

Appendix 2

Highway Inspection Manual 2013

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1. Introduction

This document describes Wiltshire Council's Policy and Procedures relating to Highway Safety Inspections. Those carrying out Highway Safety Inspections, or managing the process, will refer to this document, which forms part of the Council's Highway Maintenance Manual. The document sets out consistent intervention levels to be applied across the highway network.

Highway Safety Inspections will therefore be undertaken using the defect definitions and frequencies given in this document.

This is a controlled document and circulation records, including updates, are maintained to ensure the current version is being used at all times.

2. Purpose of Safety Inspections

As stated in "Delivering Best Value in Highway Maintenance – The Code of Practice for Maintenance Management.

'Safety Inspections are designed to identify all defects likely to create danger or serious inconvenience to users of the network or the wider community. Such defects should include those that will require urgent attention (within 24 hours) as well as those where the locations and sizes are such that longer periods of response would be acceptable.'

Highway Safety Inspections also:

- Identify defects which should be repaired as part of a maintenance programme to arrest further deterioration and avoid more serious problems developing.
- Demonstrate a structured inspection regime, which can provide evidence for the Highway Authority to defend claims.

3. Health and Safety Issues

3.1. Introduction

Highway Safety Inspections require the recording of defects that are potentially hazardous to road users, but not at the expense of the Inspectors' own safety or that of others using the highway.

If an Inspector feels that these following procedures do not provide sufficient protection at a specific location he should bring the matter to the attention of the Local Roads Manager.

3.2. Safety Inspections from a Vehicle and on Foot

The following general guidelines are given:

Inspections from a Moving Vehicle (Driven)

- Highway Safety Inspections should be avoided during the hours of darkness/dusk or under conditions of poor visibility, e.g. snow, fog, heavy rain.
- A roof mounted flashing light bar 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 vehicle must carry signs to allow signing to Chapter 8 of the Traffic Signs Manual. At a minimum:
 - 2 No. Men at Work
 - 2 No. Road Narrows
 - 2 No. Supplementary Plates Inspection/Surveying
 - A '610' Arrow should be carried for temporary fixing to the rear of the inspection vehicle Cones.
- High visibility jackets to Class A must be worn whenever Inspectors alight 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 be switched on, and moving vehicles should not be forced to cross continuous white lining. Where the above requirements cannot be met, then advance signing must be put in position.
- When conducting part of the inspection on foot in the carriageway, or on a verge closer than one meter to the carriageway, then adequate signing should be provided. For short duration stops the placing of signs may be more hazardous than conducting the inspection. Inspectors should assess each location and, if they feel the placing of signs is more hazardous, bring the location to the attention of the Local Roads Manager.
- When conducting inspection from a moving vehicle this will be a two-man operation with the passenger carrying out the survey and recording the detail.

Inspections on Foot (Walked)

- High visibility jackets to Class A must be worn.
- Surveys should be conducted from footways or verges where possible, i.e. minimize time walking in the carriageway.
- Periods of high pedestrian/traffic flows should be avoided where possible.

4. Network Hierarchy

4.1. Road

Wiltshire Council has a defined hierarchy of roads based on their strategic importance, traffic flow and other local considerations. Three road groups have been created, each group having a different standard of maintenance applied to it. Correlation between the groups, the standard road classification method and the categories adopted in the Code of Practice for Maintenance Management have been maintained as detailed below:

Wiltshire Hierarchy	Standard System	Code of Practice for Maintenance Management
Group 1 (G1)	A, B and some C roads Some unclassified roads	Class 2 Strategic Routes Class 3a Main Distributors Class 3b Secondary Distributors
Group 2 (G2)	Most C roads and some unclassified roads	Class 4a Local Inter-connection roads
Group 3 (G3)	Some C roads and unclassified roads	Class 4b Local Access roads

The table at **Appendix 1** gives full details of road lengths, by road Group.

