway hierarchies as shown below.

Roads

Hierarchy Category	Hierarchy Name	Type of Road General Description
1	Major Road Network	Major Road Network.
2	Resilient Road Network	Roads that maintain economic activity. Designated by NCC.
3	Main Distributor	Main routes linking the (NCC) main towns to the Resilient Road Network.
4	Secondary Distributor	Routes linking the (NCC) Service Centres to the Main Distributor Network (or higher category road Network).
5	Major Link Road	Roads linking the Main and Secondary Distributor Networks with large villages and residential estates, and industrial areas.
6	Minor Link Road	Roads linking smaller settlements, travelling through residential estates and industrial area.
7	Local Access Road (through route)	Roads serving limited numbers of properties but also facilitating travel to other settlements.
8	Local Access Road (dead end)	Dead end roads serving limited numbers of properties.
9	Unsurfaced Roads	Unsurfaced Roads which are generally unsuitable for normal use.

Footways

Category	Name	Description
1a	Prestige Walking Zones	Very busy areas of towns with high public space and streetscene contribution.
1	Primary Walking Routes	Busy urban shopping and business areas and main pedestrian routes.
2	Secondary Walking Routes	Medium usage routes through local areas feeding into primary routes, local shopping centres etc.
3	Link Footways	Linking local access footways through urban areas and busy rural footways.
4	Local Access Footways	Footways associated with low usage, short estate roads to the main routes and cul-de-sacs. Little used rural footways serving very limited numbers of properties.

Cycleways

Category	Description
1	Cycle lane forming part of the carriageway, commonly a strip adjacent to the nearside kerb. Cycle gaps at road closure point (no entry to traffic, but allowing cycle access).
2	Shared cycle/pedestrian paths, either segregated by a white line or other physical segregation, or unsegregated.
3	Cycle track, a highway route for cyclists not contiguous with the public footway or carriageway.
4	Cycle trails, leisure routes through open spaces. These are not necessarily the responsibility of the highway authority, but may be maintained by the authority under other powers or duties.

3. Planned Safety Inspections and Frequencies

All highways are assigned a frequency of inspection that can vary dependent upon a number of factors, these include: -

- Category of road
- Amount of pedestrian traffic
- Location

Roads

Hierarchy Category	Frequency	Method of Inspection
1	Monthly	Above 40mph driven with a dedicated driver, 40mph and below walked. Alternate months driven in the opposite direction. Dual carriageways both directions per month.
2	Monthly	Above 40mph driven with a dedicated driver, 40mph and below walked. Alternate months driven in the opposite direction. Dual carriageways both directions per month.
3	Monthly	Above 40mph driven with a dedicated driver, 40mph and below walked. Alternate months driven in the opposite direction. Dual carriageways both directions per month.
4	Monthly	Above 40mph driven with a dedicated driver, 40mph and below walked. Alternate months driven in the opposite direction. Dual carriageways both directions per month.
5	Quarterly	Above 40mph driven by the Inspector, 40mph and below walked. Alternate inspections driven in the opposite direction.
6	Six Monthly	Above 40mph driven by the Inspector, 40mph and below walked. Alternate inspections driven in the opposite direction.
7	Annually	Above 40mph driven by the Inspector, 40mph and below walked. Alternate inspections driven in the opposite direction.
8	Annually	Above 40mph driven by the Inspector, 40mph and below walked. Alternate inspections driven in the opposite direction.
9	None	N/A

Footways

Category	Frequency	Method of Inspection
1a	Monthly	Walked
1	Monthly	Walked
2	Three monthly	Walked
3	Six monthly	Walked
4	Annual	Above 40mph driven, with a driver. 40mph and below walked. If footway is remote from the road it must be walked.

Cycleways

Category	Frequency	Method of Inspection
1	As for adjacent carriageway	As for adjacent carriageway
2	As per footway category	As per footway category
3	Annual	Walked or cycled
4	Annual, if NCC asset	Walked or cycled

Safety Inspection Delivery

All data arising from Safety Inspections is entered via the data capture device with the resultant data being stored within a data management system (referred to as Mayrise).

Highway safety inspections should not normally be carried out during the hours of darkness/dusk where possible (the A189 is an exception to this). An assessment should be made by the Highways Inspector to determine whether the inspection can be undertaken safely during conditions of poor visibility e.g. snow, fog, or heavy rain, and does not impede the identification of defects. Periods of heavy traffic flow should be avoided where possible.

If a monthly inspection due date falls on a Saturday or Sunday, the Highways Inspector schedules the Inspection for one day in the week prior to the due date.

If an Inspection Due Date falls during an extended period of absence e.g. Highways Inspector holiday or illness, then the Inspection must be allocated to another Highways Inspector who has the capacity to carry out the Inspection on or before the due date as outlined above.

