



Doncaster
Council

Report

Appendix B

SKIDDING RESISTANCE - PROCEDURE DOCUMENT



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Document History			
Date	Comment	Changes	By

Next Review dateJanuary 2020

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Executive Summary

Doncaster MBC is responsible for the maintenance of over 1500km (937 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 and through the Borough.
- Other classified roads (B and C roads) are main roads of local strategic importance. They are through routes that link together the principal roads.
- Unclassified roads are more minor routes carrying local traffic only. They tend to be mainly residential estate roads and rural roads.

The Council's Highway Asset Maintenance Management Policy Statement outlines the policies and procedures for highway and infrastructure maintenance, ensuring that assets are maintained in a strategic and risk-based way. It contains a wide range of plans and strategies for the effective maintenance of the highway network.

This includes the need to monitor the skid resistance of roads as guided by 'Well managed Highway Infrastructure A Code of Practice 2016' so that the skid resistance across the defined network can be maintained to an appropriate standard.

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 the life of a road the surface can lose some of its characteristics associated with skid resistance.

This document details the procedures undertaken to implement the Councils Skidding Resistance Policy (Referenced Appendix A).

This includes:-

- Identifying the Network to be monitored.
- Monitoring skid resistance across the Borough's defined network (the classified roads) on an on-going basis.
- Determining sites where skid resistance may be a potential safety issue.
- Prioritising skid resistance deficient sites for improvement works.

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1 Introduction

- The purpose of this document is to outline Doncaster Council's approach to managing levels of skid resistance on the defined road network.
- It provides a step by step approach to identifying and managing skid resistance deficient sites and sets out a process for determining options and recommendations and how these will be prioritised taking into account budget and programme considerations.
- The procedures in this document set out a long term strategy to manage the skid resistance of the Borough's defined network to a consistent and safe level.
- In 2015 Highways England published an updated comprehensive methodology for managing carriageway skid resistance on the UK Strategic Network and this is set out in their document HD 28/15 Skidding Resistance which this document should be read in conjunction with.
- Whilst HD 28/15 is not intended for the management of skid resistance on local roads, similar principles are applicable and will therefore form a basis for Doncaster M.B.C 's Skid Resistance Procedure document, adapted to reflect local needs, environment and resource constraints.
- Effective maintenance of the highway network includes the need to monitor the skid resistance of the road surface and to take an approach to ensure that the skid resistance across the defined network is maintained to an appropriate standard. Guidance on this may be found within the document 'Well Managed Highway Infrastructure: A Code of Practice'.
- The term 'skid resistance' used in this policy refers to the frictional properties of a road surface in wet conditions, measured using a specified device, under standardised conditions. The skid resistance of a wet or damp road surface can be substantially lower than the same surface when dry.
- Measurements are used as an assessment of a road surface's level of skid resistance and as an indication of the potential need for further investigation. However, it should be noted it does not represent the definitive skid resistance available to a road user making a particular manoeuvre at a particular time and at a particular speed.

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2. Principles of the Procedure

Doncaster Council will use the methodology in HD 28/15 as a template; however this will be adapted to reflect local needs, environment and resource constraints.

The broad principles of HD 28/15 and Doncaster Council's Skidding Resistance Policy and Procedure are as follows:

- Skid resistance surveys will be undertaken annually on defined parts of the road network (see Appendix DMBC 4).
- The defined network will be assigned 'site categories' and 'investigatory levels'. See Section 5 of this document.
- Skid resistance data obtained from the surveys, along with site categories and investigatory levels will be recorded and managed within a computerised database as part of a highway asset management system.
- Skid resistance data for each part of the defined network (Appendix DMBC 4) will be analysed and compared against the site investigatory level.
- Sites where skid resistance is at, or falls below the investigatory level will be identified for initial investigation as detailed in Section 7.
- An investigation will also be carried out where increased skidding incident levels have been identified. Examples include annual safety or police reports.
- Sites requiring detailed investigation will be determined following initial investigations.
- A site investigation report will be completed for all sites which require a detailed investigation.
- Where treatment is deemed to be required, maintenance sites will be prioritised.
- Maintenance sites which have been identified as requiring prioritised treatment to improve the skid resistance shall have slippery road warning signs erected.
- Programming of treatments will be subject to corporate policies and available resources.
- The above principles will be applied on an ongoing basis so that skid resistance across the defined network is monitored and managed.