4.2. Footways and Cycle-ways

Wiltshire Council has classified the county footways, cycle-ways and footpaths as follows:

Footways

F1	Main Shopping Areas
F2	Busy Urban Areas
F3	Other Urban Areas and Little Used Rural

Cycle-ways

C1	Part of Carriageway
C2	Remote from Carriageway

Footpaths

Surface 'linked'

5. Safety Inspections

Safety Inspections record all defects classified as a safety hazard in accordance with the details set out in this Manual.

In most cases, the intervention level is defined as a physical dimension(s). Whilst it is not anticipated that every potential defect is measured, measurement should be used, if in doubt, to determine a suitable priority and corresponding repair time. Measurement of defects should always be made by using a straight edge and established datum points to determine a reference line from which the defect can be measured.

The frequency of Safety Inspections and time to repair a defect will depend on the road Group and the volume of traffic, including vehicles, pedestrians and cyclists.

5.1. Inspection Frequencies

	WC Hierarchy	Frequency	Method of Inspection
Roads and Adjoining Footways			
	Group 1	Monthly	Driven*
	Group 2	3 Monthly	Driven
	Group 3	6 Monthly	Driven
Footways			
	F 1	Monthly	Walked
	F 2	3 Monthly	Walked
	F 3	6 Monthly	Driven or Walked
Cycle-ways			
Part of Carriageway	As for the Road		Driven
Remote from Carriageway		6 Monthly	Walked
Footpaths			
Surfaced 'Linked'		6 Monthly	Walked
Other (Rights of Way Inspections are subject to a separate procedure)		—	

* Where footways adjoin the carriageway in busy shopping and urban areas a specific Group 1 Walked Inspection is carried out.

5.2. Defect Priorities

Some defects need to be treated more urgently than others. The Inspector will allocate one of the following six priorities to each defect in accordance with the Defect Codes described in this Manual.

Priority 1P	Permanent Repair within 24 hours
Priority 1	Temporary Repair within 24 hours and a Permanent Repair within 28 days
Priority 2	Repair within 7 working days
Priority 3	Repair within 1 calendar month
Priority 4	Repair within 3 calendar months
Priority 5	Defects that have been referred back to the Local Roads Manager for further investigation and re-prioritization if necessary
Priority 6	Features in the Highway which do not meet intervention levels, and are not defects, but may become so if not attended to

Where a Priority 1 defect is identified, it would normally be repaired within 24 hours. In the event that there is an immediate risk to road users or property by conducting works at an inappropriate time, or when a more urgent response is required, signing and guarding will be put in place until a repair can be safely carried out.

5.3. Other Factors

Many highways have been dedicated and adopted with features or a layout that would not be acceptable in current highway design. This might include steps or cellar openings, natural stone surfaces, granite setts, raised footways and/or drainage arrangements that present potential trip situations in excess of the normal intervention level. These should not be recorded as a defect, as in law the highway has been adopted with these encumbrances and the public must take appropriate care.

In these circumstances, a site risk assessment may be carried out in conjunction with the Local Roads Manager to balance conflicting demands. Such an assessment should consider factors such as location, heritage value and history of complaint and record of any trips, slips or falls. Assessments should be reviewed when a change to the character of the highway has occurred.

A record of the above will be noted on the appropriate inspection route.

5.4. Data Requirements

Defects identified during driven Safety Inspections are currently recorded using Map based computer software which has Global Positioning System (GPS) functionality (Bentley Systems Map Capture). This enables the accurate location of defects to aid timely repairs. Those items listed on the right of the asset management system screen below (Fig 1) are collected during the inspection. The same items are collected during walked footway inspections but these are currently manually recorded on paper using paper maps then subsequently entered into the system.

