Rotherham Metropolitan Borough Council

Rotherham MBC Code of Practice for Highway Inspection and Assessment

Highway Service
Community Safety and Street Scene

Contents

1. PREFACE

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1.1	Jan 2018	Andrew Rowley / Inspection and Enforcement Manager / Highway Network Management Unit
1.2	Mar 2019	Andrew Rowley / Highway Inspection and Street Works Manager / Highway Services
1.3	June 2023	Allan Lewis/Group Manager, Lighting, Inspections and Streetworks Andrew Saxton/Highway Asset and Drainage Manager
1.4	Sept 2023	Allan Lewis/Group Manager, Lighting, Inspections and Streetworks Andrew Saxton/Highway Asset and Drainage Manager
1.5	Dec 2024	Allan Lewis/Group Manager, Lighting, Inspections and Streetworks Andrew Saxton/Highway Asset and Drainage Manager

This Code of Practice for Highway Inspection and Assessment (CoPHIA) only applies to adopted highways and will be reviewed and updated if required within a two-yearly cycle reflective of revisions in national guidance, legislative changes and advice, safe working practice reviews, and changes to the Council's position on highway inspections.

Rotherham Council's Highway Services is responsible for the associated 'Safety Highway Inspection Policy' (see 'Appendix 1') and the 'Skid Resistance Procedure' (see 'Appendix 3').

Rotherham Council's 'Highway Services' and 'Transportation and Infrastructure Service' are responsible for the associated 'Skidding Resistance Policy (see 'Appendix 2').
This CoPHIA has been developed with the guidance of the CoPHMM, 'Well- managed Highway Infrastructure October 2016' (CoPWMHI) and 'Highway Infrastructure Asset Management Guidance Document May 2013' (HIAMG).

This CoPHIA was implemented on 01 October 2018 and supports the Council's 'Highway Asset Management Plan (HAMP). It will be reviewed every two years, and it also takes account of further advice from:

- Gallagher Bassett International Limited (Insurers);
- The Council's Legal Services, Corporate Risk Manager and Insurance and Risk Manager.
- Kennedys Law (Solicitors) and Plexus (Solicitors).

Regard is given to the consultation with the Association of Public Service Excellence (APSE), Barnsley and Doncaster Councils, and reference to both Buckinghamshire and Herefordshire Councils' inspection policies and procedures.

2. INTRODUCTION

To reflect the current structure within the Rotherham Council's Community Safety and Street Scene Service and Highway Services, routine inspection and maintenance; and the assessment and programmed maintenance have been divided into two sections within this Policy.

Rotherham Council (the Council) as Highway Authority is placed under a duty to maintain its highways by Section 41 of the Highways Act 1980. Section 58 of the Act allows the Council to mount a defence in actions against the Authority if it can demonstrate that it has taken reasonable care to ensure that the highway was not dangerous to traffic having regard to:

- The character of the highway and the traffic which was reasonably expected to use it.
- The standard of maintenance appropriate for a highway of that character and used by such traffic.
- The state of repair in which a reasonable person would have expected to find the highway.
- Whether the Authority knew or could reasonably have been expected to know that the condition of the highway was likely to cause danger to users.
- Whether warning notices were displayed when immediate repair could not reasonably be expected.

The establishment of an effective regime of inspection, assessment, recording and prioritisation of defect repairs is a crucial component of highway maintenance. It provides a robust framework to address key objectives for the maintenance of the highway in a safe and serviceable manner, as required by Section 41 of the Highways Act 1980, and consistent with the Council's HAMP.

3. HIGHWAY INSPECTION

3.1 Inspection Regime

The Council is responsible for the maintenance of over 1,191km (740 miles) of roads. These are split into different types of road classification as shown below:

- Principal roads (A class) are the main strategic routes that carry large volumes of traffic around through the Borough.
- Non-principal roads (B and C class) are main roads of local strategic importance. They are through routes that link together the principal roads.
- Unclassified roads are minor routes carrying local traffic only. They tend to be mainly residential estate roads and rural roads.

All Safety Highway Inspections (SHI's) are undertaken by area-based Highway Inspectors within the Council's Community Safety and Street Scene Service. Street Works inspections, highway enforcement activities and actions to identify programmed maintenance activities follow separate procedures.

3.1.1 Network Hierarchy

Tables 3.1.1a, 3.1.1b, and 3.1.1c below are extracted from the CoPHMM and relate to individual highway sections. They are intended to be used as a reference point from which to develop local hierarchies. The review of road hierarchies across local authority boundaries, to ensure a consistent application of procedures, forms a part of the Council's HAMP.

Footway maintenance standards as with carriageway maintenance standards will not necessarily be reflected by the road classification, this being determined by pedestrian usage and not the importance of the road in the network. Local factors such as the age, distribution of the population, the proximity of schools or other establishments attracting higher than normal numbers of pedestrians to the area should also be taken into account.

The detailed descriptions in the tables relate to the most usual circumstances encountered in the UK.

Category	Hierarchy Description	Type of Road General Description	Detailed Description
1	Motorway	Limited access motorway regulations apply	Routes for fast moving long distance traffic. Fully grade separated and restrictions on use.
2	Strategic Route	Trunk and some Principal 'A' roads between Primary Destinations	Routes for fast moving long distance traffic with little frontage access or pedestrian traffic. Speed limits are usually in excess of 40 mph and there are few junctions. Pedestrian crossings are either segregated or controlled and parked vehicles are generally prohibited.
3 (3a in the Code)	Main Distributor	Major Urban Network and Inter-Primary Links. Short - medium distance traffic	Routes between Strategic Routes and linking urban centers to the Strategic Network with limited frontage access. In urban areas speed limits are usually 40 mph or less, parking is restricted at peak times and there are positive measures for pedestrian safety.
4 (3b in the Code)	Secondary Distributor	Classified Road (B and C class) and unclassified urban bus routes carrying local traffic with frontage access and frequent junctions	In rural areas these roads link the larger villages and HGV generators to the Strategic and Main Distributor Network. In built up areas these roads have 30 mph speed limits and very high levels of pedestrian activity with some crossing facilities including zebra crossings. On street parking is generally unrestricted except for safety reasons.
5 (4a in the Code)	Link Road	Roads linking between the Main and Secondary Distributor Network with frontage access and frequent junctions	In rural areas these roads link the smaller villages to the distributor roads. They are of varying width and not always capable of carrying two-way traffic. In urban areas they are residential or industrial inter-connecting roads with 30 mph speed limits random pedestrian movements and uncontrolled parking.
6 (4b in the Code)	Local Access Road	Roads serving limited numbers of properties carrying only access traffic	In rural areas these roads serve small settlements and provide access to individual properties and land. They are often only single lane width and unsuitable for HGVs. In urban areas they are often residential loop roads or cul-de-sacs.

Table 3.1.1a Carriageways

Category No	Category Name	Brief Description
1a	Prestige Walking Zones*	Very busy areas of towns and cities with high public space and street scene 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 Footway	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.

Table 3.1.1b Footways

*At present no footways in Rotherham are categorised as 'Prestige Walking Zones'.

Category	Description
A	Cycle lane forming part of the carriageway, commonly 1.5 m strip adjacent to the nearside kerb. Cycle gaps at road closure point (no entries allowing cycle access).
B	Cycle track, a highway route for cyclists not contiguous with the public footway or carriageway. Shared cycle / pedestrian paths, either segregated by a white line or other physical segregation, or un-segregated.
C	Cycle trails, leisure routes through open spaces. These are not necessarily the responsibility of the highway authority but may be maintained by an authority under other powers or duties.

Table 3.1.1c Cycle Routes

3.2 Safety Inspections

Safety Highway Inspections (SHI's) are designed to identify, record and prioritise the repair of defects which may present an immediate danger, or significant inconvenience to users of the highway (emergencies), or to the structural condition of the highway and assets contained within the highway boundary. In addition, they may be used to identify defects of a lesser magnitude which may be included within future programs of planned maintenance work or to indicate that a more in depth service inspection may be required.

SHI's are supplemented by other inspections and assessments undertaken in line with national standards and/or good practice, including but not limited to:

- Ad-hoc inspections undertaken in response to specific matters identified through correspondence.
- Specialist inspections of certain assets within the highway boundary (for example street lighting, Vehicle Restraint Systems (VRS) and highway structures).
- Technical assessments of carriageway condition generally undertaken using machine based equipment (for example SCANNER or SCRIM surveys);
- Structural Maintenance Visual Assessments (CVI or DVI).
- Street Works inspections.

SHI's are visual inspections undertaken in accordance with risk assessment principles as outlined through the risk-based approach in section 3.7 of this document. They are designed to provide complete, accurate and timely information, as far as is reasonably practicable, on the safety maintenance needs of the highway network and its ancillary assets based on site observations and measurements. These are applied through a risk-based evaluation reflective of the characteristics of the defect, the local environment and network usage.

In line with national codes of good practice, particularly CoPWMHI, published on 28 October 2016, the characteristics of the inspection regime, including frequency of inspection, items to be recorded and nature of response, are defined following an assessment of the relative risks associated with the potential formation of defects within the highway boundary.

The inspection regime must be applied and recorded systematically and consistently. As well as information relating to defects, all inspections must also therefore record the following.

- Time of inspection and defect location.
- Weather conditions.
- Any unusual circumstances of the inspection.
- Person(s) conducting the inspection.

Arrangements are made to review the inspection, assessment, frequency and recording regime at least every two years. The outcome of this review will be considered at a senior management level within the Council's Regeneration and Environment Directorate and will consider:

- Changes in network characteristics and use.
- Completeness and effectiveness of data collected.
- Trends within defect formation.
- Success of repair programmes.
- The need for changes/amendments/additions to the inspection regime derived from risk assessment.

Proposals to amend the inspection frequency or methodology may be made should such alterations be deemed to be beneficial.

3.2.1 Inspection Frequencies

Frequencies for safety inspections of individual network sections are based upon the Carriageway Maintenance Hierarchy adopted by the Council, which in itself considers:

- Road category.
- Traffic use, characteristics and trends.
- Characteristics of adjoining network elements.
- Wider policy or operational considerations.

Although the road category within the hierarchy, in combination with traffic use, will be the main determinant of inspection frequency, site specific factors may merit a decision to temporarily or permanently increase or reduce the frequency in a specific location, for example, where the condition of a highway is susceptible to rapid deterioration additional safety inspection (ASI) may be undertaken. The Council will therefore consider the following for individual network sections:

- Incidents, extreme weather and inspection history.
- Complaints about condition.
- Claims received.
- Condition assessments (UKPMS).
- Traffic flows and changes in use.
- Defect interventions recorded.

Circumstances outside our control, for example weather conditions, network and resource availability may result in SHI's not being carried out on their due date. The tolerances in table 3.2.1a below are considered reasonable and apply Monday to Friday excluding Bank Holidays: -

Target Insp Frequency	Tolerance
Monthly	+/- 1 week
3 Monthly	+/- 2 weeks
6 Monthly	+/- 3 weeks

Table 3.2.1a Safety Inspection Tolerances

Tables 3.2.1b, 3.2.1c and 3.2.1d below detail the safety inspection frequencies adopted by the Council which may be subject to temporary changes through the risk based approach.

Carriageway Hierarchy Classification	Frequency of safety inspection	Hierarchy Category
1	Not currently used	
2	Monthly	Strategic Road
3A (Rotherham Cat 3)	Monthly	Main Distributor Road
3B (Rotherham Cat 4)	3 Monthly	Secondary Distributor Road
4A (Rotherham Cat 5)	3 Monthly	Local Link Road
4B (Rotherham Cat 6)	6 Monthly	Local Access Road

Table 3.2.1b Safety Inspection Frequency for Carriageways

Footway Hierarchy Classification	Frequency of safety inspection	Hierarchy Category
1	Monthly	Primary Walking Route
2	3 monthly	Secondary Walking Route and Safer Routes to School
3	6 monthly	Linked Footway
4	6 Monthly	Local Access Footway

Table 3.2.1c Safety Inspection Frequency for Footways

Cycle way Hierarchy Classification	Frequency of safety inspection	Hierarchy Category
1	As per carriageway frequency	**Cycle lane** - contiguous with the carriageway
2	6 Monthly	**Cycle Track, Shared Cycle/Footway** - a route for cyclists not contiguous with the public footway or carriageway or a shared cycle/pedestrian path

Table 3.2.1d Safety Inspection Frequency for Cycleways

Carriageways and footways are inspected simultaneously, with the frequency of inspection being set as the more frequent of the two intervals. Subsequently, some footways and shared cycle/footway lanes will be inspected more frequently than indicated in the tables above. Additionally, Council owned car parks will be inspected during the inspection of the adjacent highway.

3.2.2 Inspection Methodology

Safety inspections may be carried out from a slow-moving vehicle. Where the Highway Inspector determines that in their reasonable opinion the inspection cannot be undertaken and defects effectively observed from a vehicle, then the inspection will be walked.

Carriageway and Cycle Lane inspections may be undertaken by slow moving vehicle, at frequencies that reflect the characteristics of the particular highway and its use. In heavily used urban areas it may be difficult to obtain the necessary level of accuracy from vehicle based inspections and therefore the inspection may walked.

All following parts of the highway will be walked inspections as will any other parts of the highway where it may be difficult to obtain the necessary level of accuracy from vehicle based inspections:

- Flagged or other modular footways.
- Urban Principal Roads.
- Cat 1 footways.
- Footpaths.
- Cycle ways (remote from the carriageway).

All other parts of the highway may be inspected for safety from a slow moving vehicle with an inspection team of two comprising observer and driver.

Chapter 8 of the Traffic Signs Manual 2009 (Part 2 Operations) deals with slow moving continuous operations such as highway maintenance inspections, road testing and white lining operations

The requirements are:

- The work should be carried out at off-peak times.
- Operatives should wait for a sufficient gap in the traffic prior to marking any defects on the carriageway. Safe gaps in the traffic are only likely to occur in traffic flows of less than 40 vehicles per minute on three-lane carriageways. At least three seconds per lane, or a safe gap of 150 meters per lane, should be allowed when estimating crossing times.
- Operatives should face oncoming traffic or use a lookout while marking defects.
- Where gaps in the traffic are insufficient, operatives should not attempt to mark the defect but instead should estimate the dimensions of the repair.
- Work on three-lane single carriageway roads should be carried out from the nearside lane at a speed limit of minimum 30 mph.