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3 Roles and Responsibilities

This section sets out the various roles and responsibilities for the management of Skidding Resistance

3.1 The Highway Asset Maintenance team will be responsible for the following:

- Management, development, implementation and regular review of Doncaster MBC's Skidding Resistance Policy.
- Identification of the 'defined network'. (See Appendix DMBC 4)
- Assignment of 'site categories' and 'investigatory levels' including any cross boundary liaison. **
- The timely, procurement, management and delivery of skid resistance surveys through specialist accredited contractors.
- Processing, analysis and review of skid resistance data.
- Developing a prioritised list of maintenance sites that require works to improve the skid resistance reflective of a prioritised risk-based approach for inclusion in future highways works programmes.**
- Informing other Council departments of any issues affecting the site which may be additional to skid resistance issues, for example faded road markings, visibility issues, defective traffic signs etc.
- Reviewing of the 'site categories' and 'investigatory levels' for the 'defined network'. **
- Maintaining the appropriate records of site visits and associated documents.**

** In conjunction with the Traffic and Road Safety Team

3.2 Traffic and Road Safety Team will:

- Will maintain and supply records of collisions and incidents where skidding is involved for interrogation, including data such as road safety data recorded on the STATS19 form.
- Assist in 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 future highways works programmes, along with the erection of any 'slippery road' signs as necessary.

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- Assist in maintaining the appropriate records of site visits and associated documents.
- Assist as marked ** above.

4. Surveying of the Defined Network

4.1 Details of the annual skidding resistance survey and its methodology.

- Doncaster MBC will adopt the 'Single Annual Skid Survey' (SASS) method as outlined in Annex 2 of HD 28/15.
- Routine measurements of skid resistance shall normally be carried out using a Sideways-force Coefficient Routine Investigation Machine (SCRIM).
- Surveys will only be carried out in the lane carrying the greatest number of HGV's – Normally the leftmost permanent lane.
- The Sideways Force Coefficient (SFC) of the road surface is recorded and then processed to produce the overall level of Characteristic Skid Coefficient (CSC). The CSC is an estimate of the underlying skid resistance once the effect of seasonal variation has been taken into account.
- Site specific testing may be undertaken as a separate exercise using the 'GripTester' method. The results from 'Grip Tester' surveys will be converted to equivalent CSC values.
- The 'defined network' which will be subject to skid resistance testing is identified in Appendix DMBC 4 and is subject to revision if there are changes or amendments to the network. Testing will be carried out during the early, mid or late parts of the testing season over a three year period as appropriate. (Ref Chapter 3 of HD28/15).
- An up to date digitised network will be maintained and issued to the surveyors.

4.2 Surveying methodology

Skid resistance is not a constant and is influenced by various factors such as test speed, temperature, weather conditions and also longer term effects such as

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seasonal weather variations or change of traffic flows. With this in mind the following controls will be applied;

- Routine measurements of skid resistance shall be carried out in accordance with Chapter 3 of HD 28/15 and BS-7941-1 'Methods for measuring the skid resistance of pavement surfaces. Sideway-force Coefficient Routine Investigation Machine 2006'.
- Any site specific testing undertaken using the 'Grip Tester' shall be in accordance with BS-7941-2 'Methods for measuring the skid resistance of pavement surfaces. Test method for measurement of surface skid resistance using the 'Grip Tester braked wheel fixed slip device.'
- Once the survey(s) have been completed, the data collected will be validated and processed by the surveying contractor. The survey contractor will also calculate and report the CSC.