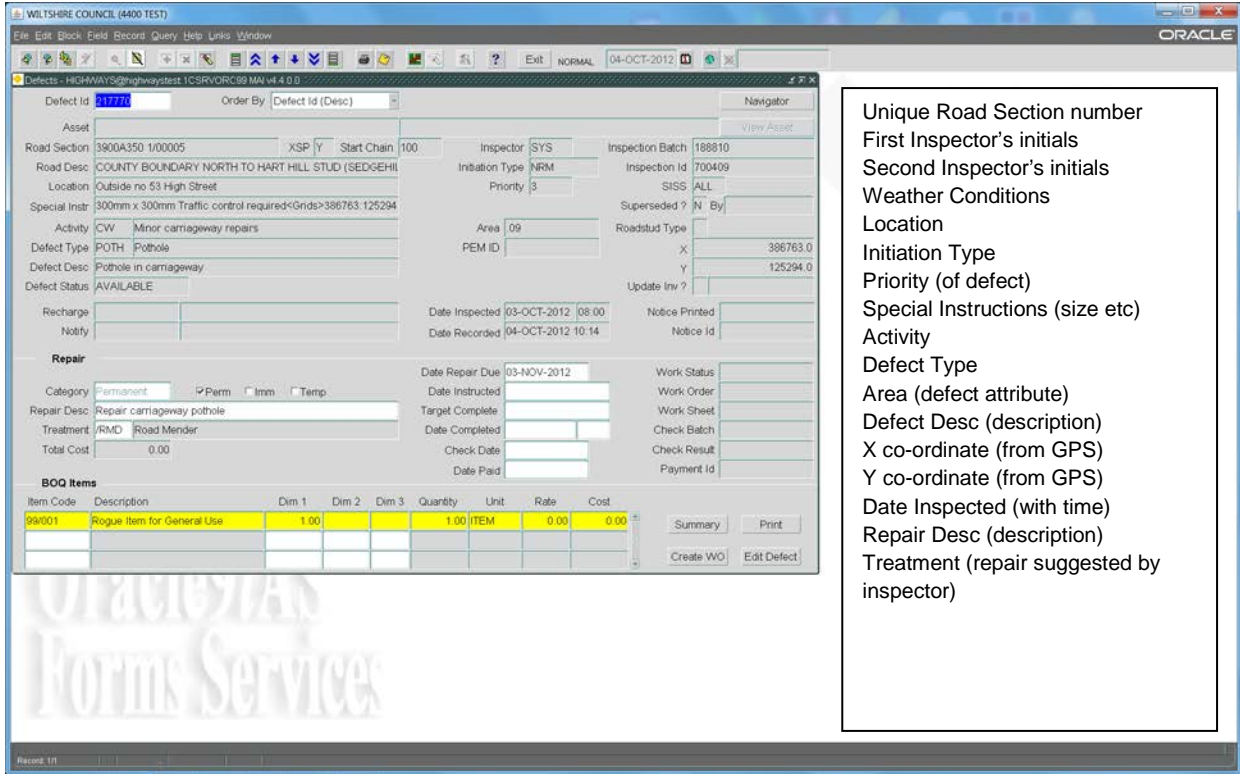


Fig 1 – Extract from Bentley Exor Highway Maintenance System

5.5. Data Processing

The inspection files, containing recorded defects, are loaded into a Highway Maintenance System (HMS) and the defects recorded are placed onto a works order which is forwarded to the contractor electronically. Once the contractor has repaired the defects, the repair date and time are sent back to the HMS and recorded against the defect thus completing the record.

A record of inspection, which is held against each road section on the network, is recorded even if no defects are found on the particular road section, during the inspection.

5.6. Other Highway Inspections

The following highway maintenance and construction functions are outside the scope of this document:

1. Winter Maintenance
2. Highway subject to Developers Agreement (Section 38)
3. Major Maintenance and Construction Sites
4. Statutory Undertakers Works (NRSWA 1990. TMA 2005)
5. Rights of Way Inspections and Maintenance

5.7. Inspector Training

To ensure the consistency of the Inspectors recording, regular in-house training will be carried out with the Inspectors in the use and understanding of the Highway Inspection Manual and, where required, additional training given to those Inspectors who fail to achieve the necessary standard.