In order to determine the appropriate method of working, single and dual carriageway roads are split into categories depending on the daily vehicle flow per carriageway.

The road categories are:

- Category 1: greater than 80,000 vehicles/day.
- Category 2: 20,000 to 80,000 vehicles/day.
- Category 3: less than 20,000 vehicles/day.

3.2.3 Inspection by Vehicle

Rotherham's highway network does not include any Category 1 roads. For Category 2 and 3 roads, the following method should be followed by the Highway Inspector (Operative):

- Drive at a minimum of 30 mph on the nearside lane of the carriageway.
- Pull up on the hard shoulder if available or at a safe location to record or assess defects.
- On roads where a slow moving vehicle could be a hazard to other road users an amber light should be attached to the roof of the surveying vehicle.
- On a dual carriageway with a hard shoulder, the inspection should be undertaken from the hard shoulder if this is practicable and safe to do so.

Table 3.2.3a indicates the 'Safety Inspection Approach Risk Assessment'.

Hazards Identified	Risk Level	People at risk	Controls	Comments / actions
Hazards associated with the post of Highway Inspector	Various	Inspector and Highway Users	Refer to Chapter 8 Traffic Signs Manual 2009 (Part 2 Operations) and 'Lone Working Risk Assessment '.	
Survey vehicle being driven at low speeds (≤10mph)	Med	Inspector and highway users	Vehicle to be equipped with warning amber lamp and 'Highway Maintenance' signage displayed on the vehicle.	
Vehicular traffic queuing behind survey vehicle	Med	Inspector and highway users	Highway Inspector to monitor build-up of traffic travelling behind, and pull over where safe to do so to allow queuing vehicles to overtake.	Hazard warning lights to be used in addition to flashing beacon when survey vehicle is stationary.

Highway inspector walking and marking out on the highway.	High	Inspector and highway users	Inspector to wear reflective clothing, walk towards oncoming traffic and face oncoming traffic when marking out defects. Awareness required of traffic volumes and not to spray mark defect if site conditions dictate otherwise.	
Weather (fog/ heavy rain/snow)	Med	Inspector and highway users	Inspections to be rescheduled when conditions/visibility has improved.	
Lack of forward and rear visibility (brows, bends and dips in the road)	High	Inspector and highway users	Highway Inspector to assess whether the survey vehicle can be driven safely at 10 mph	

Table 3.2.3a Safety Inspection Approach Risk Assessment

3.2.4 Inspection Procedure

- Driven safety inspections shall only be undertaken as detailed in Safety Inspection Approach and the Safety Inspection Method Risk Assessment.
- Vehicles used for inspection will carry “Highway Maintenance” signs displayed in the rear window.
- On roads where a slow moving vehicle could be a hazard to other road users an amber light should be attached to the roof/rear window of the surveying vehicle.
- Reflective clothing will always be worn when undertaking inspections.
- Inspections should wherever possible, be carried out from the footway. The recording of data must be carried out from the footway or other safe place.
- In heavy traffic it is essential that marking out be undertaken by two people. The second person will concentrate on safety and be on the lookout for traffic.
- Where traffic is very heavy further safety measures may be necessary such as rescheduling the inspection for a time of day when traffic is lighter. In some circumstances traffic management measures may be required.
- Under no circumstances should the officer undertaking the inspection handle needles, syringes or other sharp objects.
- All observed defects will be risk assessed taking into consideration the ‘Minimum Investigatory Levels’ specified in Table 3.7.1a.
- Defects representing a risk to highway users will be recorded using MDT and the level of response will be determined on the basis of risk assessment (see sections 3.5, 3.6 and 3.7).

3.3 Service Inspections and Programmed Maintenance.

3.3.1 Risk Management

Service inspections should be strongly focused on ensuring that the network meets the needs of users and comprise more detailed specific inspections of particular highway elements, to ensure that they meet the levels of service defined within the Council's HAMP. Such inspections may be prompted by Highway Inspectors through the safety inspection process and subsequent provision of regular reports to Service Managers.

Risk assessments for service inspections are dealt with differently to safety inspections. Serviceability related defects are mainly related to network reliability and integrity and the ability of the network to meet the needs of users. Risks are assessed by reference to the HAMP by taking due consideration of levels of service, relative priorities and available budget.

Operational Risks are faced in the day-to-day delivery of services. Street Lighting for example is associated with increased personal security, so any potential service level changes to lighting levels will require consideration of risk impact.
Flood risks associated with drainage assets pose operational risk through potential flooding to highway and properties. Regular maintenance of existing highway drainage assets is a priority of the Council in maintaining the safety of the public highway.

In order to capture these risks, and to ensure compliance with corporate procedure, the Managers' of highway assets including Roads (carriageways, footways and verges), Street Lighting, Drainage, Bridges/Structures and Traffic Systems identify risks, at least quarterly, in respect of their individual assets/services. A risk assessment is then undertaken to evaluate a risk factor and an appropriate RAG (red, amber, green) rating in accordance with the Council's "Risk Management Policy and Guide 2019" culminating in an overarching Service Risk Register.

Any red or amber risks that are subsequently considered of significance for possible inclusion in the Council's Strategic Risk Register are referred on to the Council's Corporate Risk Manager for consideration.

3.3.2 Road Maintenance

As a result of the regular condition surveys of various types undertaken on the network (see section 4.3), the Council holds condition data on all of the roads, footways and footpaths making up the highway network. This data is mapped within the highway asset management system. In addition to prioritising programmes for maintenance schemes, the data is also used to identify areas where more routine programmed maintenance repairs would be beneficial.

Wherever possible such programmed repair will be coordinated with the other programs of work to ensure the most efficient delivery of repair work. It also demonstrates a coordinated approach to highway users.

3.3.3 Street Lighting

Routine electrical inspections should be carried out at six year intervals to ensure street lighting units comply with relevant electrical regulations. At each attendance for routine electrical testing and other reactive maintenance the condition of the unit is assessed visually. This visual inspection forms a risk-based evaluation with regards identification of ageing columns that are prioritised for replacement in line with ILP technical report 22 Managing a Vital Asset: Lighting Supports.

In addition to visual inspections, in ten year intervals, each street lighting unit should be inspected and assessed by an independent testing contractor to assess the structural condition of the street lighting units. The testing contractor will provide a report on the street lighting units structural and visual condition with recommendations for replacement programs.

3.3.4 Highway Structures

General inspections are undertaken every 2 years to ensure highway bridges, including subways and culverts as well as footbridges are safe for the passage of vehicular and/or pedestrian traffic. Bridge condition details are recorded at these inspections.

Principal inspections are carried out at intervals of between 6 and 12 years at the more significant highway structures. This interval is determined through a risk assessment following national guidance. These inspections together yield urgent defects that are repaired as well as refurbishment needs for each structure that are detailed and prioritised around a risk based approach in order to complete appropriate work programs.

3.3.5 Traffic signals

Programmed inspections to all traffic signal equipment are undertaken 3 times per year to all equipment and urgent defect repaired at the time by the traffic signals term maintenance contractor. Special inspections in response to defects reports will also be made if appropriate when reports are received.

3.3.6 Highway Trees

The Council inspects its trees pro-actively to a schedule, based on risk, in accordance with CoPWMHI, with most highway trees inspected on a 3-year inspection cycle. A new Tree Management system was agreed in May 2024. This will allow a variation on inspection periods based on risk from data gathered from existing inspections. This will be in line with a Quantified Tree Risk Assessment (QTRA). Reactive inspections may be triggered by Highway Inspectors at any time after identifying possible defects and risks to highway users through safety inspections and on receipt of reports from local residents, the general public and or ward members

3.3.7 Highway Drainage

The road gullies in Rotherham (of which there are currently 46,880) are inspected, and if necessary cleansed, at least once per year in accordance with CIRIA (Construction Industry Research and Information Association) Report 183. The road gullies on the majority of roads (generally estate roads) are inspected once per year with frequencies increasing up to four times per year on roads such as Rotherham Gateway. The visits are recorded electronically using a GPS (Global Positioning System) fitted to the Gully Flushers. From June 2023 data collected from gully maintenance will be collated and analysed over a 3 year period and future gully maintenance visits and cleansing work may be increased, or decreased using a risk based approach.

Any defects with road gullies are recorded using the GPS system and a list of highway drainage assets (which includes road gullies) requiring repair is held electronically. Due to a backlog of highway drainage assets requiring repair, remedial works are prioritised according to the severity of the flooding, the frequency of the flooding and the length of time the Highway Authority has been aware of the defect.

Other assets, such as soakaways, silt traps, linear drainage, petrol interceptors, outfalls and flow regulators, are inspected, and if necessary cleansed, between once per year and twelve times per year. The frequency is determined using data collected during previous inspections. If an asset is inspected twice per year and requires maintenance during each inspection the frequency of visits will be increased to four times per year. Should an asset which is inspected twice per year be found to require no maintenance during inspections, the frequency of inspections will be decreased to once per year.

3.4 Customer Reports

Complaints, reports and requests for maintenance from members of the public and other stakeholders will be received via the Council's Customer Contact Centre which is contactable 24 hours per day and 7 days per week. These reports are allocated a unique reference number. Reports of situations that could be potentially hazardous to highway users will be telephoned directly through to the appropriate Highway Inspector.

Through the Risk Based Approach (RBA), should the Highway Inspector evaluate that urgent action be required to make the highway safe, then the Highway Delivery Team will be contacted immediately to arrange for relevant resources to be deployed and recorded.

3.5 Defect Categories

This CoPHIA defines defects in two categories:

- Emergency (Cat ‘A’) are those requiring prompt attention because they represent an immediate hazard;
- Category 1 (Cat ‘1’) are those requiring priority attention as they represent a potential risk to road users or to the integrity of the highway asset.

Cat ‘1’ defects are then further subdivided into High, Medium and Low categories to enable the inspector to make an appropriate assessment of risk.

3.5.1 Cat ‘A’ Defects

Defects will be made safe at the time of the inspection, if reasonably practicable. In this context, making safe may constitute the Highway Inspector parking a vehicle in such a manner as to protect users of the highway from the defect, or by maintaining a presence to advise highway users accordingly. The emergency call procedures will be adopted by the Highway Inspector in circumstances where it is not possible to make safe the highway at the time of inspection, thereby ensuring that appropriate resources are mobilised by the Highway Delivery Team to make the defect safe. Examples of typical Cat ‘A’ defects are shown below.

Lighting Column access cover Removed exposing cables

Carriageway Collapse

Missing Chamber Cover

3.5.2 Cat ‘1’ Defects

Cat ‘1’ defects are categorised according to priority: High (Cat ‘1H’), Medium (Cat ‘1M’) and Low (Cat ‘1L’), with response times specified in section 3.7 (see table 3.7.6a). A means of appropriately categorising Cat ‘1’defects is also covered in section 3.7 (see subsection 3.7.5).

Examples of typical Cat '1' defects are shown below.

Carriageway Pothole deemed Cat 1 by the Highway inspector using the Risk Based Approach

Uneven flagged Footway and potential tripping hazard

3.5.3 Safety Inspection Defect Types

The Highway Inspector's decision in categorising defects through the risk based approach may be critical in securing the safety of highway users and may also be subject to legal scrutiny in the event of an accident occurring at or near to the defect location. Complete and accurate records will be essential.

Table 3.5.3a indicates typical issues that may be identified by the Highway Inspector during SHIs (Section 3.6 provides further guidance). Such issues are coded and recorded through the use of MDT, and where required reported to the relevant asset owner or Service Manager.

Type	Code	Footways / Verges /Car Parks	Carriageways
Surface Maintenance	**FURN** **SKID**	Arrange urgent repair or making safe of serious footway defects, defective ironware, kerb or edging defects and third party reinstatements/apparatus.	Arrange urgent repair or making safe of potholes and other surface defects including surface heave causing significant unevenness, ironwork, and channel defects Report any areas where serious loss of skidding resistance suspected.
Highway Drainage	**DRAN**	Report excessive standing water or water flowing onto the footway. Report blocked gullies, drainage channels, or grips.	Arrange to make safe as necessary and report excessive standing water or water flowing onto or across the carriageway. Report blocked gullies or kerb drainage systems.
Obstruction	**OBST**	Report or action serious obstruction of the footway from whatever cause.	Report or action serious obstruction of the Carriageway from whatever cause.
Verge Maintenance	**VERG**	Arrange for urgent repairs or make safe potential hazards.	Report any obstruction to visibility caused by verge overgrowth.
Carriageway Channel Detritus	**CHAN**		Arrange for carriageway to be swept / cleansed to help prevent gulley blockages.
Safety Fences & Barriers	**FENC**		Arrange to make safe as necessary and report damaged safety fences and barriers.

Road markings / road studs	**MARK**		Remove any displaced road studs from trafficked areas. Report missing Stop/ Give Way markings. Report on deteriorated linemarkings.
Highway Trees / trees affecting highway	**TREE**	Report potential hazards caused by the condition of trees, shrubs and hedges including surface disturbance from roots.	Report potential hazards caused by the condition of trees, shrub, hedges and any significant heave and unevenness from tree roots*
Moss growth	**MOSS**	Arrange for treatment to remove any slipping hazard. Report for inclusion on moss treatment programme.	
Japanese Knotweed	**JPKW**	Arrange for treatment to remove any hazard. Report for inclusion on treatment programme.	
Highway Structures	**STRU**	Report potential hazards caused by the condition of bridges, footbridges, retaining walls and subways	Report potential hazards caused by the condition of bridges, footbridges, retaining walls and subways.
Street Cleansing	**CLEA**	Remove any debris from footway which might trip pedestrians. Report serious or extensive accumulations of leaves / litter. Report spillages.	Remove any easily moved potentially hazardous debris from trafficked areas or arrange removal. Report serious or extensive accumulations of leaves / litter. Report spillages.
Traffic signs / Signals	**SIGN**	Report potentially hazardous damage to signs, signals and bollards	
Street Lighting	**LIGH** **SLVG**	Report potentially hazardous damage to columns Report or action significant obstruction of street lighting by tree or shrub growth.	
Street Name Plates	**NAME**	Arrange to make safe potentially hazardous damage, report for replacement.	
Litter Bins	**BINS**	Report potentially hazardous damage	
Other	**OTHR**	Report any other potential hazard observed.	
Scheme Required	**SCH**	Report if scheme may be required.	Report if scheme may be required.
Bin Collection Day	**BINC**	Bins left on highway on bin collection day.	Information only.
Car Parks	**CPOW**	Car park requires other works.	
Hedges	**HEDG**	Overhanging vegetation.	
Snow Cover	**SNOC**	Highway covered in snow.	
Arrestor Bed**	**ARRE**	Report and arrange remedial works following vehicle intrusion(s).	**Non currently constructed

Table 3.5.3a Types of defects to be recorded

*See 3.6.8 Guidance and Procedures for Inspectors – Highway Trees

3.6 Guidance and Procedures for Inspectors

3.6.1 Surface Maintenance

Some defects may not be the responsibility of the Council to repair, for example, the adjustment or replacement of a Utility Company inspection chamber cover and frame. In such cases the defect will be recorded in line with normal procedures. It will also be temporarily made safe should such actions be necessary to protect the safety of the travelling public or the integrity of the highway. All relevant information will be notified directly to the third party who will be responsible for continued maintenance of the temporary repair and for the subsequent full repair of the defect. Should the third party not provide an acceptable response, then the Council may take appropriate action itself to instigate appropriate repairs and to recover the costs of works undertaken from the third party responsible.