These inspections must then be complete within the tolerances set out below.

Frequency of Inspection	**Inspection Tolerance**
Monthly	Within +/- 1 week of the due date
Quarterly	Within +/- 2 weeks of the due date
Six Monthly	Within +/- 4 weeks of the due date
Annual	Within +/- 6 weeks of the due date

Note: A late inspection will be reported on the system hence separate records need to be kept of any occurrences and the reason they occurred.

Significant weather conditions that disrupts the inspection frequencies must be agreed by management and recorded with a signed decision record.

Driven Inspections

The following general guidelines are given: -

A roof-mounted flashing light (beacon) will be provided for use on all inspection vehicles.

The vehicle must have clearly visible reflective markings, including sign(s) reading ‘HIGHWAY MAINTENANCE’ affixed to the rear of the vehicle.

The Highway Inspector should carry the following equipment in the inspection vehicle (as a minimum): -

First aid kit	2 No (minimum) aerosol paint spray cans
Sweeping brush	Hand beater/tamper
Shovel	Spade
Lump hammer	Bow saw
Loppers	Metal detector
1 metre spirit level/straight edge	Joiners folding rule

2 No (minimum) tubs of pavement repair material	2 No adjustable spanners
1 No 5mm hex allen key	Manhole lifting keys
6 No 750mm road cones	Miscellaneous sundries / PPE: Cable ties, drain dye, barrier tape, gloves, hand wipes, hard hat, eye protection, ear protection

High visibility garments to Class 3 ISO 20471:2003 must be worn whenever the Highway Inspector alights from the vehicle.

When necessary to stop, it is preferable to position the vehicle off the carriageway. If this cannot be achieved, then there should be clear visibility in both directions, the beacon should remain switched on, and moving vehicles should not be forced to cross continuous white lining. When the above requirements cannot be achieved, then advance signing must be placed in position.

All driven inspections on carriageway categories 1 - 4 will be a two - person operation with the passenger carrying out the survey and recording the details. As an exception to the above, driven inspections can be carried out from lone inspector in low risk situations on carriageway categories 5 - 9. This would be in situations where any actionable defects can still be identified and there are no additional public safety risks from not having a dedicated driver.

The driver of the inspection vehicle, although not required to be a Highways Inspector, must have experience of highways maintenance activities and have had training / briefing prior to commencing a live driven inspection.

Vehicles should be driven at a speed appropriate to road and traffic conditions and suitable to enable inspections to be carried out. For example on derestricted roads at a maximum speed of 30 mph in the nearside lane of the carriageway. The driver should be aware that a slow moving vehicle could be a hazard to other road users.

All reasonable precautions must be taken to ensure the inspection is carried out safely.
If at the time of inspection the Highways Inspector considers it too dangerous to complete a route safely the Highways Inspector should consult with their line manager for advice and record actions.

Inspection of dual and multilane (3 or more) sections of carriageway will be in both directions at each Inspection.

For further guidance refer to the Traffic Signs Manual - Chapter 8 - Traffic Safety Measures and Signs for Road Works and Temporary Situations - Part 2: Operations. 08.4 Road (Highway) Maintenance Inspections/Operations.

Walked Inspections

High visibility garments to Class 3 ISO 20471:2003 must be worn.

Inspection of footways and cycleways in urban areas subject to a 40mph restriction or less will be walked.

Inspection of category 1 - 4 footways will normally be walked, with the exception of category 4 footways where the adjacent carriageway speed limit is greater than 40mph. When there are footways on both sides of the carriageway, both footways shall be walked. When carrying out walked footway inspections, the adjoining carriageway will also be inspected by observation from the adjacent footway.

Inspection of category 4 footways (where the adjacent road speed limit is greater than 40mph) will normally be carried out as part of the driven inspection along the adjacent carriageway. The Highways Inspector must walk any sections where parked vehicles restrict the view of the full highway extent or where the footway is elevated so that it cannot be viewed from the inspection vehicle. When a driven inspection is being carried out and there is a footway present on both sides of the carriageway, the road will be driven in both directions.

It is recognised that parked vehicles can present a visual obstruction to the inspection process. However it is also recognised that removal of all parked vehicles from large sections of the highway would cause major disruption to residents, be difficult to enforce and impractical to provide any alternative parking.

The Highways Inspector must do all that is reasonably practicable to ensure that any defects are identified and recorded. The best view under a parked vehicle is obtained by not standing too close, the shallow angle of sight affording the greatest opportunity to identify defects and the space between all parked vehicles must be closely examined.