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5 Site Categorisation and Setting the Investigatory Level

In developing 'Investigatory Levels', reference has been made to the skidding resistance standard HD28/15 developed for Highways England. The site categories and associated Investigatory Levels defined in HD28/15 have been developed for UK Strategic Network and are not intended for management of skid resistance on local roads.

Doncaster Council does not look after any of the UK Strategic Network and in formulating policy it has been recognised that these standards may not be directly applicable to the more diverse nature of the local authority roads. See section 5.3

5.1 Site Categorisation

Site categories shall be assigned to the 'defined network' by determining which category is most appropriate to the road layout at a particular location.

5.2 Investigatory Levels

An appropriate investigatory level (IL) shall be assigned from within the range for that site category.

The objective of setting an 'IL' is to assign a level of skid resistance appropriate for the risk at a particular location.

5.3 Application to Doncaster MBC Highway Network

Site categories and investigatory levels will be assigned using guidance from HD 28/15 Chapter 4 Table 1 (as amended for DMBC below – see Tables 5.1 and 5.2) and HD28/15 Annex 5 'Application of Site Categories and Investigatory Levels'.

The table below sets out Doncaster MBC's amendments to Table 4.1 of HD 28/15.

Site Category and Definition		Guidance on selection of appropriate Site Category
Q1	Approaches to and across minor and major junctions, approaches to roundabouts and traffic signals on major roads with a speed limit greater than 40mph.	Refer to HD 28/15 – Annex 5 – Category Q for guidance on appropriate selection of Site Category and Investigatory Level.
Q2B One way traffic.	Approaches to and across minor and major junctions, approaches to roundabouts and traffic signals on roads with a speed limit of 40mph or less.	Where the adjoining road is classified, or has a speed limit greater than or equal to 40mph then the site shall be classified as category Q1.
Q2C Two way traffic.	Approaches to and across minor and major junctions, approaches to roundabouts and traffic signals on roads with a speed limit of 40mph or less.	Where the adjoining road is classified, or has a speed limit greater than or equal to 40mph then the site shall be classified as category Q1.

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Table 5.1

Site Category	Definition	IL for CSC data at 50kph						
		0.30	0.35	0.40	0.45	0.50	0.55	0.60
A	Motorway	N/A	N/A					
B	Non-event carriageway with one-way traffic		X					
C	Non-event carriageway with two-way traffic			X				
Q1	Approaches to and across minor and major junctions, approaches to roundabouts and traffic signals on major roads with a speed limit greater than 40mph.					X		
Q2B	Approaches to and across minor and major junctions, approaches to roundabouts and traffic signals on roads with a speed limit of 40mph or less.(see table 5.1 above)			X One way traffic				
Q2C	Approaches to and across minor and major junctions, approaches to roundabouts and traffic signals on roads with a speed limit of 40mph or less.(see table 5.1 above)				X Two way traffic			
K	Approaches to pedestrian crossings and other high risk situations. ##					X		
R	Roundabout				X			
G1	Gradient 5-10% longer than 50m				X			
G2	Gradient >10% longer than 50m					X		
S1	Bend radius <500m – carriageway with one-way traffic				X			
S2	Bend radius <500m – carriageway with two-way traffic					X		

Investigatory Levels marked (X) shall be those initially assigned where a range is available.

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
4. As part of site investigation, individual values within each averaging length should be examined and the significance of any values that are substantially lower than the mean value assessed

Notes applicable to specific site categories

5. ILs 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.
6. Categories G1 and G2 should not be applied to uphill gradients on carriageways with one-way traffic.
7. Categories S1 and S2 should be applied only to bends with a speed limit of 50 mph or above, except if the radius of the bend is <100m, where the S1 and S2 categories shall be applied at all speeds

DMBC Table 5.2 Site Categories and Investigatory Levels

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5.4 Other potential high risk situations

Other potential high risk situations such as School Crossing Patrols, signed OAP crossings and remote bus stops (where no connecting footway exists) may need to be identified and assessed where the speed limit is 50mph or above and for example where the forward visibility may be an issue.