3.6.2 Council Owned Car Parks

The safety inspection (SCI) of the defined car parks below shall be undertaken at the same time as that of the adjacent highway. The minimum investigatory level (MIL) for surface defects will be as for footway defects.

Table 3.6.2a

BAILEY HOUSE CAR PARK	ROTHERHAM TOWN CENTRE
YORK ROAD CAR PARK	ROTHERHAM TOWN CENTRE
WELLGATE NORTH CAR PARK	ROTHERHAM TOWN CENTRE
CHURCH STREET CAR PARK	SWINTON
CHURCH STREET COLLEGE CAR PARK	WATH-UPON-DEARNE
VICTORIA STREET CAR PARK	KILNHURST
ABATTOIR CAR PARK	ROTHERHAM TOWN CENTRE
SCALA CAR PARK	ROTHERHAM TOWN CENTRE
UNITY PLACE CAR PARK	ROTHERHAM TOWN CENTRE
DOUGLAS STREET CAR PARK	ROTHERHAM TOWN CENTRE
WAREHOUSE LANE SARACENS CAR PARK	WATH-UPON-DEARNE
WAREHOUSE LANE CAR PARK	WATH-UPON-DEARNE
GREASBROUGH ROAD CAR PARK	PARKGATE
BISCAY WAY LIBRARY CAR PARK	WATH-UPON-DEARNE
QUEEN STREET CAR PARK	SWINTON
WALKER STREET CAR PARK	SWINTON
DRUMMOND STREET CAR PARK	ROTHERHAM TOWN CENTRE
CONSTABLE LANE CAR PARK	DINNINGTON
HOLLYBUSH STREET CAR PARK	PARKGATE
CLIFTON HALL CAR PARK	ROTHERHAM TOWN CENTRE

Any ‘Cat A’ and ‘Cat 1’ defects identified at the inspection will be ordered for repair within the timescales specified in Table 3.7.6a by the appropriate highway response team. If required to clearly record the location of the defect then a photograph of the location may be taken and attached to the inspection record.

Any other potential safety issues, for example relating to barriers or furniture, will be identified in line with the guidance below.

General deterioration needing more extensive repair or replacement will be recorded and reported to Parking Services.

3.6.3 Highway Drainage

Water on the carriageway can cause a danger through aqua-planing, vehicles swerving to avoid standing water and through ice formation in the winter. It will also cause annoyance to pedestrians through spray affecting the footways. The most common causes of extensive standing water are blockages to gullies, drainage channels or grips.

Water flowing across the footways or carriageway is of particular concern because of the danger of ice formation.

All potentially hazardous issues recorded by the Highway Inspector will be reported to the Drainage Group (R&E-drainage@rotherham.gov.uk) should further action be required.

3.6.4 Obstruction

Physical obstruction can be caused by anything deposited on, growing in, growing over or suspended over the highway. The extent of any potential danger can only be judged in each individual circumstance taking into account the nature of the obstruction, site layout and the level of traffic using the highway.

In the majority of instances, the most appropriate first action will be to seek the removal of the obstruction by the person responsible for it. If this results in a refusal or no action within a reasonable period, then enforcement action should be considered.

In exceptional circumstances direct action by the Delivery Teams to remove the obstruction may be warranted. This should be discussed with the Team Leader before instructing the work.

3.6.5 Verge Maintenance

Verges can present hazards to highway users through poor surface condition or through overgrowth. Hazardous defects within the surface of the verge should be dealt with as for other surface repairs having due regard to the risk based approach in section 3.7. Any obstruction to sight lines should be reported for action.

3.6.6 Safety Fences and Barriers

Potentially hazardous faults with safety barriers should be made safe and will be recorded and reported to the Street Team – contact details Streetpide.SLAMS@Rotherham.gov.uk

Hazards may possibly include:

- Projections from the damaged fence or barrier extending into areas which may reasonably be used by pedestrians or vehicles.
- Lengths of missing guard rail where a danger to highway users or others could be anticipated. For example, a length of safety fencing protecting a lighting column from impact would not indicate a need for temporary action but a missing section of pedestrian guard rail above a vertical drop would indicate a need for urgent action.
- Vehicle impact damage to the guard rail that may not have been previously reported / identified.

3.6.7 Road Markings and Road Studs

Loose road studs should be removed from trafficked areas and reported to the Street Lighting Manager, as should any missing ‘Stop’ or ‘Give Way’ road markings. Also lengths of missing or worn regulatory markings such as yellow lines or box junctions should be reported.

3.6.8 Highway Trees

Trees and shrubs can be the cause of potential danger to highway users through their physical condition. Any tree appearing to be dead, damaged or badly diseased should be recorded and reported to the Tree Service Manager for further investigation. Extensive root growth can cause significant damage and unevenness to the surface of footways, particularly in urban areas. The HI will use the RBA to assess the surface condition and may seek arboricultural and Highway Asset Management advice for possible improvements that could be made without causing harm to the tree. A reduced level of regularity in these locations is acceptable (as noted in COPWMHI) and the HI will use this awareness when assessing safety. For any defects noted the HI will use the guidance contained in 3.5.3 and table 3.5.3a.

3.6.9 Street Cleansing

Any debris having the potential to cause a danger to highway users should be removed and placed in a safe location if this can be achieved. The Highway Cleansing Teams and the Council’s Customer Contact Centre will be informed by telephone should immediate action be required to remove the following from the highway:

- Debris or fly-tipped material;
- Needles and other sharp objects;
- Large scale spillages;
- Dead animals etc.;
- Racist or obscene graffiti.

An accurate description of the material to be removed must be provided for the Delivery Team such that appropriate resources are deployed. Any fly-tipped material suspected of containing asbestos must be reported.

Under no circumstances should Highway Inspectors handle needles, syringes or other sharp objects.

3.6.10 Arrestor Beds

Any observed disturbance to the surface of an Arrestor Bed should be considered for remedial works and subsequently reported to The Highway Inspection and Street Works Manager.

There are no arrester beds currently constructed in the borough. Any new assets will be inspected and reported as per 3.6.10.

3.6.11 Traffic Signs and Traffic Signals

Potentially hazardous faults should be recorded and telephoned through to the Council's Customer Contact Centre immediately on locating them.

Faults that may represent a hazard include:

- Electrical covers missing or dislodged.
- Wiring exposed.
- Illuminated bollards or their temporary replacements missing, Insecurely rooted furniture, including sign posts.
- Traffic signal heads or sign lighting units hanging loose.
- Missing or damaged sign poles and sign faces.
- Red/Amber/Green missing signals or twisted around or hanging loose.
- Inoperative red or green man signals.

3.6.12 Street Lighting

Potentially hazardous faults should be phoned through to the Council's Customer Contact Centre immediately on locating them.

Faults that may be hazardous include:

- Missing doors from columns.
- Severely leaning or visibly damaged columns.
- Rocking columns.
- Hanging lanterns and lantern bowls.

Appropriate action will be arranged where street lighting is likely to be significantly affected by tree or shrub growth. In the majority of instances, the most appropriate first action will be to seek the removal of the obstruction by the person(s) responsible. If this results in a refusal or no action within a reasonable period, then enforcement action should be considered.

In exceptional circumstances direct action by the Delivery Teams to remove the obstruction may be warranted. This should be discussed with the Team Leader before instructing the work.

3.6.13 Street Name Plates

Signs that are potentially hazardous due to damage, possibly with sharp edges or being insecurely fixed, should be recorded and telephoned through to the Council's Customer Contact Centre immediately on locating them.

Reports of missing plates should be reported to the Street Lighting Team for permanent replacement.

3.6.14 Litter Bins

Bins that are potentially hazardous due to damage, possibly with sharp edges or being insecurely fixed should be recorded and reported by telephone through the Council's Customer Contact Centre.

3.6.15 Weekly Defect Report

Defects that have not been risk assessed at 'Cat A' or 'Cat 1' are recorded and through the use of the codes displayed in Table 3.5.3a. These records form part of the Highway Asset Database. On a weekly basis a report is produced and circulated to the appropriate managers for them to assess any action required.

3.7 Risk Based Approach

The purpose of the risk assessment is to determine the scale of the risk presented by a defect in order to prioritise the appropriate response. The implementation of a risk based approach (RBA) to safety highway inspection is set out below. The Council's 'Risk Management Policy and Guide' adopts a '5x5' risk matrix, which is consistent with that included within the HIAMG on page 79 'Figure 10 Qualitative Matrix Approach'. A '5x5' matrix is adopted within this CoPHIA (see table 3.7.5a) which also provides for a risk factor score range from 1 to 25.

3.7.1 Minimum Investigatory Levels

Any highway feature with a defect level which corresponds to, or is in excess of, the Minimum Investigatory Level (MIL) is to be assessed by the Highway Inspector using the risk based approach.

To establish minimum investigatory levels a number of comparable local authority's criteria have been taken into consideration.

- A depth of 40mm or greater and extending in any one direction >250mm in the carriageway;
- A rapid change of profile >25mm and extending in plan dimension <600mm in the footway, trips of 20mm or greater, rocking modular paving of 20mm or greater.

Table 3.7.1a sets out the MIL's for consideration by Rotherham's Highway Inspectors. The MIL's specified are similar to the intervention levels specified in previous editions of the Council's "Code of Practice for Highway Inspection and Assessment" up to June 2017. These intervention levels were established with reference to CoPHMM taking into account all types of highway users.

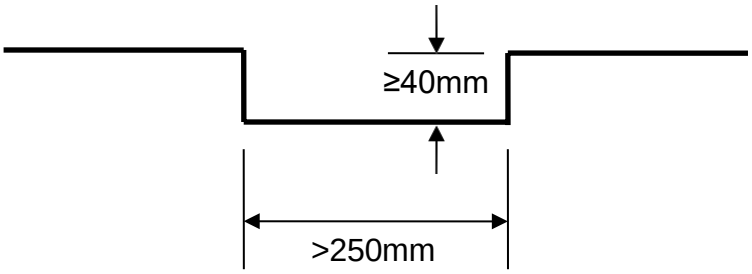
Defects which do not meet the MIL will not generally be identified on a safety inspection, unless the inspector deems it necessary to do so. The MIL is provided as a guide only. Should the Highway Inspector deem it necessary to categorise any specific defect at a higher level, following risk assessment, then this will be recorded.

Highway Feature	Surface Type	Defect	Minimum Investigatory Level (action subject to RBA)
Carriageway and Cycle Way contiguous with carriageway	Flexible/Rigid	Pothole Depression	40 mm depth and 250 mm width 50mm over 600mm
	Modular/Rigid	Missing unit Abrupt difference in level. Depression	All occurrences 40mm 50mm ovr600mm
Pedestrian Crossings Crossover Points Steps Footway Area Cycle Route Type B Kerb, Channel or Edging adjacent to a pedestrian paved area	Flexible/Rigid	Pothole	20 mm depth
	Modular/Rigid	Missing unit. Abrupt difference in level. Misaligned. Damaged. Rocking.	All occurrences 20mm 20mm 20mm 20mm
Kerb, Channel or Edging not adjacent to a pedestrian paved area		Missing unit. Abrupt difference in level. Misaligned. Damaged. Rocking.	All occurrences 20mm 20mm 20mm 20mm
Verge	Unpaved	Damaged	RBA

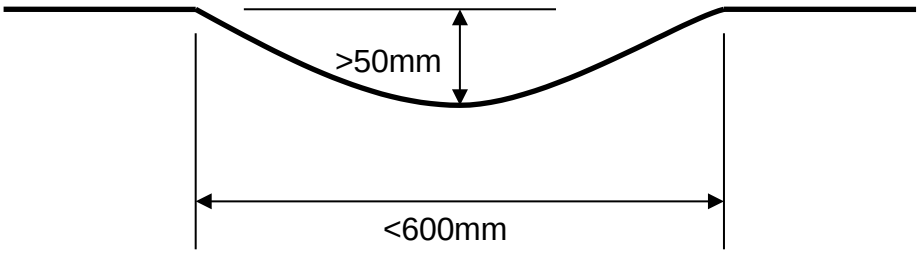
Table 3.7.1a Minimum Investigatory Levels

3.7.2 Definition of MIL to Carriageways

MIL is defined as a defect in the highway which impairs the value of the usefulness of the carriageway and provides a potential safety hazard for road users. A sharp edged depression (pot hole) of 40mm or greater in depth and extending in any one direction greater then 250mm constitutes a potential safety hazard and should be repaired in accordance with the set response times. This can also be a hump.



If the potential defect has no vertical edge but does have a rapid change of carriageway profile greater then 50mm vertical to the surface and extending horizontally in any direction by less than 600mm then this may constitute a potential safety hazard and if they meet the criteria for MIL should be repaired in accordance with the set response times. Such changes in profile can be vertically in the upward or downward direction.