Inspection Audits

Area - Carried out at six monthly intervals.
Highways Maintenance Team Leader (HMTL) to carry out one walked and one driven inspection, (determined at random by the HMTL within road hierarchy category 1 -4) with each Highways Inspector in their own geographic area. Results to be compared against those previously recorded in Mayrise by the Highways Inspector.
Cross Area - Carried out annually.
HMTL to carry out one walked and one driven Inspection (determined at random by HMTL within road hierarchy category 1 -4) with HMTL from an adjacent delivery area. Results to be recorded and compared against those previously recorded in Mayrise. Feedback to be given to Highways Inspectors by HMTLs to ensure cross area consistency.

4. Reactive (Third Party) Safety Inspections

Any individual safety-related defect identified and inspected outside a planned or ad-hoc cyclic safety inspection originated from any source eg police report, general public, other agencies and utility companies identified etc is recorded through the issuing of a works order. Regardless of whether a defect reported in this way is actionable or not, it should be photographed (if applicable) and measurements taken. A report that is deemed non actionable would be signed off as ‘no defect.’

Any Category 1 defect identified whilst in transit between two points and not on a current inspection route is also required to be recorded through the issuing of a works order and the appropriate action taken.

Road Category	**Name**	**Target for inspecting customer reports**
1	Major Road Network	2 working days
2	Resilient Road Network	2 working days
3	Main Distributor	2 working days
4	Secondary Distributor	2 working days
5	Major Link	5 working days
6	Minor Link	5 working days
7	Local Access (through route)	5 working days
8	Local Access (dead end)	5 working days
9	Unsurfaced	15 working days

Footway Category	**Name**	**Target for inspecting customer reports**
1a	Prestige Walking Areas	2 working days
1	Primary Walking Routes	2 working days
2	Secondary Walking Routes	5 working days
3	Link Footways	5 working days
4	Local Access Footways	5 working days

Cycleway Category	Name	Target for inspecting customer reports
1	Cycle lane forming part of the carriageway	Use corresponding road hierarchy response time
2	Shared cycle/pedestrian paths	Use corresponding footway hierarchy response time
3	Cycle track, a highway route for cyclists not contiguous with the public footway or carriageway	5 working days
4	Cycle trails, leisure routes through open spaces	15 working days

Any safety inspection carried out beyond the due date must have the reasons for the delay recorded.

Observation Assessments

As part of and concurrent with the Highway Safety Inspection process all sections of carriageway, cycleway and footway are assessed for overall general condition. This information is used to aid the Asset Management Team in the targeted delivery of future planned maintenance schemes.

Observational assessments shall be based on the average condition of the full section length. This information will be recorded using the following notation:

Example Carriageway Condition:

Typical Condition	Notation: As New
	
Definition: New condition free from repairs or patching.	

Typical Condition	Notation: Aesthetically Impaired
	
Definition: Sound carriageways with patching, some discolouration and or minor fretting of surface.	

Typical Condition	Notation: Functionally Impaired
 	
Definition: Minor surface deterioration, fretting, fatting up. Minor cracking of surface and or uneven surface.	

Typical Condition	Notation: Structurally Unsound
   	
Definition: Major fretting and potholing. Poor shape, severe settlement, subsidence creating a significant difference in level.	

Example Footway or Cycleway Condition:

Typical Condition	Notation: As New
	
Definition: New condition free from repairs or patching	

Typical Condition	Notation: Aesthetically Impaired
	
Definition: Sound footways with patching, Modular footways with sound bituminous patches, Modular footways with elements of different colour/age/material, Faded bituminous materials (especially coloured bituminous). Graffiti / Spray paint	

Typical Condition	Notation: Functionally Impaired
	
Definition: Definition: Cracked but level flags / blocks, Missing Filler, Minor surface, deterioration, fretting, fatting, Including the appearance of moss. Minor cracking, minor scaling and moderate local settlement / subsidence.	

Typical Condition	Notation: Structurally Unsound
 	
Definition: Cracked and depressed / missing flags or blocks. Major fretting and potholing. Major cracking, poor shape, severe settlement/subsidence creating a significant difference in level.	

5. Risk Assessment

Each defect type identified in Section 8 has been assessed to determine the associated risk, which depends on a number of factors including the category of the road or footway and the type and speed of traffic using the road. The overall risk has been evaluated through an assessment of the likely impact, should the risk occur and the probability of the impact occurring.