Where the speed limit is 40 mph or less these will not be recorded individually as these will normally have appropriate traffic warning signs and, in some locations. 20mph limits

5.5 Recording of Site Categories and Investigatory Levels

- Doncaster MBC will use a computerised database system for recording the site categories and investigatory levels on the 'defined network'.
- The Investigatory Levels shall be reviewed at no greater than 3 year intervals.

5.6 The Investigatory Levels may be revised:-

- If changes to the network are made e.g. reclassification, change of alignment etc.
- Following a detailed investigation resulting from section 7 of this policy.
- When identified through applying section 5 of this policy.

The review and any changes to the IL will be recorded.

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6 Annual Survey and Investigation programme

The following activity schedule shall form part of the Skid Resistance annual programme:

Date Range	Activity	Objective or Target	Comment
Jan to April	Create and deliver to the survey contractor the 'defined network' and sections to be surveyed	30th April Network shall be available for the contractor	
May to Mid-June	SCRIM Surveys shall be undertaken if an "Early" survey is required	Survey contractor will deliver the SFC's and CSC's to Doncaster MBC within 30 days of the final survey date	
Mid June to Mid-August	SCRIM Surveys shall be undertaken if a "Mid" survey is required		
Mid-August to End of September	SCRIM Surveys shall be undertaken if a "Late" survey is required		
October	Delivered data shall be loaded for processing into the computerised system.	Data shall be processed.	All sites at or below 'IL' shall be determined
November to January	All road sections requiring investigation shall be identified and initial investigations undertaken.		Ensure latest STATS19 data is available.
February to June	Road sections requiring a detailed investigation shall have the investigation carried out	Sites identified for treatment shall be prioritised and considered for inclusion in a forward works programme.	In accordance with Chapter 6 of HD28/15 these sites shall have 'slippery road' warning signs erected pending the works being carried out

DMBC Table 6.1

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7 Data Analysis and Investigations

Investigation will be undertaken in two stages; an initial investigation followed by a detailed investigation where necessary.

- The initial investigation will analyse and check the survey and other associated data to assess the need for a detailed investigation.
- A detailed investigation will assess any need for treatment.

7.1 Initial Investigation

- A validation review will be carried out to ensure the 'IL' has been assigned correctly and the skid resistance measurements are within the normal range expected. Where the mean CSC of the averaging length is below the IL these shall be identified as skid resistance deficient lengths (deficient lengths).
- The CSC for averaging lengths appropriate to the site category will be calculated for comparison with the IL, unless differing averaging lengths are required as specified by DMBC Table 5.2 and Chapter 5 of HD 28/15.
- All sites where the measured CSC is at or below the IL shall have an initial investigation undertaken. The timescale in which these investigations shall be carried out will be in accordance with DMBC Table 6.1 of this policy.
- Investigations will also be carried out on sites where increased skidding collisions have been identified as a result of processes other than the comparison of CSC against the IL. Examples include road safety and police reports.
- The initial investigation shall be recorded based on DMBC Table 7.1 below.

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Table for recording Initial Investigation details:

	Site Reference						
	Criteria and Scores						Risk score
Last 3 years data	Number of collisions	0	1	2	3+		
	Risk score	0	3	6	9		
From Table 5	Likely Impact	N/A	Slight	Slight / Serious	Serious	Serious / Fatal	
From Table 5	Risk score	0	1	2	3	4	
From Table 1	Skid resistance difference	<0.05	>=0.05 and <0.1	>=0.10 and <0.15	>=0.15 and <0.2	>=0.2	
From Table 1	Risk score	1	2	3	4	5	
Is texture <0.6	Poor Texture	No	Yes				
	Risk score	0	1				
Last 3 years data.	Fatal collisions	No	Yes				
	Risk score	0	1				
From any accident reports	Wet Weather issues	No	Yes				
	Risk score	0	1				
						Total	

Note - All table references refer to Appendix DMBC 3

DMBC Table 7.1

Following the initial investigation, based on the totals in DMBC Table 7.1 the council will carry out detailed investigations on the top 200 sites (or more where those scores are equal). The remainder shall continue to be monitored through the annual skid resistance management process.