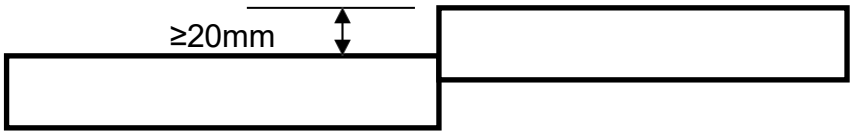
Definition of MIL to Footways

MIL is defined as a defect in the footway which impairs the value of the usefulness of the footway and provides a safety hazard for pedestrians:

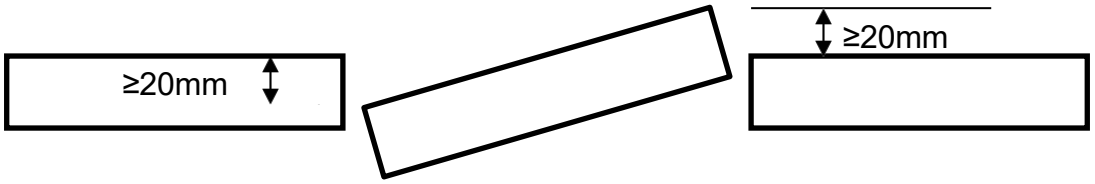
- Trips of 20mm or greater.
- Rocking modular paving of 20mm or greater.
- Rapid change of footway profile greater than 25mm vertically to the surface and extending horizontally in any direction by less than 600mm.

These defects should be repaired in accordance with the set response times. Such changes in profile can be vertically in the upward or downward direction.

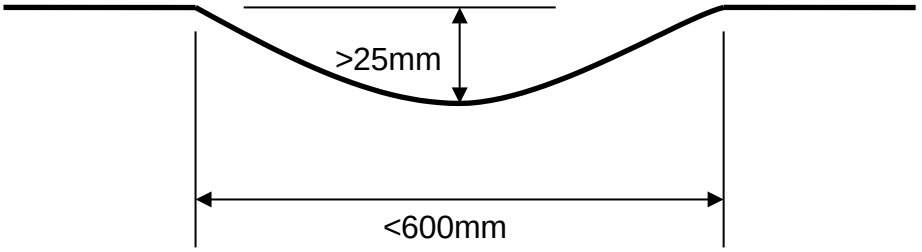
Trips of 20mm or greater.



Rocking modular paving of 20mm or greater



If the potential defect has no vertical edge but does have a rapid change of footway profile greater than 25mm vertically to the surface and extends horizontally in any direction by less than 600mm, then this would meet MIL and may constitute a safety hazard and should be repaired in accordance with the set response times. Such changes in profile can be vertically in the upward or downward direction.



3.7.2 Risk Impact

Potential impact is quantified by the Highway Inspector assessing the extent of damage likely to be caused should the risk be realised. The impact/severity is affected by the magnitude or dimension of the defect and other variables such as mode of transport, road speed and the vulnerability of those involved.

The impact of a risk occurring is assessed as follows:

- Catastrophic.
- Major.
- Significant.
- Minor.
- Insignificant.

The impact of a risk occurring is measured on a scale of 1 to 5 (1 insignificant to 5 catastrophic). Table 3.7.2a provides guidance.

Impact rating	Score	Description	Possible Indicators
CATASTROPHIC	5	The Hazard presented by the defect, or due to the short term structural deterioration in the defect, could result in a fatality or serious injury.	Impact will result in serious damage to persons or property. Highway users will instinctively react to avoid the defect and this will place them in peril. The defect could destabilise a vehicle and this will place highway users in peril.
MAJOR	4	The Hazard presented by the defect, or due to the short term structural deterioration in the defect, could result in injury or serious claim against the Authority.	Impact will result in damage to persons or property, from which they are likely to recover. Highway users will instinctively react to avoid the defect. The defect could destabilise a vehicle.

SIGNIFICANT	3	The Hazard presented by the defect, or due to the short term structural deterioration in the defect, could result in minor injury or claim against the Authority. If untreated the defect will contribute to the deterioration in the overall condition of the Highway Asset. The defect is likely to deteriorate further before the next safety inspection.	Most impacts will not result in any injury. Highway users are unlikely to react to avoid the defect and the impact will not interrupt their passage. The defect will be felt and recognised as a defect by most Highway users, and its presence will be a negative influence on their perception of the Highway Asset. If untreated the defect will accelerate the local deterioration of the Highway Asset.
MINOR	2	The Hazard presented by the defect, or due to the short term structural deterioration in the defect, is unlikely to result in injury or claim, but the defect will contribute to the deterioration in the overall condition of the Highway asset. The defect is unlikely to deteriorate further before the next scheduled safety inspection.	The defect will be recognised by Highway Inspectors as requiring attention, but is unlikely to be felt and recognised as a defect by most Highway users. It is unlikely that the defect will cause any injury.
INSIGNIFICANT	1	The defect is due to the short term structural deterioration. It is highly unlikely to result in both an injury or claim and further deterioration.	Whilst the defect will may be recognised by Highway Inspectors as requiring attention, it is highly unlikely to be recognised as a defect by Highway users. The defect is very unlikely to cause injury.

Table 3.7.2a Impact Ratings

The vulnerability of all highway users, including cyclists and pedestrians to certain highway defects will be reflected in the risk assessment carried out when deciding the category of the defect.

3.7.3 Risk Likelihood

Likelihood is the Highway Inspector's assessment of probability of the defect affecting the safe passage of traffic along the highway or affecting the structural integrity of the highway between scheduled inspections. It follows an assessment of the Road Hierarchy and the location of the defect within the highway in relation to other risk factors/features in the environment.

The likelihood of a risk occurring is assessed as follows:

- Almost certain.
- Very likely.
- Likely.
- Possible.
- Unlikely.

The probability is quantified by assessing the likelihood of users, passing by or over the defect, encountering the risk. As the probability is likely to increase with increasing vehicular or pedestrian flow, the network hierarchy and defect location are important considerations in the assessment. The likelihood of a risk occurring is measured on a scale of 1 to 5 (1 unlikely to 5 almost certain). Table 3.7.3a provides guidance.

Likelihood Rating	Score	Description	Possible Indicators
ALMOST CERTAIN	5	More than an 80% chance of occurrence.	Vehicular, cycle and / or pedestrian flows are high. A high percentage of vulnerable users may pass through the site. The location of the defect and the topography of the site will mean that it is difficult to a highway user to recognise and hence avoid the defect. Forward visibility may be compromised.
VERY LIKELY	4	60 to 80% chance of occurrence.	Vehicular, cycle or pedestrian flows may be high, but differing modes are less likely to share the Highway at this location. Responsible Highway users may be able to recognise and take action to mitigate the impact of the defect. Forward visibility is good.
LIKELY	3	40 to 60% chance of occurrence.	Vehicular, cycle or pedestrian flows are moderate or low. Different transport modes are unlikely to share the Highway at this location. The majority of responsible Highway users will be able to recognise and take action to mitigate the impact of the defect.
POSSIBLE	2	10 to 40% chance of occurrence.	Vehicular, cycle or pedestrian flows are low. The speed differential between users is likely to be low. The majority of responsible Highway users will be able to avoid the defect.
UNLIKELY	1	Less than 10% chance of occurrence.	Vehicular, cycle or pedestrian flows are very low. The speed differential between users is very likely to be low. It is expected that responsible Highway users will be able to avoid the defect.

Table 3.7.3a Likelihood Ratings

3.7.4 Risk Factor

The risk factor for a particular risk is calculated as follows:

Risk Factor = Impact Score X Likelihood Score

It is this factor that identifies the overall seriousness of the risk and consequently the appropriateness of the speed of response to remedy the defect.

3.7.5 Defect Catergorisation

Table 3.7.5a (Risk Matrix) and table 3.7.5b (Risk Factor Scoring) below enable the appropriate categorisation of defects.

LIKELIHOOD						
	Almost Certain 5	5	10	15	20	25
	Very Likely 4	4	8	12	16	20
	Likely 3	3	6	9	12	15
	Possible 2	2	4	6	8	10
	Unlikely 1	1	2	3	4	5
		Insignificant 1	Minor 2	Significant 3	Major 4	Catastrophic* 5
	IMPACT					

Table 3.7.5a Risk Matrix (for defect response categorisation)

Score of 1 to 8	Cat 1 Low
Score of 9 to 12	Cat 1 Med
Score of 15 to 20	Cat 1 High
Score of 25	Cat A (emergency)*

Table 3.7.5b Risk Factor Scoring (mechanism within Risk Matrix)

* An emergency response may be requested where the impact of a risk is catastrophic. Examples may include missing man hole covers, collapsed carriageways, fallen trees, subsidence, and flooding.

3.7.6 Works Orders and Response Times

Works can be ordered for completion within a range of timescales. Table 3.7.6a below provides the timescales for responding to Cat ‘A’, Cat ‘1H’, Cat ‘1M’ and Cat ‘1L’ defects along with the corresponding works order/priority codes.

Defect Category	Works Order/ Priority Code	Response	Repair type	Comments
Cat 'A' (emergency)	A	2 hours from time of identification or 4 hours from receipt of report.	Temporary	Used to deal with defects which form an immediate hazard to the highway user.
Cat '1H'	1	24 hours from time of identification	Temporary	Defects which may impact on the highway user but are not safety critical, e.g., potholes, missing, misaligned or rocking flags/paving units.
Cat '1M'	2	7 days from the date of identification	Temporary or Permanent	These defects are not required to be urgently rectified and focus more on the serviceability needs of the highway.
Cat '1L'	0	3 months	Permanent	Response of a more routine nature that supports the serviceability and sustainability of the highway network. No temporary repair necessary
	X	48 hours	Temporary	See 3.7.7 'Priority 'X' and '5' Works Orders
	4	6 months	Permanent	Used for planned maintenance
	5	10 days	Permanent	See 3.7.7 'Priority 'X' and '5' Works Orders

Table 3.7.6a Works Order Priorities and Response Times

3.7.7 Priority 'X' and '5' Works Orders

Alternative methods of repair have had to be sought to reduce the number of reactive repairs, provide a permanent repair and improve customer perception. The Works Order / Priority Codes 'X' and '5' are an attempt to do all three with the added function of providing pre-patching for surface treatments. Where defects that are risk assessed as a Cat 'A', or as a Cat '1H', then the repair of the defect will be actioned accordingly.

Defects other than a Cat 'A' or a Cat '1H' may be considered as a Work Order / Priority Code 'X'.

It is recognised that on any highway network, a multitude of minor defects will exist which do not pose any risk to either the safety or the integrity of the highway and for which it may be impractical and inefficient to expend limited financial resources to undertake repairs.

Any defects which do not meet the Minimum Investigatory Levels may be recorded should the Highway Inspector deem this appropriate, for example, where a cluster of such defects may form a potential preventative maintenance scheme in the future. Where such defects are recorded, they will be considered as a Works Order/ Priority Code '0' or '4'.

3.8 Training

3.8.1 Qualifications and Guidance

The DFT Code of Practice for Well Managed Highway Infrastructure (CoPWMHI) provides advice regarding Highway Inspector training. The successful completion of a certification scheme provided by a training centre approved by the UK Roads Board enables Highway Inspectors to be included on the National Register of Highway Inspectors for a period of five years.

Registration with the Highway Inspectors Board can contribute positively to risk management and defence of compensation or liability cases.

Those involved in managing, developing, and implementing the risk-based approach for safety inspections will be competent. Highway Inspectors will be provided with clear guidance and training regarding the establishment of the risk-based approach and practical implementation. A program of Continuing Professional Development and training for all staff and others involved in developing and implementing the risk-based approach will be provided.

Where appropriate, following Inspection Validation Checks, performance reviews, and a review of this document every two years, refresher training will be provided.

All Highway Inspectors are expected to become qualified to the recommended standards as specified in CoPWMHI. This qualification shall where possible be undertaken within 12 months of appointment.

Prior to qualification, newly appointed Highway Inspectors or Trainee Highway Inspectors shall work under the guidance of such qualified Highway Inspectors as necessary, in order to gain up to date knowledge and on the job experience.

3.8.2 Cyclic Inspection Validation Checks

To maintain the quality of the service and improve consistency in the application of the Risk based approach, regular internal inspection validation checks based on the contents of this document will be undertaken by the Council's Inspection and Streetworks Engineer. Following this check, repeat SHIs shall be undertaken if considered necessary.

4. HIGHWAY ASSESSMENT

Highway assessment is driven by the principals and policy of the Highway Asset Management Plan.

All forms of highway assessment whether visual inspection or mechanical forms of survey are programmed by the Highway Asset Management Team in Highway Services. Inspections are undertaken by trained Highway Assessment Technicians within the Group and mechanical surveys are procured.

4.1 UKPMS Inspections

4.1.1 UKPMS Defined

UKPMS, the United Kingdom Pavement Management System, is a standard for computer systems that support the management of programmed maintenance of hard paved surfaces within the highway, and the monitoring of condition and of the need for funding, on local authority road networks.

As well as software the UKPMS standard also covers the associated survey techniques, and rules and parameters that allow the systems to be operated in a consistent standard way.

4.1.2 UKPMS Visual Inspections

The Coarse Visual Inspection (CVI) is intended to be a coarse, rapid survey, usually carried out from a slow moving vehicle, that allows a large part of the network to be assessed each year. However, in Rotherham these are carried out on foot as cyclic surveys enabling both carriageway and footway conditions to be assessed at a single visit.

In addition to production of Performance Indicators, UKPMS processed visual survey data forms a key input into the preparation of the Council's annual maintenance programs.

Detailed guidance on undertaking surveys is contained within the UKPMS Visual Survey Manual published by Chris Britton Consultancy on behalf of the UKPMS Owners Forum.

4.1.3 Purpose of UKPMS Visual Inspections

In many authorities UKPMS Visual Inspections were initially carried out for a single purpose, to produce performance indicators required by the government. In order to make the maximum use of these surveys Rotherham uses this:

- To support and audit decisions about how, when and where to carry out maintenance schemes;
- To target areas for other programmed maintenance;

- To determine a required level of budget and investment over time to maintain or achieve a required level of service or network condition (needs budgeting);
- To assess the future implications of current / proposed levels of funding, to support the development of Asset Management Planning for our Highways;
- To assist in the calculation of the highway asset valuation for Whole Government Accounting.

4.1.4 Training

UKPMS surveys are designed to be carried out by staff trained in the relevant survey techniques, and who are able to record defects accurately and consistently, in accordance with the definitions and procedures defined in the manual. UKPMS inspections are not expected to indicate the cause of defects, indicate the preferred treatment or record engineering judgement. Objectivity and consistency are paramount. UKPMS Inspectors should be accredited to the current nationally accepted standard for such surveys.