6. Inspection Activities, Defect Codes and Priorities

Activity	Defect Code	Defect Code Meaning	Page
Carriageway (CW)	ORUN POTH DEBR DEPR	Verge Over run Pothole Debris in Traffic Lane/Roadside Carriageway Depression	10
Kerbs, Edging & Preformed Channels (Kerbed footways) (CK)	EVPJ DAMG MISS	Vertical projection Damaged Kerb (Footway edge) Missing Kerb	14
Footways and Cycle Tracks (FW)	POTH SLPF MACK DEPR OTHR	Pothole in footway Slab profile/rocking slab Cracks and gaps Depressions in footway Other Footway Defect	15
Covers, Gratings, Frames & Boxes (Drainage Structures) (DC)	IBCK MISS IDLV LEVE	Cracked or broken frame/cover Missing Cover Difference in level with road (Below) Difference in level with road (Above)	20
Signs - Face/Structure/Fittings (SN)	ACCD COND DIRT OBSG MISS	Accident Damage Sign General Sign Condition Dirty sign Obscured Sign Missing Sign	22
Fences, Walls & barriers (SB)	DAMM	Damaged safety fence/pedestrian guardrail/wall	24
Road Markings (CL)	WEAR	Worn road markings	25
Emergency - Obstructions/Cleansing/Spill (HO)	SUBS FLOD STRU OTHR OBSV	Major subsidence Major flooding Dangerous structure near highway Other emergency highway issue Observation comment	26
Street Furniture (SF)	DAST BRGL LIGH	Damaged Bus Shelter Broken pane(s) Glass Faulty lighting/Electrics	27

Carriageway (CW)

Defect	Verge Over-run	
Road/ Footway Group	G1	G2 or G3
Priority	Priority 3	Priority 5
Description	An area immediately adjacent to the road more than 150 mm deep and width greater than 200 mm	
Codes	ORUN	
Notes	<p>Most permanent repairs to G1 roads will be reinstated with either granular or bituminous material. Kerb stones may be required, at locations of repeated record.</p> <p>In some rural areas, verges may be over-ridden by HGVs or agricultural vehicles and this may not constitute a safety defect, unless the running surface of the carriageway is damaged as a result.(See Potholes - POTH)</p> <p>The permanent repair to G2 and G3 roads should reinstate the over-run with soil or granular material.</p>	



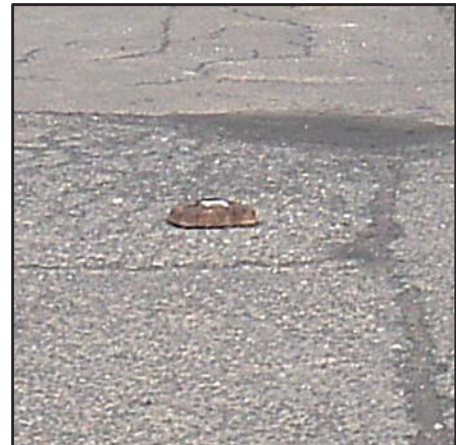
Carriageway (CW)

Defect	Pothole			
Road / Footway Group	G1		G2 or G3	
Priority	Priority 1	Priority 2	Priority 1	Priority 3
Description	More than 75 mm deep and maximum dimension greater than 250 mm	Between 40 – 75 mm deep and maximum dimension greater than 250 mm	More than 100 mm deep and maximum dimension greater than 250 mm	Between 40 – 100 mm deep and maximum dimension greater than 250 mm
Codes	POTH			
Notes	<p>A pothole located on a designated pedestrian crossing point (i.e. Pelican, Zebra, Puffin or uncontrolled but clearly identified) should not exceed a depth of 20 mm and extend in any one direction more than 150 mm – Priority 1.</p> <p>The use of suitable temporary uneven road signing may be appropriate in certain rural locations by agreement with the Local Roads Manager.</p>			



Carriageway (CW)

Defect	Debris in Traffic Lane	
Road / Footway Group	G1	G2 and G3
Priority	Priority 1	Priority 2
Description	Debris or spillage in the carriageway including – tree limbs, stones, 'catseye' casings, diesel/oil that is likely to cause a hazard.	
Codes	DEBR	
Notes	Defect may also include accumulation of stones or gravel on the carriageway, particularly at junctions where there is a hazard to braking motorists, motor cyclists or cyclists.	