Risk impact is quantified on a scale of 1 to 4, as follows: -

1 – Little or no impact
2 – Minor or low impact
3 – Negligible impact
4 – Major, high or serious impact

Risk probability is a measure of the identified impact occurring and is also quantified on a scale of 1 to 4, as follows: -

1 – Very low probability	(up to 20%)
2 – Low probability	(21% to 40%)
3 – Noticeable probability	(41% to 75%)
4 – High probability	(over 75%)

The overall risk factor is the product of the risk impact and the risk probability and so falls into the range 1 to 16. The response category is determined by correlation with the risk factor, as shown in the following table: -

	Probability			
Impact	Very Low (1)	Low (2)	Medium (3)	High (4)
High (4)	4	8	12	16
Noticeable (3)	3	6	9	12
Low (2)	2	4	6	8
Negligible (1)	1	2	3	4

Response category	2(L)	2(M)	2(H)	1(H)

The table should be used to carry out a dynamic risk assessment, to determine the risk factor and associated response times for defects not identified in Section 8. Defects that are required to be made safe or repaired within 2 hours where they present an immediate and critical hazard to highway users shall be classified as 1VH, examples although not an exhaustive list is provided in Section 6.

6. Defect Intervention Response Times

Defect Category		Description	Response Time
1	1VH	Defects which are deemed to represent an urgent or imminent serious risk to highway users due to their nature, extent and location, or which may lead to short-term deterioration of the highway network if not repaired.	Repair or make safe within 2 hours
	1H		Repair, or make safe, during the next working day.
2	2H	Defects, which following a risk assessment, are deemed not to represent an immediate or imminent hazard to highway users, or risk of structural deterioration, but which may still have safety implications but to a lesser degree than Category 1 defects.	Repair within 14 days
	2M		Repair within 28 days
	2L		Based upon the risk of deterioration before the next planned inspection **Either**: Include repair as part of planned remedial work if deemed viable **Or:** Repair during next available programme **Or**: schedule a further inspection to monitor condition **Or**: review at next inspection

The following are examples (and not a definitive list) of such defects that will be made safe or repaired within 2 hours where they present an immediate and critical hazard to highway users: -

- Major debris or spillage
- Critically unstable trees, structures, street lighting columns, bollards or other similar items causing danger of collapse onto the highway
- Exposed live electrical wiring
- Carriageway collapse or comparable severe surface defect with very high probability of loss of control
- Missing or seriously defective ironwork with very high probability of injury to users
- Footway or cycleway collapse, or comparable severe surface defect with very high probability of injury to users

Response times for carriageway defects should be considered for escalation dependant on severity, location and road hierarchy.

7. Items for Inspection

This is a visual safety inspection only, and does not for example include items such as electrical safety or testing.

All of the components which make up the Highway Asset are to be inspected, including, but not exclusively:

Carriageways	Central Island Central Reservation Carriageway Hard Shoulder Crossover (Central Reserve) Kerbs,(Including Granite Sett Kerbs) Channels And Edging Verge Lay By Cycle Lanes	**Signs and Bollards**	Signs and Poles Bollards Illuminated Signs Pedestrian Crossing Lights (Belisha Beacons)
Footways and Cycleways	Footway Paved Footpath Cycleways Kerbs, Channels And Edging Verge	**Traffic Signals**	Traffic Signals Traffic Signal Installation Traffic Signal Furniture
Ironwork	Inspection Chambers Catchpit And Gullies Kerb Outlets Utilities Covers And Frames Cattle Grids	**Safety Fencing and Barriers**	Fences And Barriers Pedestrian Guard Rail Safety Fencing Boundary Walls And Fences
Drainage	Culvert Highway Ditch Filter Drain Grip Gullies Grids Pipes Grip / Kerb Outlet	**Street Furniture**	All Items Of Street Furniture
Road Markings	Stop Lines Give Way Lines Double White Line Systems Other Road Markings High Friction Coating	**Hedges and Trees**	Hedges Trees And Shrubs Other Vegetation
Road Studs	Non Reflective Road Studs (E.G. Zebras And Pelican Crossings) Depressible Reflective Road Studs Non Depressible Reflective Road Studs	**Scavenging**	The full extent of Highway including: Hazardous litter Sharp objects Broken glass, loose aggregate / gravel etc.
Bridges / Structures	Parapet Walls Handrails Expansion Joints	**Fords**	Pavement Depth Gauge
Street Lighting	Street Lighting Columns, Wall Mounted Street Lights and all Other Lighting Units		

8. Risk register encompassing parameters of defects, intervention levels and risk matrix application.

We have chosen to use the word ‘intervention’ to reflect our strategy of acting before a defect becomes dangerous.

Asset	**Carriageway**
Defect	**Pothole / spalling**
Position	**Anywhere within carriageway**

Extent	Road Hierarchy	Road Speed Limit	Priority Response
≥40mm deep and ≥300mm wide in any direction	1,2,3,4,5,6	all	2(H)
	7,8	all	2(M)

Comments
Once a depth of 40mm is reached action is required for repair. Potholes are a potential hazard to all road users, not just motorists and any assessment must also consider cyclists and motorcyclists. At formalised / designated pedestrian crossing points the carriageway becomes an extension of the footway, therefore footway intervention levels must prevail at these locations.