4.2 Coarse Visual Inspections

Up until 2004, Best Value Performance Indicators (BVPIs) for all elements of the road network required the use of Coarse Visual Inspection (CVI) data gathered during the previous two or four years.

Since 2004/2005, the Best Value Performance Indicator (BVPI) for principal roads required data to be collected using machine type surveys. This survey type was subsequently changed to a SCANNER (Surface Condition Assessment of the National Network of Roads) type survey from 2005/2006 onwards with a requirement to survey 100% of the network within a two year period. From 2005/2006 the BVPI for non-principal classified roads was also required to be measured using SCANNER surveys. From 2008/2009 the Performance Indicator for unclassified roads was removed from the national indicator set. Despite this, Rotherham continues to produce a local indicator using in-house walked CVI (Coarse Visual Inspection) survey data for benchmarking purposes.

Since 2011/2012 the NI168 (Principal Roads) and NI169 (Non-principal Classified Roads) have no longer been required to be published. However, condition data for these classes of roads are still required as part of the Government's single data set which is provided by local authorities.

CVI surveys will therefore continue to be undertaken on all classes of roads in Rotherham in order to:

- Evaluate long term trends in network condition.
- Produce the local PI for unclassified roads (65% of Rotherham's highway network).
- Measure footway condition data.
- Provide data for scheme prioritisation.

In addition to mechanical surveys being undertaken on classified roads, walked CVI condition surveys are also carried out on these roads on a four year cycle

(which is the same frequency as unclassified roads and footways).

CVI surveys are used to collect data for both carriageway and footways. CVI data is used to report a local PI for all footways and it is also used to prioritise the footway maintenance scheme program.

CVI surveys are also undertaken on council maintained car parks (Table 3.6.2a) in conjunction with the survey for the adjacent street.

Audits on CVI surveys are carried out in-house on a small sample of road sections each month and they are recorded within the highway asset management system.

4.3 Machine Based Condition Surveys

As these surveys are based on vehicle mounted data collection devices they are solely targeted towards the assessment of carriageway conditions. The principle of machine based data collection is to make surveys objective and repeatable. We employ two types of machine surveys; SCANNER, and SCRIM (Sideways Force Coefficient Routine Investigation Machine).

Skid resistance is influenced by surface texture, and texture depth is an output from SCRIM surveys. Skid testing results shall be correlated with output from SCANNER to identify priority sites where low/ marginal skid resistance coincides with low texture depth.

4.3.1 SCANNER Surveys

SCANNER surveys are carried out on a rolling programme of Rotherham's classified roads (A, B and C roads) on a two year cycle. This programme of sites is held on Rotherham's Pavement Management System and roads are tested in both directions unless the road layout dictates otherwise. The surveys are carried out at traffic speed by accredited machines and data is collected on transverse and longitudinal profiles, texture and cracking. These surveys were required to be undertaken on all classified roads from 2005/06 in order to produce national performance indicators. These indicators are also used locally to monitor performance, works identification and also to support highway asset valuation.

The surveys identify lengths of road where the surface condition is deteriorating. The survey will not identify structural deterioration until it is evidenced through wheel- track cracking and rutting.

SCANNER reports the condition of 10 metre section lengths of carriageway using the RED / AMBER / GREEN traffic signal warning system. The RED lengths of road contribute to the national indicator. This data can be displayed in a graphical format along road centre lines to allow for prospective scheme lengths of carriageway to be identified for further investigation. The survey data can be used to identify lengths of the network that require treatment.

SCANNER data results are received in HMDIF format. Rotherham's computerised United Kingdom's Pavement Management System (UKPMS) is used to process and store this data. SCANNER survey data is calculated in the Pavement

Management System in 10m lengths and provides individual readings for each direction of travel along the carriageway.

To consider and analyse the current skid resistance of Rotherham's principal road network, non-principal road network and selected unclassified roads through the utilisation of 'continuous friction measuring equipment', and when combined with other relevant attributes, identify sections of road that may be considered for planned maintenance.

4.3.2 Method of Survey

Routine monitoring of skid resistance is carried out on a rolling program of the whole classified network and defined unclassified network on a three year cycle using a Sideways Force Coefficient Routine Investigation Machine (SCRIM). This machine is a surface friction tester which accurately measures skidding resistance under constant load and at a constant speed on a wet road. It makes continuous measurements following a single line, typically along the inside wheel path and it provides survey data at ten metre intervals. On multi-lane roads, measurements are taken in lane one.

A defined program of sites is held on Rotherham's Pavement Management System and roads are tested in both directions unless the road layout dictates otherwise.

Rotherham has adopted the Characteristic SCRIM Coefficient (CSC) approach to SCRIM surveys. This means that surveys are rotated in an early, mid and late season sequence. Three years of survey results are used to give a more stable set of data than the alternative Mean Summer SCRIM Coefficient (MSSC) method. The MSSC approach tests control sites three times a year and takes into account only 'in year' variations.

SCRIM results are received in HMDIF format. Rotherham's computerised United Kingdom's Pavement Management System (UKPMS) is used to process and store this data. SCRIM survey data is calculated in the Pavement Management System in 10m lengths and provides individual readings for each direction of travel along the carriageway.

4.4 Public Rights of Way Assessments

Modified CVI condition surveys are carried out on PROW's to collect surface condition data as part of the BVPI 178 assessment survey. These assessments are undertaken by the Assessment Technicians within Highway Services.

A general assessment of public rights of way is undertaken at intervals of 30 months. This allows for the season of inspection to change between each assessment so that any seasonal problems are progressively identified.

As well as the identification of maintenance issues the inspections allow for the calculation of the Rights of Way Performance Indicators. To enable this, assessments are undertaken using a standard survey format produced by the Countryside Agency and ADEPT.

The surfaces of ROW vary a great deal in their nature and materials. As a general rule the surface will be maintained in a manner appropriate to its construction using materials as closely matching as possible those used in its construction or in former maintenance.

Paths surfaced with unbound materials and earth paths will require the exercise of discretion on the part of the inspector in in evaluating the risks whether the surface is potentially hazardous or in need of repair. Surfaced paths, particularly in an urban setting, should be maintained as if they were adopted.

The Council are under a duty to sign all PROW where they leave a metaled road. Waymarks or additional signs may be erected anywhere along the route where they would be of assistance to users who are unfamiliar with the area.

Any requirements for surface repair, repair or replacement of furniture, replacement or additional signage shall be reported to members of the Rights of Way team.

Other issues/risk factors to be noted and reported include:

- Obstruction - Where a path is found to be obstructed by vegetation growing from an adjacent property.

- Ploughing / Cropping - The occupier of the land may plough the surface of a cross field path to cultivate the land. However, they must make good the surface so that it is reasonably convenient for use within 14 days.

- Other Cases of Nuisance - such as dangerous animals, materials deposited on the path, misleading notices, barbed wire adjacent to the path likely to injure users, or frequent misuse of the path by traffic not permitted to use it.

PROW also has a Rights of Way Improvement Plan (ROWIP), which includes an action plan. The ROWIP is reviewed each year.

5. SKIDDING RESISTANCE

5.1 Skidding Resistance Policy Statement

Rotherham Council is responsible for the maintenance of the roads in their respective areas. This is a statutory duty under Section 41 of the Highways Act 1980 ‘to maintain highways that are maintainable at public expense’.

Skid resistance is an important property relating to the safety of highway users, particularly in damp or wet conditions. Over the course of the life of a road the surface can lose some of its characteristics associated with skid resistance.

Effective maintenance of the highway network includes the requirement to monitor the skid resistance of the road surface and to take an approach to ensure that the skid resistance across the network is maintained to an appropriate standard. Guidance on this may be found within the document ‘Well-managed Highway Infrastructure: A Code of Practice’.

In 2019 Highways England (since renamed National Highways) published an updated Skidding resistance standard CS228, superseding the previous standard HD28/15.

Whilst CS228 is not intended for the management of skid resistance on local roads, similar principles may be applicable, and the document forms a basis for RMBC’s Skid Resistance Procedure document for the Rotherham MBC designated SCRIM survey network. The designated network is the entire classified network, and the unclassified network which forms part of the Authority’s salting routes.

The Skidding Resistance Policy in Appendix 2 of this document should be read in conjunction with the Skid Resistance Procedure in Appendix 3.

APPENDIX 1 – SAFETY HIGHWAY INSPECTION POLICY

Document History

Date	Description	Name
Dec 2017	Initial Draft	Andrew Rowley / Inspection and Enforcement Manager / Highway Network Management Group
June 2023	Review	Allan Lewis / Group Manager – Street Lighting, Inspections and Streetworks

Index

Definitions

The term “Safety Highway Inspection” used in this document refers to a regime of inspection for the prioritisation of defect repairs and is a crucial component of highway maintenance. It provides a robust framework to address key objectives for the maintenance of the highway in a safe and serviceable manner, as required by Section 41 of the Highways Act 1980, and consistent with the Council’s HAMP.

All Safety Highway Inspections are undertaken by area based Highway Inspectors within the Council’s Community Safety and Street Scene Service. Inspections following customer reports, Street Works inspections, enforcement activities and actions to identify programmed maintenance activities are undertaken separately.

1. Introduction

1.1 Rotherham Council is responsible for the maintenance of the roads within the Rotherham Borough boundary. This is a statutory duty under Section 41 of the Highways Act 1980 ‘to maintain highways that are maintainable at public expense’.

1.2 Safety Highway Inspections are important in aiming to secure the safety of highway users and the duty is further expanded in the CoPWMHI document which recommends that ‘a risk-based inspection regime, including regular safety inspections, should be developed and implemented for all highway assets’.

1.3 Authorities are strongly advised to undertake safety inspections in accordance with the guidance of CoPWMHI in order that, when necessary, they are able to support a defence under Section 58 of the Highways Act 1980 and equivalent legislation. This requires that a court shall have regard to "whether the highway authority knew or could reasonably be expected to know that the condition of the part of the highway to which the action related was likely to cause danger to users of the highway".

1.4 It is against the above guidance and legislative backdrop that Rotherham Councils' Safety Highway Inspection Policy is hereby determined and applied by working with the guidance of CoPWMHI.

1.5 Rotherham Councils' Safety Highway Inspections are visual inspections undertaken in accordance with the appropriate risk assessments. They are designed to provide complete, accurate and timely information, as far as is reasonably practicable, on the safety maintenance needs of the highway network and its ancillary assets based on site observations and measurements. These are applied through a process of risk evaluation reflective of the characteristics of the defect, the local environment and network usage (Risk Based Approach).

1.6 This Policy supports Rotherham Councils' HAMP.

2. Objectives

The objective of this Safety Highway Inspection Policy is to:

2.1 Ensure that the highway is maintained, thereby safeguarding users of the highway.

2.2 Contribute to a reduction in the number of highway accidents and accident claims.

2.3 Align with the guidance document CoPWMHI.

2.4 Enable Rotherham Council to robustly defend against highway claims and corporate manslaughter charges.

2.5 Ensure that the procedures within the 'Highway Inspection and Assessment Code of Practice' (CoPHIA) enable a risk based approach to the management of highway defects.

3. Approach

To achieve the above objectives Rotherham Council has produced and will review the CoPHIA document which supplements this 'Safety Highway Inspection Policy'.

This will include: -

3.1 That Rotherham Council's 'Community Safety and Street Scene Service' section 'Highway Services' is responsible for the policy.

3.2 Details of a safety inspection regime and Network Hierarchy.

3.3 Characteristics of the safety highway inspection regime, including frequency of inspection, the methodology, items to be recorded and nature of response.

3.4 Processes for receiving and responding to customer complaints, reports and requests for maintenance from members of the public and other stakeholders.

3.5 Establishing 'Minimum Investigatory Levels' applicable to highway defects.

3.6 A risk based approach for categorising highway defects and response times for removal/repair of defects.

3.7 Training and development of officers to fulfil their allotted duties competently and assist in the defence of compensation or liability cases.

3.8 Cyclic Inspection validation checks to ensure compliance with CoPHIA to drive the provision of service excellence.

4. Legal Duties and responsibilities.

4.1 Highway Authorities have a statutory duty under Section 41 of the Highways Act 1980 "to maintain highways that are maintainable at public expense"

4.2 Section 58 Defence

4.2.1 Section 58 of the Highways Act 1980 provides the ability to form a statutory defence to counter legal actions for negligence. Any Authority must be able to prove in a court of law that it has taken 'such care as is in all the circumstances reasonably required to secure that part of the highway to which the action relates was not dangerous for traffic.'

4.2.2 Section 58 of The Highways Act 1980 does not stipulate the standard of maintenance applicable to the highway. It is accepted by the Courts that different standards of maintenance are applicable to different parts of the

highway network; this may relate to vehicle and pedestrian usage as well as the speed of the vehicles using the highway.

4.3. When considering a third party legal action against Rotherham Council, the Court will consider such factors as:

4.3.1 The character of the highway and the traffic which was reasonably to be expected to use it

4.3.2 The standard of maintenance appropriate for a highway of that character and used by such traffic

4.3.3 The state of repair in which a reasonable person would have expected to find the highway

4.3.4 Whether the 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

4.3.5 Whether the Authority could reasonably have been expected to repair that part of the highway before the cause of action arose.

4.4 The development of this Safety Highway Inspection Policy is to ensure a suitably structured CoPHIA is implemented and to ensure that highway users are safeguarded through a risk based approach in the management of highway defects.

4.5 Importantly, this policy will provide documentary evidence of Rotherham Council's proactive approach to the management of highway defects.