The initial investigations will be undertaken by the Highways Asset Maintenance section with input from Traffic and Road Safety.

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7.2 Detailed Investigations

A detailed investigation will be carried out on sites identified through the initial investigation process in order to reach a decision about the most appropriate course of action.

7.2.1 The objectives of the detailed investigations are to:-

- Determine whether the site category and investigatory level are appropriate.
- Investigate the condition of the road surface
- Review the general site location
- Identify any other factors that may be relevant.

and recommend:-

- Whether a surface treatment may be required to reduce the risk of accidents. (specifically accidents in wet conditions or involving skidding).
- Any other form of action that may be required.
- If the site should be kept under review.

7.2.2 Detailed 'Site' Investigation and Report.

A detailed investigation is undertaken to collate and assess the information available for each site in order to reach a decision about the best course of action. These detailed investigations are carried out on the sites identified from the initial investigation

The process is outlined below and can be split into the 3 steps

7.2.2.1 Collate Data

As a minimum, the data collected shall include skid resistance, texture depth and the most recent 3 years of collision data available.

- Skid resistance data at 10m intervals for bends and roundabouts shall be obtained, because short lengths with low skid resistance could be hazardous for vehicles cornering. These shall not be disguised by being averaged over a longer length.
- Skid resistance data at 10m intervals shall also be obtained if the condition of the surfacing material is known to be variable over local areas.

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- The Scanner defects where available of rut depth, longitudinal profile, gradient, cross-fall and curvature data should be reviewed to establish if they are relevant. I.e. if the site has bends or gradients. In some instances, this data assists in checking whether the Site Category and/or Investigatory Level are correct or need amending. Information on the date of last surface treatment if available may also be relevant to the investigation and the interpretation of collision data.
- For each site, the relevant data should be collated to show the location of lengths with poor surface condition relative to the location of previous collisions and features such as bends, junctions, etc. This data may be collated as strip diagrams and on GIS mapping.
- The location of collisions occurring in wet conditions, irrespective of whether skidding was reported shall be collated. Given the limited accuracy of locating collisions positions electronically, it may be assumed for the purpose of this investigation that the position of a collision coincides with a Site if it occurred within 100m. However, collisions in excess of 100m can be included and collisions within the 100m boundary can be excluded if their location is deemed to not be relevant to the specific site.
- *Note: HD28/15 states a 200m buffer, but after reviewing the accuracy of the location of collisions, it was deemed more appropriate to set a buffer of 100m.*

7.2.2.2 Plan Investigations

- Investigations should be planned primarily to maximise efficiency. It may be however that priority should be given to completing investigations for sites that are substantially below the IL.
- All site visits should be undertaken by appropriately qualified and competent personnel and wherever possible undertaken on foot

The following methods/information/media can be used to supplement the information collated by the site visit:

- A driven site visit, often undertaken immediately before and/or after the on-foot site inspection (this allows the pattern of traffic movement and speed to be observed during the visit, but has associated safety risks that shall be controlled)
- Recent local knowledge of the site (this may provide a more general knowledge of the road usage under a wider range of traffic, weather and lighting conditions).

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- Video records and maps. Note: maps should not be used in isolation as they do not show obstructions to visibility, drainage issues, field accesses, hidden dips etc.

7.2.2.3 Undertake Investigations

Site investigations shall consider the factors detailed below and shall be carried out by personnel with suitable experience and/or qualifications. An example template of a site investigation form is given in Appendix DMBC 1.