Example(s)

Asset	**Carriageway**
Defect	**Rutting**
Position	**Wheel track**

Extent	Road Hierarchy	Road Speed Limit	Priority Response
≥40mm	1,2,3,4,5,6	all	2(H)
	7,8	all	2(M)

Comments
A continuous longitudinal depression in the wheel track that allows water to pond or makes manoeuvering difficult. A risk management approach is required to allocate the correct priority of response to the defect. Particular consideration should be given to prioritising events that pose a hazard to vulnerable road users or may cause loss of control for vehicles. On all classified roads rutting is monitored by regular machine condition surveys.

Example(s)

Asset	**Carriageway**
Defect	**Cracking**
Position	**Anywhere within carriageway**

Extent	Road Hierarchy	Road Speed Limit	Priority Response
≥30mm wide and ≥40 deep and more than 300mm long	all	all	2(M)

Comments
A longitudinal (or lateral) crack in the carriageway where the gap is greater than or equal to 30mm with a depth greater than or exceeding 40mm and greater than 300mm in length. Could be associated with reflective cracking (subsurface joints), failure of longitudinal surfacing joints or tension cracks caused by subsurface movement (landslip). Locations that exhibit signs of potential landslip should be reported to your line manager who will arrange a more detailed inspection to be undertaken as a matter of urgency.

Example(s)

Reflective cracking

Asset	**Carriageway**
Defect	**Surface crowning e.g. ridge / tree roots**
Position	**Anywhere within carriageway**

Extent	Road Hierarchy	Road Speed Limit	Priority Response
>75mm high and < 300mm wide	1,2,3,4	all	2(H)
	5,6,7,8	all	2(M)

Comments
Surface crowning and heave if severe can be considered as dangerous as a pothole although not displaying abrupt level difference the minimum intervention will be 75mm high. Where an abrupt level difference occurs within an area it shall be measured against the criteria for a pothole. Excessive heave or subsidence should in addition to the priority response tabulated above be reported to your line Manager and investigated appropriately.

Example(s)

Asset	**Pedestrian Crossing**
Defect	**Trip / pothole**
Position	**Within designated pedestrian crossing (carriageway)**

Extent	Road Hierarchy	Road Speed Limit	Priority Response
≥20mm deep, ≥75mm wide	Signal controlled crossing	40mph and below	1
	1,2,3,4	40mph and below	2(H)
	5,6,7,8	40mph and below	2(M)

Comments
Once a depth of 20mm is reached action is required for repair or make safe. This defect can also occur in block paved, stone sett surfaces and the like. Designated Pedestrian Crossing points include locations where there is a clear intention that pedestrians should cross the road, i.e. location of dropped kerbs.

Example(s)

Asset	**Footway**
Defect	**Trip, pothole, sunken covers, rocking slab / block, tree root damage, including kerbs adjacent to footways**
Position	**Within footway**

Extent	Footway Hierarchy	Road Speed Limit	Priority Response
≥20mm deep	1a,1,2,3	all	2(H)
	4	all	2(M)

Comments
Once a depth of 20mm is reached action is required for repair This defect can also occur in block paved, stone sett surfaces and the like.

Example(s)

Asset	**Footway**
Defect	**Open joint**
Position	**Within footway**

Extent	Footway Hierarchy	Road Speed Limit	Priority Response
>25mm wide & ≥25mm deep	1a,1,2	all	2(H)
	3	all	2(M)
	4	all	2(L)

Comments
Once a depth of 25mm is reached action is required for repair This defect can also occur in block paved, stone sett surfaces and the like.

Example(s)

Asset	**Footway**
Defect	**Depression**
Position	**Within footway**

Extent	Footway Hierarchy	Road Speed Limit	Priority Response
≥25mm deep and <600mm wide in any direction	1a,1,2,3	all	2(H)
	4	all	2(M)

Comments
Depression, Crowning, Heave, Subsidence and Rutting if severe can be considered as dangerous as a pothole although not displaying abrupt level difference the minimum intervention will be 25mm depth. Where an abrupt level difference occurs within an area it shall be measured against the criteria for a pothole. This defect can also occur in block paved, stone sett surfaces and the like. Designated Pedestrian Crossing points include locations where there is a clear intention that pedestrians should cross the road.