5. References

5.1 Highways Act 1980

5.2 Well-Managed Highway Infrastructure: A Code of Practice (CoPWMHI)

5.3 Highway Asset Management Plan (HAMP)

5.4 Highway Inspection and Assessment Code of Practice (CoPHIA)

APPENDIX 2 – SKIDDING RESISTANCE POLICY (SCRIM)

Document History

Date	Description	Name
19/5/17	Initial Draft	P Turland (DMBC)
1/6/17	DRAFT 2	P Turland
12/2/17	Draft 3	P Turland
15/6/17	Draft 4 following discussions with RMBC and BMBC	P Turland
18/9/17	Minor edit in blue.	P Turland
26/10/17	Draft 5 amendments on behalf of RMBC following discussions with RJ	N Ayrton
June 2023	Revised based on CS228 Guidance	N Ayrton, G Williams, A Saxton, A Lee

Rotherham MBC

SKIDDING RESISTANCE

POLICY

(Appendix 2)

Document version control

Date	Description	Author
July 2022	Draft for review	WDM
September 2022	Updates by N Ayrton	RMBC
June 2023	Review RJ, AS, NA, GW, AL	RMBC

Contents

Definitions

The Highway Authorities of South Yorkshire shall mean Doncaster MBC, Rotherham MBC and Barnsley MBC (Sheffield City Council are not included as they have a PFI in place).

In this document, the term “skid resistance” refers to the frictional properties of the road surface in wet conditions. The skid resistance of a wet or damp road surface can be substantially lower than the same surface when dry and is more dependent on the condition of the surfacing material.

To achieve consistency, skid resistance is measured using a specified device, under standardised conditions. These measurements are used to characterise the road surface and assess the need for maintenance but cannot be related directly to the friction available to a road user making a particular manoeuvre at a particular time.

Skid resistance surveys are sometimes carried out for special purposes, such as research or local investigations. Due to the different test procedures, these measurements require careful interpretation.

1.0 Introduction

Rotherham MBC is responsible for the maintenance of the roads in their respective areas. This is a statutory duty under Section 41 of the Highways Act 1980 ‘to maintain highways that are maintainable at public expense’.

Section 39 of the Road Traffic Act 1988 states that local authorities should undertake studies into accidents, and must in the light of those studies, take such measures as appear to the authority to be appropriate to prevent such accidents.

Skid resistance is an important property relating to the safety of highway users related to the design and specification of the road surface materials. Effective maintenance of the highway network includes the requirement to monitor the skid resistance of the road surface and to take an approach to ensure that the skid resistance across the network is maintained to an appropriate standard. Guidance on this may be found within the document ‘Well Managed Highway Infrastructure: A Code of Practice’.

In 2019 Highways England (since renamed National Highways) published an updated Skidding resistance standard CS228, superseding the previous standard HD28/15.

CS228 is intended for the strategic highways network and is complemented by Implementation Annexes for the Department for Infrastructure (Northern Ireland), Transport Scotland and the Wales Government.

Whilst CS228 is not intended for the management of skid resistance on local roads, similar principles may be applicable, and the document forms a basis for RMBC’s Skid Resistance Procedure document for the Rotherham MBC designated SCRIM survey network.

This policy document should be read in conjunction with Code of practice for Highway Inspection and Assessment, and Appendix 3 – Rotherham MBC Skidding Resistance Procedure Document.

The objectives of this document are to:

To ensure that Rotherham MBC fulfil their duty under the highways Act 1980.

maintain a consistent approach to the provision of skid resistance across the Council’s network, so that road users find appropriate friction characteristics when accelerating, braking, and cornering.

provide a level of skid resistance appropriate to the nature of the road environment at each location. The appropriate level is determined from a combination of network-wide analyses of crash history, consideration of friction demands by road users and local judgement of site-specific factors.

2.0 Skid Resistance Surveys

The machine used to survey the roads and measure the skid resistance is the Sideway-force Coefficient Routine Investigatory Machine (SCRIM®) in line with CS228.

We aim to survey 100% of the classified road network every year, and the unclassified road network which form part of the Authority's precautionary salting network.

The skid resistance policy only applies to those roads that are surveyed. There is no formal skid resistance policy for those unclassified roads that are not surveyed; however, there is a requirement for aggregate properties for road surfaces on these more minor roads to meet minimum specified levels for Polished Stone Value, which will help ensure in an appropriate level of skid resistance on the minor roads. The traffic volumes and/or speeds on the minor roads are relatively low and this approach is considered an acceptable risk to achieve a cost-effective service.

3.0 Site categories and Investigatory Levels.

Every section of the SCRIM survey network has been assigned an appropriate site category based on road layout and geometry. This site category has an associated investigatory level (IL). The objective of setting this IL is to assign a level of skid resistance most appropriate for the risk on the specific feature, at or below which further investigation is required to evaluate the site-specific risks in more detail. A full review of the network's site category will be undertaken every 3 years, or at a frequency sufficient to ensure network changes are identified and treated appropriately. The RMBC Site Categories along with the IL attributed to each of them is detailed in Table 1.

Code	Site Category	Initial IL
B	Dual non-event	0.35
C1	Single non-event	0.40
C2	Single non-event medium Risk	0.45
Q1	Approach to Junction and Roundabouts Rural	0.50
Q2	Approach to Junction and Roundabouts Urban	0.45
K	Approach to Crossing	0.50
G1	Gradient 5 to 10%	0.45
G2	Gradient >10%	0.45
D100	Bend <100m Dual Carriageway	0.45
D250	Bend <250m Dual Carriageway	0.45
D500	Bend <500m Dual Carriageway	0.45
S100	Bend <100m Single Carriageway	0.50
S250	Bend <250m Single Carriageway	0.50
S500	Bend <500m Single Carriageway	0.50

Table 1: SCRIM site categories and Investigatory Levels.

4.0 Prioritisation of Sites for Investigation

There are unlikely to be sufficient resources to investigate all sites that are below the IL and therefore all the survey data is prioritised using the last available 3 years wet / damp road surface collision data.
Based on the prioritisation score sites are identified for Initial Investigation. The Initial Investigation is largely a review of contemporary data to determine whether a detailed investigation is required, including an assessment of the survey data and accidents used to prioritise sites, and programmes of completed and planned works. Once this review has been undertaken the sites identified may be re-prioritised to determine those requiring a Detailed Investigation.

Detailed Investigations shall be carried out by suitably competent personnel.

Where an identified site falls within close proximity to another, the investigating officer shall make an informed decision, based on highway characteristics, as to whether to combine into one site. The scope of each assessment will be dependent upon several factors, including road layout and presence of highway features, consequently it will be for the investigating officer to determine the most effective method for investigating sites.
The investigation should consider several factors at each site and make such recommendations as appropriate to address concerns identified. All investigations should be documented, and the site investigator will make a clear recommendation for each site investigated.

These may include:

No further action (if the site remains below IL after the next survey, it will be subject to prioritisation)

Road safety assessment (If the site investigation identified any characteristic of the site or road user behaviour that suggests other road safety engineering measures could be appropriate)

Routine maintenance (If the site investigation identifies requirements for additional routine highway maintenance, such as sweeping, drainage maintenance, renewal of markings etc.)

Treatment to improve the skid resistance. If, considering the nature of the site and the observed accident history, it is likely to reduce the risk of accidents in wet conditions

Budgeting and programming issues will influence when the treatments are carried out and this will be managed through established processes for prioritising maintenance.

5.0 Slippery Road Warning Signs

If treatment for skid resistance is deemed necessary and the work cannot be started within a reasonable period, then consideration will be given to erecting slippery road signs on the site. These signs should be removed immediately the site has been treated and reached or exceeded the required skid resistance.

6.0 Monitoring

All recommendations arising from the application of this skid policy will be monitored through to completion, or where circumstances change, such that the recommendation is no longer considered necessary.

Appendix A: Legal Duties and Responsibilities

Highway Authorities have a statutory duty under Section 41 of the Highways Act 1980 "to maintain highways that are maintainable at public expense".
Although the formal management of highway skid resistance is not a legal requirement it is considered good practice as guided by the document 'Well-managed Highway Infrastructure: A Code of practice', and it supports the aims and objectives as set out in the Rotherham MBC's Highway Asset Management Plan (HAMP) and the Highway Authorities of South Yorkshire Safer Roads Strategy.

Section 58 Defence –

Section 58 of the Highways Act 1980 provides 'a special defence against a highway authority for damages for non- repair of highway. It states that a highway authority has a defence if it has taken 'such care as is in all the circumstances reasonably required to secure that part of the highway to which the action relates was not dangerous for traffic.'

Section 58 of The Highways Act 1980 does not stipulate the standard of maintenance applicable to the highway. It is accepted by the Courts those different standards of maintenance are applicable to different parts of the highway network; this may relate to vehicle and pedestrian usage as well as the speed of the vehicles using the highway.

When considering a third-party legal action against any of the Highway Authority the Court will consider such factors as:

The character of the highway and the traffic which was reasonably to be expected to use it.
The standard of maintenance appropriate for a highway of that character and used by such traffic.
The state of repair in which a reasonable person would have expected to find the highway.
Whether the 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.
Whether the Authority could reasonably have been expected to repair that part of the highway before the cause of action arose.

The development of this skid resistance policy is to ensure a suitably structured procedure and strategy is implemented by each authority for the highway under its care and appropriate levels of skid resistance are maintained.

Importantly, this policy will provide documentary evidence of the Highway Authorities of South Yorkshire proactive approach to skid resistance management.

Appendix 3

Rotherham MBC

SKIDDING RESISTANCE

PROCEDURE DOCUMENT

Contents

EXECUTIVE SUMMARY

Rotherham MBC is responsible for the maintenance of over 1,189km (739 miles) of roads. These are split into different types of road classification as shown below:

- Principal roads (A class) are the main strategic routes that carry large volumes of traffic around through the Borough.
- Non-principal roads (B and C class) are main roads of local strategic importance. They are through routes that link together the principal roads.
- Unclassified roads are minor routes carrying local traffic only. They tend to be mainly residential estate roads and rural roads.

The Council's Highway Asset Management Policy outlines the policies and procedures for highway and infrastructure maintenance, ensuring that assets are maintained in a strategic way. It contains a wide range of plans and strategies for the effective maintenance of the highway network including the requirement to monitor the skid resistance of roads so that the skid resistance across the network can be maintained to a safe and appropriate standard. These documents are continuously revised to ensure the information within remains current.

Skid resistance is an important property of the road surface relating to the safety of highway users, particularly in damp or wet conditions. Over the course of a road's life the surface can lose some of its characteristics associated with skid resistance.

The Design Manual for Roads and Bridges set out procedures for the management of Skidding resistance in CS228. The Rotherham MBC policy and this procedure follow the broad principles of CS228 but apply them to Rotherham's' network.

- Formalise processes for monitoring skid resistance across the Council's Road network on an ongoing basis.
- Identify sites where skid resistance may be a potential safety issue.
- Prioritise skid resistance deficient sites for improvement works.

1.0 Introduction

This document is intended to complement the Skid Resistance Policy and may be supported by reference documentation and more detailed working procedures. It is anticipated that this Procedure will be subject to periodic review and updated as required.

Working procedures detailing staff responsibilities, timescales and investigation etc. may be developed over time and support the implementation of the Skid Policy and Skid Procedure.

In 2015 Highways England published an updated Skid Resistance standard HD28/15, which replaced the previous standard HD28/04 and the Associated Interim Advice Note 98/07. In 2019 HD28/15 was updated with CS228: Skidding Resistance; which was updated to version 2 in 2021[1]. CS228 is not intended for the management of skid resistance on local roads; however, it acknowledges similar principles may be applicable. This document sets out how these principles are applied to the Rotherham MBC network.

The objective of the Skid Policy and Skid Methodology is to:

1. Ensure that Rotherham MBC fulfil their duty under the Highways Act 1980.

2. Maintain a consistent approach to the provision of skid resistance across the Rotherham MBC road network, so that road users find appropriate friction characteristics when accelerating, braking and cornering;

3. Provide a level of skid resistance appropriate to the nature of the road environment at each location. The appropriate level is determined from a combination of network-wide analyses of crash history, consideration of friction demands by road users and local judgement of site-specific factors.

In Rotherham MBC the provision of appropriate levels of skid resistance is treated primarily as an Asset Management issue, complementing existing road safety engineering programmes. Crash data is used in prioritisation and should inform the investigation programme.

1.1 Background to Skid Resistance

It has been known for a long time that improving the skid resistance of a road can reduce the risk of certain types of crashes occurring or mitigate the consequence of any such crashes. A policy of measuring and setting minimum standards for the skid resistance of roads in the wet, with an investigatory process for sites below the minimum standard is considered best practice for local authorities to follow.

Dry road surfaces normally have a relatively high skid resistance which is adequate for the frictional demands arising from the routine braking, accelerating and maneuvering of vehicles. However, the skid resistance can fall significantly when the road is wet and can be reduced to a level where there is insufficient friction available to avoid loss of control, even during routine maneuvering. In situations where the frictional demand is

[1] https://www.standardsforhighways.co.uk/dmrb/search/50d43081-9726-41e8-9835-9cd55760ad9e

much greater than the road provides, the risks of a skidding crashes increase.

However, it can rarely be said that only low skid resistance is the cause of the crash. The cause is almost always a combination of factors – lower than desirable skid resistance, driver error, poor visibility, excessive speed, poor signing, etc. A high skid resistance will not prevent the emergency braking situation from arising or improve driver judgment, but it can often mitigate the effects of driver error and reduce the risk of a crash occurring or reduce the severity of a crash.

There are, therefore, compelling reasons for Local Highway Authorities to introduce a skid policy to ensure wet road skid resistance is adequate because, not only will it reduce crashes, but it also produces very high rates of return on funds invested.

1.2 Relationship between Wet Road Skid Resistance and Crashes

Research has shown that as the wet road skid resistance of a road surface decrease the rate of wet skidding crashes increase. It has also been found that different sites (geometry and events) present different risks of crashes occurring in the wet. Consequently, the skid resistance at a site needs to be aligned to the risk.

By applying this theory, it has been possible to establish a number of site categories that describe the range of situations found on a road network and to identify relationships between wet skidding crash risk and wet skidding resistance values at each of the site categories.

CS228 has a number of defined site categories, with associated Investigatory Levels that have been adapted to reflect the particular nature and demands on the Rotherham MBC network.

2.0 OPERATION

The overall process for managing skid resistance in Rotherham is shown in figure 1.