- The level of detail appropriate for this investigation will depend on the nature of the site and the time since a detailed investigation was last carried out. Some of the points listed may only be relevant to more complex sites. If the site has been investigated recently then it will only be necessary to identify changes that have occurred since the last investigation was carried out.
- The full carriageway width should be included in the investigation. E.g. all lanes of a dual carriageway and both directions of a single carriageway. In addition, all junction approaches should also be investigated to determine whether the advance signing/alignment etc. is adequate or could be improved.
- When carrying out site investigations it should be borne in mind that skid resistance and texture depth are generally measured in the nearside wheel track. 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 be lower than the line tested. In these cases, it may be necessary to carry out additional investigations to confirm the findings.
- If a site contains a sharp bend to the left in combination with traffic braking or accelerating, then the offside wheel path can become more polished and the CSC can be up to 0.05 units lower than in the nearside wheel path. If present, this should be taken into account during the detailed investigation.
- Determine if the skid resistance is likely to be representative for the site; in particular, very low values should be viewed with caution.
- Localised reduction in the skid resistance can be caused by:
 - contamination or by fatting up of the binder.
 - an error in the survey

In these types of cases, the data should be compared to data measured in previous years and also with adjacent lengths with the same surfacing material, to determine if the skid resistance is representative of the condition of the surfacing material.

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Further investigation may not be needed at this time, but this should be recorded with reasons, if subsequent surveys continue to appear unrepresentative then the causes should be investigated.

7.3 Recommendation Options

As a result of the detailed investigation, a clear recommendation shall be recorded based on the flow chart (Appendix DMBC 2), including where no treatment is required.

There are a number of recommendations available to the investigating engineer(s) of which one or more may be identified.

These recommendations are:

- **OTHER ROAD SAFETY MEASURES**

If the detailed investigation identifies any characteristic of the site or road user behaviour that suggests other road safety engineering measures could be appropriate, then the relevant department / section will be advised.

- **ADDITIONAL MAINTENANCE**

If the detailed investigation identifies requirements for additional routine highway maintenance, such as sweeping, renewal of markings, or other maintenance activities then the relevant department will be advised.

- **SURFACE TREATMENT or RESURFACING**

Treatment to improve the skid resistance shall be recommended if, taking into account the nature of the site and the recorded collision history, it is likely to reduce the risk of collisions in wet conditions.

Treatment may also be recommended if the skid resistance, combined with the nature and knowledge of the individual site, suggests that the recorded collision count underestimates the level of risk.

- **NO TREATMENT**

If there is no justification for treatment based on the detailed investigation then no further action shall be required. If the site remains below the investigatory level after the next annual measurement of skid resistance then it will automatically become subject to an initial investigation.

- **RECLASSIFICATION OF INVESTIGATORY LEVEL**

If the skid resistance and collision pattern at sites at or below the IL have remained stable for 3 years or more, then the IL may be lowered by 0.05 units of CSC providing it remains within the range of IL's for that particular site category.

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8 Prioritisation of Treatment and Programming

The most appropriate form of treatment will be identified for each site which is found to require works.

- Where works are identified as being necessary following skid resistance investigations a system of works prioritisation will be adopted.
- Prioritisation uses both technical appraisal and a risk based approach.
- Once the detailed site investigation process is complete a series of risk scores will be applied to reflect the risk of incidents therefore allowing prioritisation of sites for treatment based on a risk score. See table in Appendix DMBC 1