Carriageway (CW)

Defect	Depression	
Road / Footway Group	G1	G2 or G3
Priority	Priority 5	Priority 5
Description	Surface irregularities and deformation.	
Codes	DEPR	
Notes	<p>Depressions in the carriageway surface can become accentuated by heavy vehicles or where the formation is susceptible to shrinkage.</p> <p>The use of temporary signs informing of an uneven road surface may be appropriate until a permanent repair can be made.</p> <p>All defects to be reported to the Local Roads Manager.</p>	



Kerbs, Edgings and Pre-formed Channels (Kerbed Footways) (CK)

Defect	Vertical or horizontal alignment, broken, missing, rocking or loose		
Road / Footway Group	G1 Walked Footways and F1 Footways	All other Footway Groups	All Road Groups (No Footway)
Priority	Priority 1	Priority 3	Priority 5
Description	Kerbs adjacent to all footways, up-stand more than 20 mm	Kerbs adjacent to all footways, up-stand more than 20 mm	Kerbs adjacent to verge
Codes	EVPJ, DAMG, MISS		
Notes			



Footways and Cycle Tracks (FW)

Defect	Pothole
Road/ Footway Group	All Road and Footway Groups
Priority	Priority 1
Description	Greater than 20 mm deep with a maximum dimension greater than 150 mm.
Codes	POTH
Notes	Permanent repairs to be reinstated with a bituminous material.



Footways and Cycle Tracks (FW)

Defect	Trip
Road / Footway Group	All Road and Footways Groups
Priority	Priority 1
Description	Up-stand greater than 20 mm
Codes	SLPF
Notes	<ul style="list-style-type: none"> * Includes rocking slabs if rock creates an up-stand, missing slabs or any other cause of level difference. * If defect as a result of Statutory Authority apparatus, advise Street Works coordinator as soon as practicable. * Includes slab profiles. * Includes up-stand around ironwork.



Footways and Cycle Tracks (FW)

Defect	Cracks and Gaps	
Road / Footway Group	G1 Walked Footways and F1 Footways	All other Road and Footways Groups
Priority	Priority 2	Priority 4
Description	Space between paving slabs or cracks in bituminous footways with a width or depth greater than 25 mm	
Codes	MACK	
Notes		



Footways and Cycle Tracks (FW)

Defect	Depressions	
Road / Footway Group	G1 Walked Footways and F1 Footways	All other Road and Footways Groups
Priority	Priority 2	Priority 4
Description	Depression greater than 40 mm in depth and covering an area less than 0.2m ² (e.g. 450 mm x 450 mm).	
Codes	DEPR	
Notes		



Footways and Cycle Tracks (FW)

Defect	Other
Road / Footway Group	All Road and Footway Groups
Priority	Priority 1
Description	Footway obstructions or defects that present danger to the public.
Codes	OTHR
Notes	<p>These defects will include:</p> <ul style="list-style-type: none"> * Fallen/Deposited Materials. * Advertisement A-Boards causing a footway obstruction. <p>Defects shall be signed and guarded at the time of inspection and issues of ownership referred to the Local Roads Manager.</p>



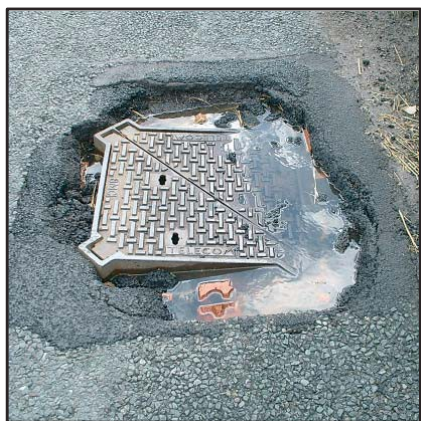
Covers, Gratings, Frames and Boxes (DC)

Defect	Cracked or Broken or Missing		
Road / Footway Group	All Road Groups		
Priority	Priority 1	Priority 3	Priority 5
Description	If a significant part of the insert is missing or damaged and liable to render the ironwork unsafe.	Any cracked or broken covers, frames and boxes.	All other conditions.
Codes	IBCK, MISS		
Notes	May require an immediate response.		