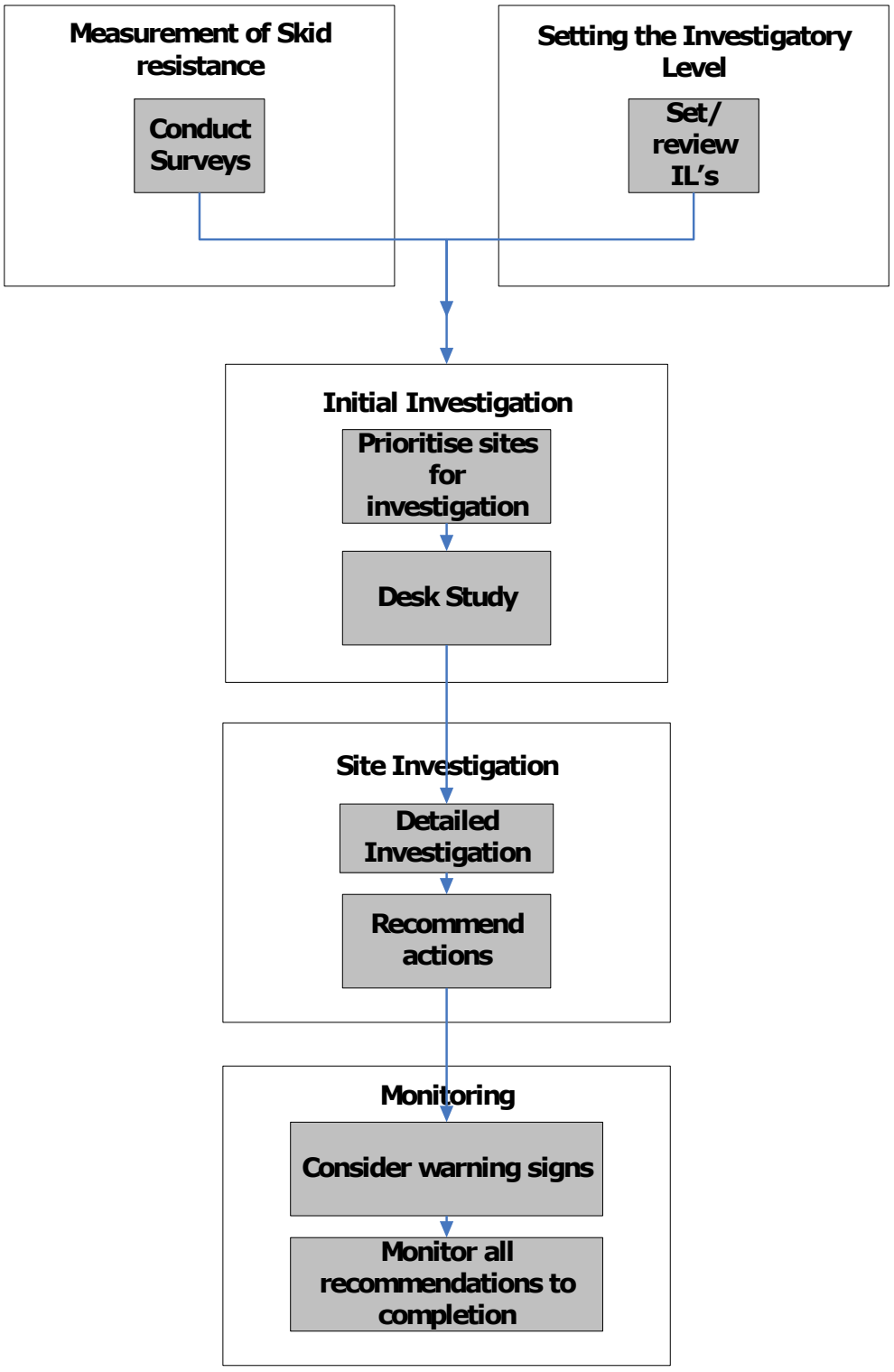


Figure 1: Overall procedure for managing skid resistance

2.1 CONDUCT SURVEYS

To achieve consistency skid resistance is measured using a 'Sideways-Force Coefficient Routine Investigation Machine' (SCRIM®2) under standardised conditions. SCRIM is a surface friction tester which accurately measures skidding resistance continuously following a single line, typically along the inside wheel path and it provides survey data at ten metre intervals. On multi-lane roads, measurements are taken in lane one.

A survey contractor is appointed to undertake the work. The Survey Contractor uses a machine complying with BS7941-1 and has passed an accreditation trial as detailed in the UK Roads Liaison Group document 'Accreditation and QA of Sideways Force Skid Resistance Survey Devices3' published in 2020 (as subsequently updated) or an alternative accreditation procedure agreed with the Rotherham MBC.

The survey contractor will apply appropriate procedures to ensure the measurements comply with the principles for calibration, testing and reporting set out in BS7941-1.

For the purpose of this strategy, the defined network comprises all principal roads (A roads), all non-principal roads (B and C roads) and the network of unclassified roads which are treated on a precautionary salt as part of Rotherham's Winter Service.

Routine testing will not be carried out on the following sections of Rotherham's Road network unless specifically requested to do so:

- Any road that is not on the 'defined network'
- Temporary road surfaces
- Roundabouts - the testing of roundabouts with SCRIM is demanding due to the size of the vehicle, the presence of other vehicles in the test lane and the need to maintain the required test speed at all times during the survey. SCRIM surveys should be undertaken at a test speed in the range 25 km/h to 85 km/h. Surveys undertaken at speeds below 25 km/h are invalid, the data cannot be speed corrected and the data cannot therefore be delivered to the Highway Authority.
- Unclassified roads that do not form part of the precautionary salting network
- Footways
- Coloured surfaces i.e. cycle lanes
- Worn manhole covers

Testing on these sections of the highway would only be undertaken if an assessment of the current data, a site visit and consultation with a materials consultant indicate that it is warranted.

The minimum survey speed is 25km/h. Given the constraints on the network the survey contractor will use best endeavours to maximise coverage achieved.

The network is maintained by Rotherham MBC and provided to the Survey Contractor in advance of survey work to facilitate planning.

[2] SCRIM is a registered trademark of WDM limited.

[3] Accreditation and Quality Assurance of Sideways Force Skid Resistance Survey Devices Version: 4.1. UK Roads Liaison Group. 2020. https://ukrlg.ciht.org.uk/ukrlg-home/guidance/road-condition-information/data-collection/skid-resistance/

Site specific testing may be undertaken as a separate exercise using the 'Grip Tester' method in instances where a sideways coefficient routine investigation machine cannot be used.

The results from 'Grip Tester' surveys will be converted to equivalent CSC values using correlations developed by the County Surveyors' Society Grip Tester User Group.

2.2 SEASONAL CORRECTION

The skid resistance of road surfaces can fluctuate within a year and between successive years, whilst maintain a consistent level over a longer period of time. The process of Seasonal Correction is intended to smooth these seasonal variations, ensuring a more consistent annual reporting of sites exhibiting lower skid resistance.

The Rotherham MBC skid strategy uses the Characteristic Skid Coefficient method of applying seasonal correction as described in CS228. This relies upon surveys being conducted in a period defined as early/ mid/ late in a sequence over successive survey years.

These seasons are currently defined as:

Early	1 May – 27 June
Mid	28 June – 24 August
Late	25 August – 21 October

This sequence has been followed with the 2019 surveys in the late period, 2020 in the middle period and 2021 in the early period. In 2022 the method of survey was changed to a 'single annual survey of the network' and the entire classified network was surveyed in the late period. This method of annual survey will continue with SCRIM surveys also being carried out in the early and middle periods.

In exceptional circumstances the testing season may be varied from these periods in consultation with the survey contractor.

The Survey Contractor applies the seasonal correction data prior to providing the survey results.

The SCRIM data is provided in the form of a HMDIF file, which is a file format that can be loaded to the Rotherham PMS.

2.3 MEASUREMENT

Measurements will be carried out with the test wheel in the nearside (left) wheelpath of the lane to be surveyed (typically the left hand lane.) Where alternative test lines are required Rotherham MBC will identify this in advance of the survey. Typically, very high survey coverage is achieved; however, there are a number of locations where the data may be invalid including:

- Where the survey speed falls below 25km/h
- Where the survey line deviates significantly
- Where the road surface is contaminated

- Temporary road surfaces
- Location of speed humps

In these circumstances the data will be identified as invalid and not included in the data delivered to the Council.

Surveying will not be undertaken when the air temperature is below 5^0C, if there is standing water on the surface, or heavy rainfall.

The data will be processed by the contractor. The processing will:

Apply the speed correction formula set out in CS228
Apply the Index of SFC to the machine data as described in CS228
Apply the CSC seasonal correction as detailed in CS228 (ref E/1). The CSC methodology described in CS228 assumes construction data is available for the network, and any locations that have been surfaced in the CSC calculation period (3 years) are removed from the calculation. If this data is not available for the survey contractor, the CSC methodology applies a correction using all the collected survey data.

3.0 SETTING INVESTIGATORY LEVELS

An Investigatory Level (IL) shall be defined for every part of the SCRIM survey network, by determining which Site Category is most appropriate to each location with an associated IL. The objective of setting an IL is to assign a level of skid resistance appropriate for the risk on the site, at or below which further investigation is required to evaluate the site-specific risks in more detail.

The site categories in CS228 have been adopted with some modifications. These are:

- Identify bends in three radius categories (< 100m; 100 - 250m and 250 – 500m)
- Identify 'approach to junction' and 'approach to roundabout'
- Include category C2 'Single non-event medium risk'

The Site Categories and associated Investigatory Levels are shown in table 1.

Code	Site Category	Initial IL
B	Dual non-event	0.35
C1	Single non-event	0.40
C2	Single non-event medium Risk	0.45
Q1	Approach to Junction and Roundabouts Rural	0.50
Q2	Approach to Junction and Roundabouts Urban	0.45
K	Approach to Crossing	0.50
G1	Gradient 5 to 10%	0.45
G2	Gradient >10%	0.45
D100	Bend <100m Dual Carriageway	0.45
D250	Bend <250m Dual Carriageway	0.45
D500	Bend <500m Dual Carriageway	0.45
S100	Bend <100m Single Carriageway	0.50
S250	Bend <250m Single Carriageway	0.50
S500	Bend <500m Single Carriageway	0.50

Table 1: SCRIM site categories and Investigatory Levels.

Notes applicable to all:

1. The IL should be compared with the mean CSC, calculated for the appropriate averaging length.
2. The averaging length is normally 100m or the length of a feature if it is shorter, except for roundabouts, where the averaging length is 10m.
3. Residual lengths less than 50% of a complete averaging length may be attached to the penultimate full averaging length, providing that the Site Category is the same.

Notes applicable to specific site categories:

1. IL's for site categories Q and K are based on the 50m approach to the feature and, in the case of approach to junctions, through to the extent of the junction. The approach length shall be extended when justified by local site characteristics.
2. Categories G1 and G2 should <u>not</u> be applied to uphill gradients on carriageways with one-way traffic.

4.0 INITIAL INVESTIGATIONS

The objective of undertaking Skid Resistance Investigations is to determine whether a surface treatment is justified to reduce the risk of wet road crashes, or whether some other action is required, or no further action is warranted.

Investigations will be based on sites identified from the SCRIM® summary data reported at a nominal 100m summary length. (The actual length will be shorter if the site category length is less than 100m)

4.1 PRIORITISATION

The SCRIM® profile for Rotherham MBC is such that many sites below IL will be identified. A process of prioritisation will be applied to the data considering:

- SCRIM® data
- Crash history
- Texture depth
- Assessed likely impact if skid resistance is a factor in an incident

The model has been created RMBC Transportation from the guidance contained in CS228. The table will rank sites allowing them to be selected for investigation. SCRIM data is passed to RMBC's Transportation Team for use their investigations of sites fitting the criteria for investigation.

Weighting Factor	Criteria	Score
Skid accident severity	Fatal	12
	Serious	6
	Slight	2
Wet skid accidents per road section	No. of accidents	1 per accident
SCRIM deficiency	>0	0
	>0.05 and <=0.05	1
	>-0.10 and <=0.05	2
	>-0.15 and <=0.1	4
	>0.15	6

Based on 3-year collision data
Only sites above a total score of 14 will be investigated initially

The prioritisation models will consider all the SCRIM® summary lengths for the network and rank them using the criteria applied. If any length scores greater than 14 the site will be subject to an Initial Investigation.

Sites where the skid resistance is higher than the Investigatory Level will not be subject to investigation under the Skid Policy and Procedure.

This prioritised site listing forms the basis for the consideration of the SCRIM® data. This may mean sites that are below IL are not investigated depending on the prioritisation score.

The Initial Investigation is largely a review of data to determine whether a Detailed Investigation is required.

Once this review has been undertaken the sites identified will be re-prioritised to determine those requiring a Detailed Investigation.

4.2 Validating the data

The Initial Investigation should involve data validation considering:

- Ensuring Site category and IL is correct
- Skid resistance data is within the expected range
- Whether works have been completed since the survey; or works are in the current resurfacing/ surface dressing program
- Review the validity of crashes (advice available in Appendix 2)

If after reviewing it is considered the crashes are not valid in the context of the investigation, the site should be re-prioritised. Depending on the revised prioritisation score the site may still require investigation.

4.2.1 The Site Category and IL is incorrect

The Site Category and corresponding IL are based on those defined in table 1. The Site Category may be incorrect for a number of reasons including:

- Changes to road layout since last review
- Approach to junction has been assigned for lightly trafficked side road
- The road environment mitigates some of the ‘events’ through other measures (e.g. road is assigned as a bend within a 20mph traffic calmed zone)

If the Initial Investigation recommends a change to Site Category or Investigatory Level these changes should be updated within the PMS and implemented for the next survey cycle. If the site category is amended the site should be re-prioritised.

4.2.2 Skid resistance data is within expected range

The expected range of skid resistance can be difficult to determine. Considerations include:

- Previous skid resistance data (i.e., is there a significant change from the previous year’s survey)
- Consider the skid resistance on similar surfaces in the locality (adjacent to site/ opposite side of road)
- Risk of contamination at site during survey (relies on local knowledge of the network)

4.2.3 Works

If works were completed shortly before the survey this can influence the skid resistance if the binder film had not been removed by traffic. If works have been completed since the current survey data, then the SCRIM data can be considered invalid. If construction is entered in the Construction database with a surface date after the survey the skid resistance is not reported in the summary data.

If the length of road is programmed for treatment, then the scheme design should consider the requirement to provide an appropriate skid resistance.