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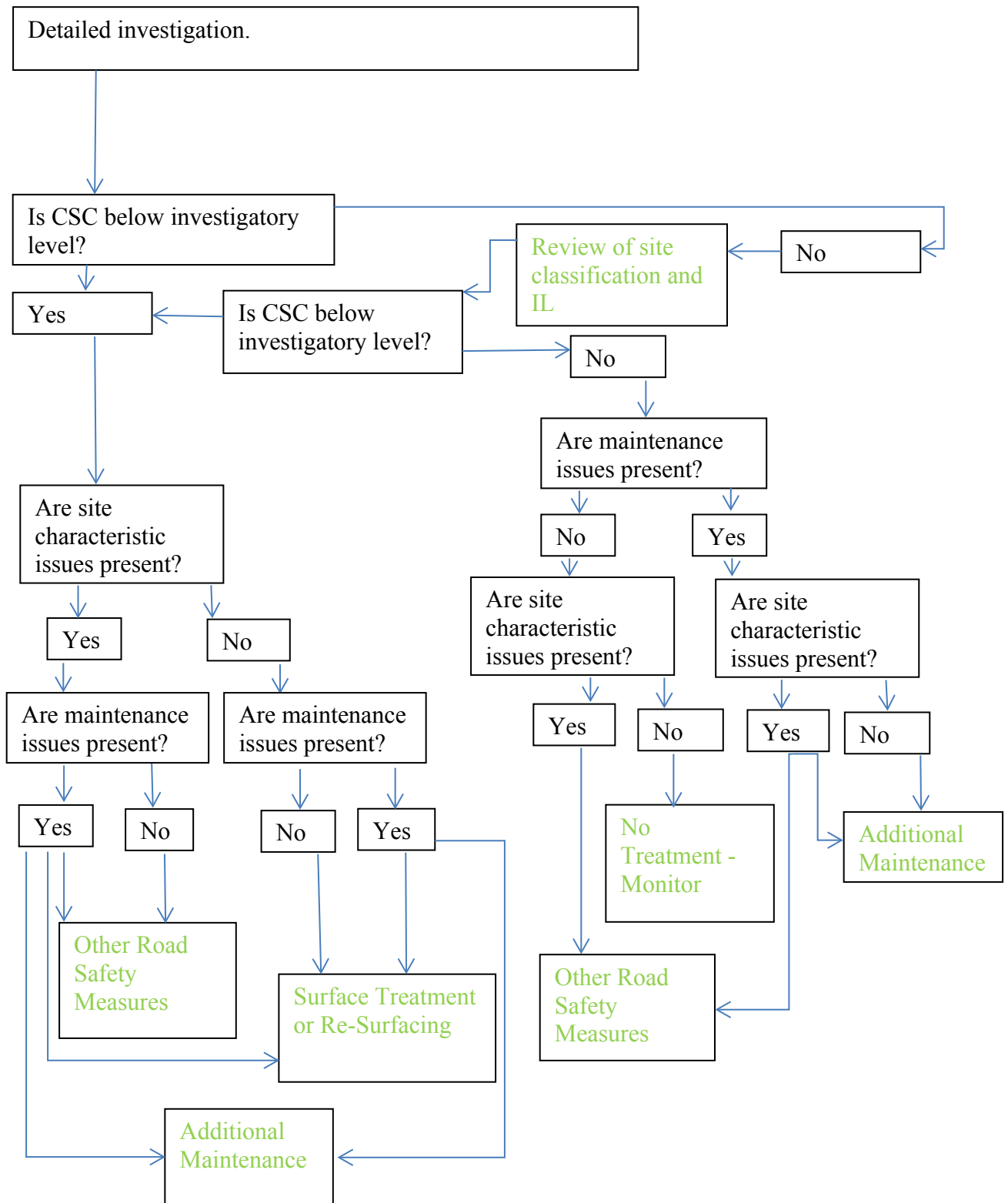
Appendix DMBC 1

Detailed Site Investigation Report and Scoring Table					
Site Location Reference				Score band	
	Tables Ref Appendix DMBC 3	Comments	Satisfactory Y/N		Score
Site Reference (UKPMS)				N/A	
Site Category and IL verified				N/A	
Investigatory Level (IL)	Table 6			1 – 5	
Measured Value (CSC)				N/A	
Skid deficiency	Table 1			0 – 5	
All collisions (last 3 years)	Table 2			0 – 5	
Wet weather incidents	N or Y			0 – 1	
Drainage issues	N or Y			0 – 1	
Standing Water present	N or Y			0 – 1	
Surfacing Type	Desc.				
Surface condition	Desc.				
Texture ,<0.6	N or Y			0 – 1	
Defects present	N or Y			0 – 1	
Road Speed	Table 3			1 – 4	
Road markings worn	Y or N			0 – 1	
Road markings correct	Y or N			0 – 1	
Correct traffic signs present	Y or N			0 – 1	
Sign condition satisfactory	Y or N			0 – 1	
Potential Impact	Table 5			1 – 4	
Good visibility (in good weather)	Y or N				
Footway usage					
Road Class	Table 4			1 - 5	
Total risk score					
Additional comments					
Recommended option from flow chart (Appendix DMBC2)	No Treatment - Monitor	Maintenance	Other Road Safety Measures	Resurface or Surface Treat	Revise IL
Notes to recommendation					

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Appendix DMBC 2

Detailed Investigation 'Output Options' flow chart.