Example(s)

Asset	**Cycleway (surfaced / bound surface)**
Defect	**Pothole**
Position	**Within cycleway**

Comments

Extent	Cycleway Hierarchy	Road Hierarchy	Road Speed Limit	Priority Response
≥20mm	1	1,2,3,4	all	1
≥20mm	1	5,6	all	2(H)
≥20mm	1	7,8	all	2(M)

Extent	Cycleway Hierarchy	Footway Hierarchy	Road Speed Limit	Priority Response
≥20mm	2	1a,1	all	1
≥20mm	2	2,3	all	2(H)
≥20mm	2	4	all	2(M)

Extent	Cycleway Hierarchy	Priority Response
≥20mm	3	2(M)

Extent	Cycleway Hierarchy	Priority Response
≥20mm	4 (bound)	2(M)

Asset	**Ironwork**
Defect	**Missing or damaged cover**
Position	**Within carriageway, footway or cycleway**

Extent	Hierarchy	Road Speed Limit	Priority Response
	all	all	1

Comments
Highways Inspector to immediately make safe by replacing cover if possible or cone off the defect. Ironwork that is the responsibility of a utility company should be referred immediately to the NCC Streetworks Team for further action. If it is unclear that the defect or apparatus is the responsibility of a utility company it should be made safe within the response time and further inquiries undertaken to determine responsibility.

Example(s)

Asset	**Ironwork**
Defect	**Level difference within framework / sunken covers (sharp edged) for covers >300mm wide in any direction (covers <300mm wide in any direction and highway gullies to be subject to site specific risk assessment)**
Position	**Within carriageway, footway or cycleway**

Extent	Road Hierarchy	Road Speed Limit	Priority Response
40mm	1,2,3,4,5,6	all	2(H)
	7,8	all	2(M)

Extent	Footway Hierarchy	Road Speed Limit	Priority Response
20mm	1a,1,2,3	all	2(H)
	4	all	2(M)

Extent	Cycleway Hierarchy	Road Speed Limit	Priority Response
≥40mm	1	all	2(H)
≥20mm	2	all	2(M)
≥40mm	3,4	N/A	2(M)

Comments
The level difference within the framework of an item of Ironwork or sunken/protruding Ironwork will be as potentially dangerous as a pothole with an abrupt level difference. Excessively worn or polished covers should be replaced or where appropriate reported to the relevant utility company for replacement as this defect has the potential to exacerbate a skidding related incident.

Example(s)

Asset	**Verges (does not include hardened verges)**
Defect	**Sunken area / rutting / vehicle damage**
Position	**Adjacent to carriageway**

Extent	Road Hierarchy	Road Speed Limit	Priority Response
≥150mm deep	1,2,3,4,5,6,7,8	all	2(L)

Comments
This relates to the verge within 300mm of the edge of the surfaced carriageway. Any detriment to the verge beyond 300mm from the edge of the surfaced carriageway will be assessed at the Highways Officers discretion with due regard to the safety of the highway user. A purposely excavated channel in the verge (including ditches and grips) for the purpose of highway drainage is not to be considered as part of this defect.

Asset	**Verges (does not include hardened verges)**
Defect	**Sunken area / rutting / vehicle damage**
Position	**Adjacent to footway**

Extent	Footway Hierarchy	Road Speed Limit	Priority Response
≥150mm deep	1,2,3,4	all	2(L)

Comments
This relates to the verge within 300mm of the edge of the surfaced footway. Any detriment to the verge beyond 300mm from the edge of the surfaced footway will be assessed at the Highways Officers discretion with due regard to the safety of the highway user. A purposely excavated channel in the verge (including ditches and grips) for the purpose of highway drainage is not to be considered as part of this defect.

Asset	**Drainage**
Defect	**Standing water**
Position	**Carriageway**

Extent	Road Hierarchy	Road Speed Limit	Priority Response
Standing water should be recorded where the road has water lying in low spots that force vehicles away from the edge of the road by more than one metre or where vehicles are forced to cross centreline or other lane markings.	1,2,3,4	all	2(H)
	5,6,7,8	all	2(M)

Comments
Particular consideration should be given to prioritising events that pose a hazard to vulnerable road users or may cause loss of control for vehicles. Only those which represent an immediate or imminent hazard should be escalated to a Category 1 defect. It is anticipated that especially where there is no highway drainage infrastructure present that any response will be by the deployment of 'Flood' boards. Notwithstanding the guidance above, all other standing water/flooding events shall be classified at the Highway Inspectors discretion. Consideration should be given for programmed works to install drainage where applicable.

Example(s)

Asset	**Road Markings**
Defect	**Loss of effective markings - considered a defect when they are missing or faded to such an extent that they are no longer adequate for their intended purpose**
Position	**Carriageway**

Extent	Road Hierarchy	Road Speed Limit	Priority Response
Stop/ give way or solid centre line (mandatory markings)	1,2,3,4	all	2(H)
	4,5,6,7,8	all	2(M)
Other markings (advisory markings, centre line etc)	all	all	2(L)

Comments
If defective areas cannot be repaired within the specified timescales then appropriate warning signs should be erected until permanent repairs have been completed.