4.2.4 Validity of crashes

The prioritisation models use crash data as a key input. The crash data is not filtered in any way prior to use in prioritisation and therefore may include a number of crashes where the road surface is not a factor. The crash details should be reviewed to ensure that the crash(es) for a particular site are in the correct location and considered valid. Guidance on crash validation is included in Appendix 1.

If the crash is not considered valid this will impact on the prioritisation for the site.

4.3 Initial Investigation recommendations

Several recommendations may be made following the Initial Investigation including:

- Undertake Detailed Investigation
- No further action
- Update Site Category and reprioritise
- Site planned for treatment

With the annual cycle of survey and developing the prioritised listing sites identified for ‘No further action’ will be considered in the next prioritised listing. This provides an ongoing monitoring process.

5.0 DETAILED INVESTIGATIONS

The Detailed Investigation should be carried out by personnel with suitable experience who have specific knowledge of local pavement design and maintenance standards, local surface treatment methods, performance of surfacing material, etc.

Consideration should be given to the method of Site Investigation. There may be health and safety, traffic management and resourcing issues with regard to site visits, therefore the method need to be selected to suit the constraints but allow a full consideration of the factors at each site. The investigation can be undertaken (in order of preference):

- On foot
- From a parked or moving vehicle
- From recent local knowledge of the site
- From video records (if available)

For each individual site a field form will be used to record site details and the findings from the investigation.

The following details, where available, should be completed in the office.

- SCRIM details (survey date/ site category/ SCRIM profile)
- Crash details (number/ dates/ surface condition/ details)
- Surface Type including date/ PSV/ texture depth
- Traffic

The full carriageway width should be included in the investigation (i.e. all lanes of a dual carriageway/ both directions of a single carriageway) and other features relevant to the site (e.g. a junction approach to review visibility/ signing etc.)

The record of the Investigation should be recorded within RMBC's Pavement Management System.

When carrying out site investigations it should be borne in mind that skid resistance is generally measured in the nearside wheel track in lane one. If, during a site investigation, the rest of the pavement is not visually consistent then it is possible that the skid resistance of the rest of the lane or other lanes could vary from the line tested. This may be particularly true where there are trenches.

The investigation should consider the relevant factors at each site and make such recommendations as appropriate to address concerns identified. All investigations should be documented.

As a result of the investigation, a clear recommendation shall be recorded of the actions to be taken (including if no immediate action is required).

- If the site investigation identified any characteristic of the site or road user behavior that suggests other road safety engineering measures could be appropriate, then persons with relevant experience should be consulted.
- If the site investigation identifies requirements for additional routine highway maintenance, such as drain clearing, sweeping, renewal of markings etc. then appropriate action shall be taken.
- Treatment to improve the skid resistance should be recommended if, taking into account the nature of the site and the observed crash history, it is likely to reduce the risk of crashes in wet conditions, this includes locations where the position of crashes in wet conditions (whether or not skidding was reported) appears to be linked to surface condition.
- Treatment should be recommended if the skid resistance, combined with the nature of the individual site, suggest that the observed crash count underestimates the actual level of risk. In this case, preventive treatment is justified to pre-empt a potential increase in crashes.
- If treatment is only required on part of the site, then particular care should be taken to identify the lengths where treatment is required.
- Update Site Category/ Investigatory level. If the nature of the site suggests the Site category is incorrectly assigned this should be updated.
- If on balance it is considered that there is no requirement for treatment of any type this should be recorded as 'No further action.'

5.1 Review of investigations

All recommendations from investigations should be reviewed. The Investigations record should provide enough detail to understand the rationale behind the recommendations. The review should be undertaken as a discrete process ideally by someone not involved with the investigations. The purpose of the review is to ensure consistency has been applied between sites/ inspectors etc.

5.2 Completion of Investigations

The timetable for the Initial and Detailed Investigations should be set out on an annual basis and take account of:

- The receipt of survey data from the survey contractor (this will vary depending on which survey cycle applies in each year)
- The requirement to provide early scheme details for design/ construction
- The number of sites identified for investigation

All Investigations should be completed within 1 year of the survey.

1.3 Budgeting and programming

Budgeting and programming issues will influence when the treatments are carried out and this process should be managed through the established processes for prioritising maintenance.

Any ranking of skid resistance maintenance schemes should take into account the findings of the site investigations in addition to the supporting survey and crash data.

6.0 WARNING SIGNS

If treatment for skid resistance is approved from the Investigation consideration will be given to erecting ‘slippery road’ signs on the site. Signs should be to diagram 557 of TRSGD, and if appropriate should be used with a supplementary ‘distance’ plate to diagram 570. It is acknowledged that locating signs to have the desired impact can be challenging, particularly in urban environments and this should be considered when determining whether signs are required.

An active program of reviewing existing slippery road signs and where appropriate removing them when they are no longer required shall be undertaken.

7.0 MONITORING AND REPORTING

The skid policy runs on an annual cycle following completion of the SCRIM® survey.

The recommendations from Investigations are added to programmes of work and may not be completed within the annual cycle. All recommendations made from the investigation process should be monitored through to completion, or where circumstances change at a site that mean the recommendation is no longer valid to document the reasons for change.

GLOSSARY OF TERMS

Asset Management Policy and Strategy	Documents setting out Councils practices in line with the HMEP Highway Infrastructure Asset Management: Guidance document
CS228	Document published by Highways England setting out the management of Skidding Resistance on the UK Strategic Road network
Investigatory Level	A limit, above which the skid resistance is considered to be satisfactory, but below which the road may require an investigation.
Site Category	A description of the network geometric and layout characteristics with reference to the level of skid resistance required.
Crash	The term is used to describe injury crashes as recorded in the crash database. Crash/ Collision may also be used
Grip Tester	A method for testing Skid Resistance that can be towed behind a vehicle. Can be used for site specific testing
HMDIF	Highways Maintenance Data Interchange Format – a file format used to provide data for loading to the Rotherham MBC UKPMS https://ukrlg.ciht.org.uk/media/12087/tn03-1-_hmdif_v1200.pdf
SCRIM Coefficient (SC)	A SCRIM reading that has been corrected for all factors except seasonal effects.
Characteristic SCRIM Coefficient (CSC)	The skid resistance value that has been corrected for within year and between year seasonal variations.
PMS	Pavement Management System. Computer system used to process and store highway condition data
Preliminary Investigation	Initial Investigation. The terms can be used interchangeably.
SCRIM	Sideways Force Coefficient Routine Investigation Machine. The testing device operated by W.D.M. limited to undertake routine skid resistance surveys.
SCRIM deficiency	The difference between the CSC and the Investigatory Level
SCRIM Processed	SCRIM data held in PMS which includes corrected data at 10m sub section level

SCRIM RAW	SCRIM data held in PMS which includes uncorrected SCRIM coefficient
SCRIM Summary	SCRIM data held in PMS reporting the average for each SCRIM summery length (100m of length od site category)
Seasonal Correction	Process of applying CSC methodology to the raw data in processing within PMS
Secondary Investigation	Detailed Investigation. The terms can be used interchangeably.
Site Category	One of the levels within a broad classification of the road network according to the risk of skidding.

Speed corrections	Process of correcting readings to 50kph speed limit (applying correction applied as per CS228)
Survey period	The period within the survey year when the survey is carried out in.

The terms used within this report are defined in the Glossary above; this is not an exhaustive list.

APPENDIX B: Roles and responsibilities

This section sets out the various roles and responsibilities for the management of the Skid Resistance Policy.

An annual skid resistance survey programme will be procured by Rotherham MBC.

The Highways Asset Team will be responsible for the following:

- Management, development, implementation and regular review of Rotherham MBC's Skid Resistance Policy.
- Identification of the defined network.
- Assignment of 'site categories' and 'investigatory levels'.
- The timely procurement, management and delivery of skid resistance surveys through specialist accredited contractors.
- Developing a prioritised list of maintenance sites that would require works to improve the skid resistance and making informed decisions about when these are integrated into the annual highway works program.
- Informing other Council departments of any issues affecting the site which may be additional to skid resistance issues, for example faded road markings or defective traffic signs.
- Reviewing of the 'site categories' and 'investigatory levels' for the defined network in line with current guidance every three years.
- Maintaining the appropriate records of site visits and associated documents.
- Results of the SCRIM condition surveys will be shared with the Transportation and Highway Design Team by the Highways Asset Team within eight weeks of receiving the SCRIM data.

The Transportation and Highway Design Team will:

- Maintain records of all reported personal injury collisions, as supplied by South Yorkshire Police, which have occurred on the borough's road network.
- Upon receipt, analyse the results of the SCRIM condition surveys provided by the Council's Highways Asset Team.
- Process, analyse and review the skid resistance data at sites where five or more collisions have occurred in the previous three calendar years, where the road surface has been recorded as wet/ damp, within a 100 meter radius.
- Regardless of the number of reported personal injury collisions, or the injury severity of a particular collision, should any location be highlighted by the Police to the Transportation Team as an area where they have any highway related concerns which may be contributory to an injury collision then this would trigger further investigation. This would include the examination of skid resistance data, if applicable to the concern raised.

APPENDIX C: INTERPRETATION OF CRASH DATA

The locations of crashes used to identify priority sites depend on the crash fitting software used, and the settings used at the time of processing to locate crashes. Therefore, the exact location of crashes may slightly vary from system to system.

When preparing the Prioritised Site Listings, all crashes that occurred in the SCRIM Survey Network, in the past three years, are considered.

Identifying crashes that are not related to road surface condition is a very time consuming task (i.e. crash validation). At the Initial Investigation stage, it is recommended that crashes are reviewed in detail so that invalid crashes could be ruled out.

Crash validation starts with the assumption that all crashes occurred at the site, in the past three years are relevant to the exercise. Then, by examining the crashes individually, omit any that ‘clearly’ are invalid for this exercise.

The ‘clearly’ invalid crashes may be identified by examining individual crash records in fields such as Crash Description and Contributory Factors. The checklist shown in figure 1 could be used to assist in this process.

Crashes are fitted to the road section at a given chainage. For sites such as ‘approaches to junctions’ the direction of travel of the vehicle should be reviewed to ensure that the crash relates to the specific site. This can be done by reviewing the crash description and the vehicle details.

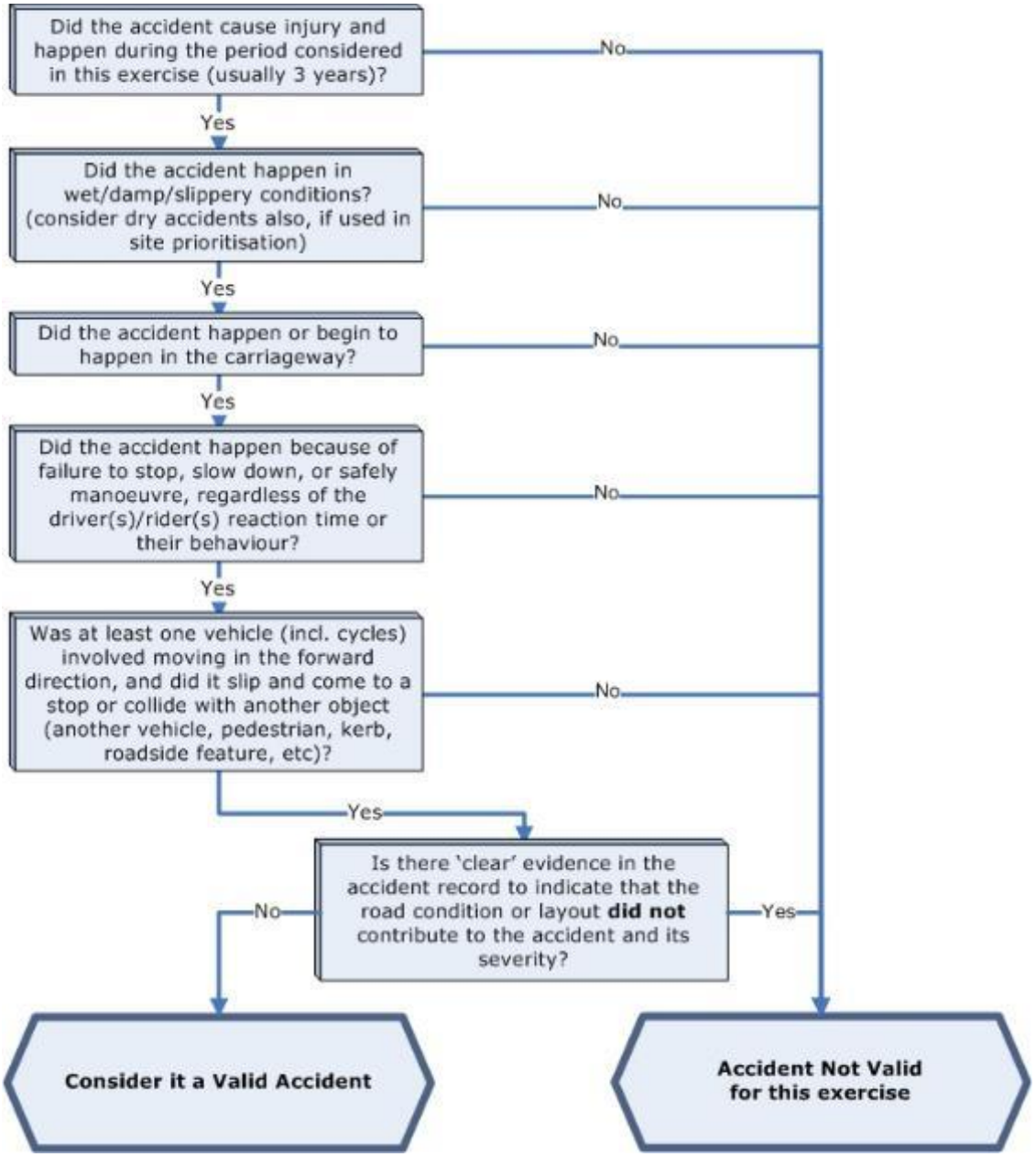


Figure 1 – Checking the Validity of Crashes

- Some examples of invalid crashes are listed below but are not limited to these.

- Falls/Slips inside or when getting in and out of buses and other vehicles
- Reversing into objects (stationary vehicles, pedestrians, or other roadside objects)
- Crash involving only pedestrians without the involvement of a vehicle
- Crashes occurred outside the carriageway (i.e. on driveways, car parks, etc.)
- Crashes due to vehicles trying to evade the police