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Appendix DMBC 3 Reference Tables for Initial and Detailed Investigations

Table 1 Skid Deficiency	Risk Score
< 0.05	1
>= 0.05 and <0.10	2
>= 0.10 and <0.15	3
>= 0.15 and <0.20	4
>= 0.20	5

Table 2 No. of collisions	Risk Score
0	0
<=2	1
>2 and <5	2
>=5	3
1 fatal	4
>1 fatal	5

Table 3 Speed Environment (miles/hr)	Risk Score
Less than 40	1
40	2
50	3
60 or greater	4

Table 4 Road Class	Risk Score
Other	1
UU/RU	2
C	3
B	4
A	5

Likely Impact reference		Risk Score
SI	Slight	1
SI/Se	Slight /Serious	2
Se	Serious	3
Se/F	Fatal	4

Table 6 Investigatory Level	Risk Score
Less than 0.35	1
0.35 to 0.39	2
0.40 to 0.44	3
0.45 to 0.50	4
Greater than 0.50	5

Table 5 Likely Impact due to skidding.	<= 40 Mph	>40 Mph
Location (Site Category)		
Roundabout	SI/Se	Se
Junction	Se	Se/F
Radius	Se	Se/F
Feature i.e. xing	Se/F	Se/F
Non- event Carriageway	Se	Se/F

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Appendix DMBC 4 - The Defined Network

- The network to be surveyed will be those sections of Classified A,B and C roads that are identified with a 'SCRIM' marker within the computer system and will be known as the 'defined network'.
- Single carriageway roads will be surveyed in both directions.
- Dual carriageways will be surveyed in both directions.
- Surveys will be carried out in the lane carrying the greatest number of HGV's – Normally the leftmost permanent lane (Lane 1) (unless otherwise recorded on the system and instructed as such)
- There may be occasions where surveys cannot be achieved due to network restrictions or network layout constraints. Where such issues arise it may be necessary to arrange for specific surveys to be undertaken at a later time or date.

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Appendix DMBC 5

References:

- HD28/15 Skidding Resistance
- DMBC Skidding Policy
- Highways Act 1980
- Well managed Highway Infrastructure: A Code of practice 2016
- BS-7941-1 'Methods for measuring the skid resistance of pavement surfaces. Sideway-force Coefficient Routine Investigation Machine 2006'.
- BS-7941-2 'Methods for measuring the skid resistance of pavement surfaces. Test method for measurement of surface skid resistance using the 'Grip Tester braked wheel fixed slip device

Glossary of terms

- SCRIM - Sideways Force Coefficient Routine Investigation Machine
- CSC - Characteristic SCRIM Coefficient
- SFC – Sideways Force Coefficient
- IL - Investigatory Level
- SD – SCRIM Deficiency or Skid Resistance Difference
- SASS – Single Annual Skid Survey – A method used for calculating the CSC
- LECF - Local Equilibrium Correction Factor - the correction factor used to calculate the CSC
- Site – A Site is an assessment length with consistent Site Categorisation and Investigatory Level whose length is defined in table 6.1 (typically site lengths range from 50-149m and 10m for roundabouts). Detailed investigations are undertaken for whole sites
- SAL – Skid Assessment Length, another term used for a 'Site' (detailed above)
- Urban Attribute – denotes network sections subject to 40mph or less speed restrictions (Not related to whether the environment is built up)
- Rural Attribute – denotes network sections subject to 50mph or above speed restrictions (Not related to whether the environment is not built up)
- AADF – Average Annual Daily Flow is the average over a full year of the number of vehicles passing a point in the road network each day
- PSV- Polished Stone Value