Covers, Gratings, Frames and Boxes (DC)

Defect	Difference in level			
Road / Footway Group	All Footways and G1 or G2 Roads			G3
Priority	Priority 1		Priority 2	
Description	Any ironwork within the footway with a sharp level difference greater than 20 mm	Any ironwork within the carriageway with a sharp level difference greater than 75 mm	Any ironwork within the carriageway with a level difference between 40 mm and 75 mm	Any ironwork within the carriageway with a level difference greater than 75 mm
Codes	IDLV (BELOW) LEVE (ABOVE)			
Notes	May require an immediate response.			



Signs – Face/Structure/Fittings (SN)

Defect	Road Traffic Collision
Road / Footway Group	All Road and Footway Groups
Priority	Priority 5
Description	Third party damage to street furniture.
Codes	ACCD
Notes	Photographs will be taken for each defect. Consultant's Street Lighting Engineer or Traffic Signal Engineer to be informed of all damage to illuminated signs, bollards, street lighting apparatus and traffic signals. The Local Roads Manager to be informed of all other damage. May require an immediate response.



Signs – Face/Structure/Fittings (SN)

Defect	Condition of Fitting / Face	Dirty / Obscured Sign Face	Missing
Road / Footway Group	All Road Groups		
Priority	Priority 2		
Description	Posts and fitting that are unstable or loose and sign faces that are unserviceable	Sign faces that are illegible or have been turned to face the wrong way	Sign faces missing
Codes	COND	DIRT/OBSG	MISS
Notes	Type of Signs: Stop, Give Way, Chevron, 30/40 mph, No Entry and Level Crossing. Photograph and report to the Local Roads Manager.		



Fences, Walls and Barriers (SB)

Defect	Damaged length of Safety Barrier, Pedestrian Guard Railing or fence
Road / Footway Group	All Road and Footways Groups
Priority	Priority 5
Description	Damage to Vehicle and Pedestrian Restraint Systems
Codes	DAMM
Notes	<p>Guard with Cones at time of inspection, record details, photograph and pass to the Local Roads Manager.</p> <p>Many damaged fences and barriers are the result of Road Traffic Collisions. The Local Roads Manager will assess the risk.</p> <p>May require an immediate response.</p>



Road Markings (CL)

Defect	Specific road markings which are more than 80% worn or missing	
Road / Footway Group	All Road Groups	
Priority	Priority 3	Annual Programme
Description	Stop, Give Way	Double Line Systems
Codes	WEAR	
Notes	Photograph and report to the Local Roads Manager.	



Emergency - Obstructions/Cleansing/Spill (HO)

Defect	Major Subsidence	Flooding	Damaged Structure	Other	Observation
Road / Footway Group	All Road Groups				
Priority	Priority 1				---
Description					
Codes	SUBS	FLOD	STRU	OTHR	OBSV
Notes	<p>There are other Priority 1 defects that may be encountered during a Highway Safety Inspection which must be signed and guarded with cones for safety, and photographed for the attention of the Local Roads Manager, to decide on appropriate action.</p> <p>General observations on the condition of the network may be recorded for the attention of the Local Roads Manager, e.g. verge/hedge/field straw cuttings blocking gully cover.</p> <p>May require an immediate response.</p>				



Street Furniture (SF)

Defect	Damaged Bus Shelter -		
	Broken Glass or Sharp Edges	Structural Damage	Electrical Installations
Road / Footway Group	All Road Groups		
Priority	Priority 1	Priority 3	Priority 5
Description	Third party damage or vandalism		
Codes	BRGL	DAST	LIGH
Notes	Photograph and report to the Divisional Highway Manager. Broken glass and bar wires require an immediate response.		

APPENDIX 1

Road Lengths by Group and Road Class (km)

Group 1	Urban	Rural
A Roads	168	406
B Roads	111	211
C Roads	83	99
UC Roads	0.245	4
Totals	362	720
Group 2		
A Roads	0	0
B Roads	0	0
C Roads	317	1041
UC Roads	63	50
Totals	380	1091
Group 3		
A Roads	0	0
B Roads	0	0.231
C Roads	21	121
UC Roads	1046	748
Totals	1067	869

Total Urban	1809
Total Rural	2680

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