Asset	**Reflective Road Studs**
Defect	**>5 consecutive missing or displaced reflector**
Position	**Carriageway**

Extent	Road Hierarchy	Road Speed Limit	Priority Response
Double solid	all	all	2(M)
Warning broken centre line	1,2	all	2(M)
	3,4,5,6,7,8	all	2(L)
Standard broken centre line	all	all	2(L)

Comments
A displaced road stud on the carriageway should be removed as soon as possible. The remaining void as a consequence of the displaced road stud to be assessed against the criteria for potholes.

Asset	**Signs**
Defect	**Missing**
Position	**Carriageway**

Extent	Road Hierarchy	Road Speed Limit	Priority Response
No entry or stop sign	1,2,3	all	2(H)
	4,5,6,7,8	all	2(M)

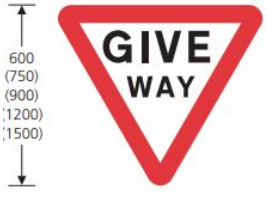
Extent	Road Hierarchy	Road Speed Limit	Priority Response
Other warning or regulatory sign	all	all	2(M)

Extent	Road Hierarchy	Road Speed Limit	Priority Response
Other sign	all	all	2(L)

Comments
The absence of an information sign is not in itself a safety defect. However the absence of a warning sign should be treated as a safety defect. In such circumstances, temporary warning signs may be needed to comply with response times.

Common warning and regulatory signs (for further details consult Traffic Signs Manual Ch 2&3)

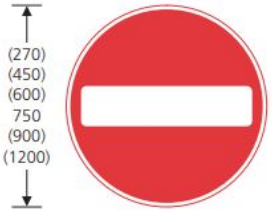
601.1 Junction controlled by a STOP sign



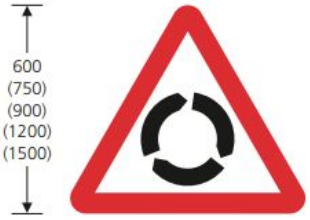
602 Junction controlled by a GIVE WAY sign

612 No right turn

613 No left turn



616 No entry for vehicular traffic



510 Roundabout ahead

512 Bend ahead

513 Double bend ahead

Asset	**Signs**
Defect	**Dirty / obscured / faded / damaged or misaligned**
Position	**Carriageway**

Extent	Road Hierarchy	Road Speed Limit	Priority Response
No entry or stop sign	1,2,3	all	2(H)
	4,5,6,7,8	all	2(M)

Extent	Road Hierarchy	Road Speed Limit	Priority Response
Other warning or regulatory sign	all	all	2(M)

Extent	Road Hierarchy	Road Speed Limit	Priority Response
Other sign	all	all	2(L)

Comments
Notwithstanding the risk assessment above if any item is laid in the highway or is likely to cause a serious incident , the Highways Inspector should exercise their discretion to have the item removed as soon as possible.

Example(s)

Asset	**Signals**
Defect	**Red light failure, not operating correctly / malfunctioning / signal obscured**
Position	**Carriageway**

Extent	Road Hierarchy	Road Speed Limit	Priority Response
	all	all	1VH

Comments
Failure of signals to be reported to NCC Highways Street Lighting Contact details are: - 01670 625569 or 01670 623012. highwaysstreetlighting@northumberland.gov.uk

Example(s)

Asset	**Bollards**
Defect	**Missing / damaged illuminated bollard / dirty or faded / bollard obscured**
Position	**Carriageway**

Extent	Road Hierarchy	Road Speed Limit	Priority Response
	all	all	2(H)

Comments
Missing/ dirt or faded illuminated bollard to be reported to NCC Highways Street Lighting Contact details are: - 01670 625569 or 01670 623012. highwaysstreetlighting@northumberland.gov.uk

Example(s)

Asset	**Safety Fences and Barriers**
Defect	**Damaged / missing vehicle restraint system**
Position	**Carriageway**

Extent	Road Hierarchy	Road Speed Limit	Priority Response
Visible loss of barrier integrity	all	all	2(H)

Comments
Upon identification of a loss of integrity the Inspector should arrange for the erection of suitable temporary warning signs (exclamation mark '!' Fig 562 sign). Prior to organising a repair the Inspector should discuss the proposals with their Line Manager. The repair should be in accordance with current design standards - e.g. terminal points, steel posts, re-tensioning etc.

Example(s)

Asset	**Safety Fences and Barriers**
Defect	**Missing pedestrian guard rail, or damaged with sharp / protruding edges**
Position	**Carriageway**

Extent	Road Hierarchy	Road Speed Limit	Priority Response
	all	all	1H

Comments
Measures to make safe can include placing temporary barriers until permanent action undertaken.

Example(s)

Asset	**Safety Fences and Barriers**
Defect	**Damaged / bent pedestrian guard rail**
Position	**Carriageway**

Extent	Road Hierarchy	Road Speed Limit	Priority Response
	all	all	2(L)

Comments Measures to make safe can include placing temporary barriers until permanent action undertaken.

Example(s)

Asset	**Hedges and Trees**
Defect	**Loss of height clearance, or dead, diseased or insecurely rooted - considered to obstruct and cause danger to users**
Position	**Carriageway**

Extent	Road Hierarchy	Road Speed Limit	Priority Response
<5.03m clearance	all	all	2(M)

Comments
Safety inspections should incorporate highway trees, including those outside but within falling distance of the highway. If a bush or tree is growing within the highway extents it will be the responsibility of the Highway Authority. If the bush or tree is growing outside of the highway extents, the Highway Inspector should make contact with the property owner and request cutting back of the foliage in accordance with the Highways Act 1980 (Section 154). Permanent obstructions lower than 5.03m (such as bridges) require appropriate warning signs (in accordance with Section 4 Traffic Signs Manual).

Example(s)

Asset	**Hedges and Trees**
Defect	**Loss of height clearance, or dead, diseased or insecurely rooted - considered to obstruct and cause danger to users**
Position	**Footway / Cycleway**

Extent	Footway Hierarchy	Road Speed Limit	Priority Response
<2.1m height clearance	all	all	2(L)
Extent	Cycleway Hierarchy	Road Speed Limit	Priority Response
<2.4m height clearance	all	all	2(M)

Comments
Safety inspections should incorporate highway trees, including those outside but within falling distance of the highway. If a bush or tree is growing within the highway extents it will be the responsibility of the Highway Authority. If the bush or tree is growing outside of the highway extents, the Highway Inspector should make contact with the property owner and request cutting back of the foliage

Asset	**Hedges and Trees**
Defect	**Loss of width**
Position	**Footway / Cycleway**

Extent	Cycleway Hierarchy	Road Speed Limit	Priority Response
Considered to obstruct and cause a danger / nuisance to users	all	all	2(M)

Comments

Asset	**Highways General**
Defect	**Street furniture damaged**
Position	**Highway, cycleway, footway**

Extent	Hierarchy	Road Speed Limit	Priority Response
	all	all	Refer to NCC Neighbourhood Services / Town Council / Parish Council

Comments
This can include litter bins, seating, planters.

Asset	**Highways General**
Defect	**Obstructions in the Highway**
Position	

Extent	Hierarchy	Road Speed Limit	Priority Response
	all	all	Obstructions that present an immediate or imminent hazard to highway users should be dealt with as a Category 1 defect. All other defects that do not represent an immediate or imminent hazard are to be classified at the Highway Inspectors discretion.

Comments

Asset	**Highways General**
Defect	**Obstructed sight lines**
Position	**Carriageway**

Extent	Hierarchy	Road Speed Limit	Priority Response
Junctions and forward sight lines	all	all	2(H)

Comments

Asset	**Highways General**
Defect	**Fords**
Position	**Carriageway**

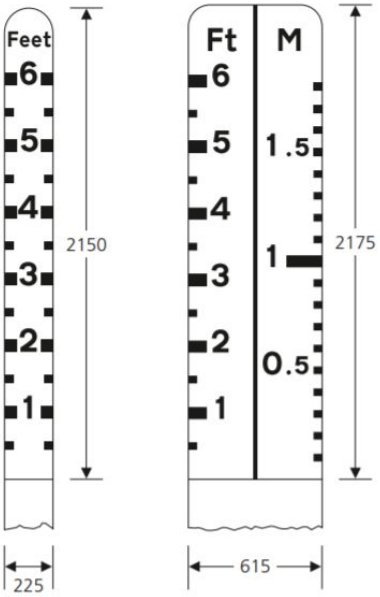
Extent	Hierarchy	Road Speed Limit	Priority Response
Missing depth gauge (ref 826 or 826.1) / 'Ford' warning signage (ref 554)	all	all	2(H)
Missing 'try your brakes' sign (ref 554.1)	all	all	2(M)

Comments
Maintenance of depth gauge is the responsibility of Bridges Inspector

Example(s)

554 Ford

554.1 Try your brakes



826 826.1

Depth gauges

Asset	**Highways General**
Defect	**Cattle Grids**
Position	**Carriageway**

Extent/items for inspection	Hierarchy	Road Speed Limit	Priority Response
Running rails Support beams Welding Holding Down Bolts Concrete Pit Fencing Bypass Gate Bypass Route Drainage	all	all	2(M)

Comments
Longitudinal gaps greater than 15mm can present a hazard to cyclists.

Example(s)

Asset	**Highways General**
Defect	**Anything else considered hazardous**
Position	**Carriageway, footway, cycleway**

Extent	Hierarchy	Urban / Rural	Priority Response
	all	both	Subject to site specific risk assessment

Comments

Example(s)