

Liverpool City Region Highway Safety Inspection Framework

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1. Introduction

- 1.1 Section 41 of the Highways Act 1980 places a statutory duty on all Highway Authorities (HA) to maintain the highway network under their control. For there to be a breach of section 41 there must have been a failure to maintain or a failure to repair.
- 1.2 All councils listed in appendix A have collaboratively contributed to this framework of principles in order to provide a special defence by virtue of Section 58 of the Highways Act 1980 in an action against the Council for an alleged breach of Section 41.
- 1.3 Highway Authorities (HA) need to prove that they have taken such care as in all the circumstances was reasonably required to secure that the part of the highway was not hazardous or potentially hazardous. This is usually proved by the Council having a reasonable system of routine scheduled highway safety inspections in place having regard to various factors set out within section 58 of the Highways Act 1980

2. Overview

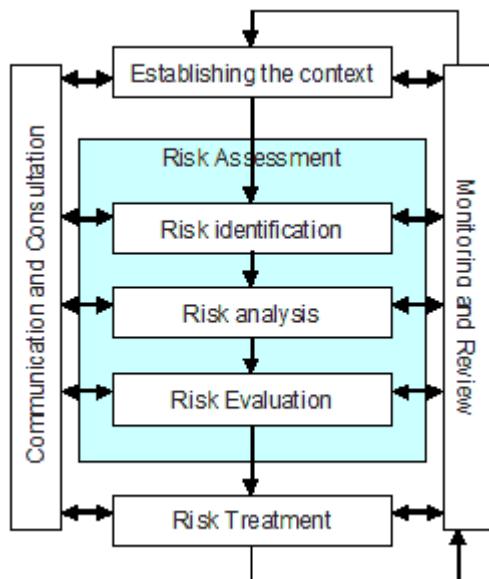
- 2.1 This framework has been developed with the primary aim of providing direction to those officers involved in undertaking highways safety inspections that they may carry out their duties with consistency and to clear recognised and understood criteria.
- 2.2 The information contained within this framework sets out the practices in terms of network hierarchy, investigatory levels, frequency of inspection and response times to repair for defects identified on a Risk Based Approached (RBA).
- 2.3 This framework has been developed through a collaborative working group of officers from a number of authorities listed at Appendix A who are directly involved at varying levels of responsibility in the function of highway maintenance, inspections, and claims management. The new Code of Practice, Well Managed Highway Infrastructure (WmHi), published on 28 October 2016 recommends.

'In the interest of route consistency for highway users, all authorities, including strategic, local, combined and those in alliances, are encouraged to collaborate in determining levels of service, especially across boundaries with neighbours responsible for strategic and local highway networks'.

- 2.4 This framework gives due regard to all the Council highway duties and has adopted the guidance that reflects the recommendations from the new WmHi.

- 2.5 The new WmHi recommends '*Changing from reliance on specific guidance and recommendations in the previous Codes to a risk-based approach determined by each Highway Authority*'. The council's frequency of inspection and specific investigatory levels are based on the appropriate risk, functionality or usage of the highway'. It further recommends adopting standards set by ISO 31000.
 - 2.6 ISO 31000 is a family of standards relating to risk management codified by the International Organization for Standardization. The purpose of ISO 31000:2009 is to provide principles and generic guidelines on risk management through a systematic approach to deliver continuous improvement.
 - 2.7 Figure 1 below shows an example risk management process, based on ISO 31000

Figure 1



3. Types of Highway Inspections

3.1 SCOPE

- 3.1.1 The scope of this framework document is limited to Safety Inspections of the adopted highway maintainable at public expense.
- 3.1.2 Safety Inspections are designed to identify all defects likely to create danger or serious inconvenience to users of the network or the wider community. The risk of danger is assessed on site, and the defect identified and assigned an appropriate priority and response period
- 3.2 The methodology is to undertake safety inspections as one process to enable inspectors to focus specifically on defects which if not repaired, are or may become a potential danger to road users and pedestrians
- 3.3 Highway safety Inspections are derived from two main sources:
 - Planned cyclic safety inspections to identify potential dangers; and
 - Ad-hoc Reactive safety inspections following reports in respect of the condition of the highway
- 3.4 Records of cyclic safety inspections and safety inspections following enquiries are maintained on the authorities Highway Management Information System.

4. Hierarchy and Frequency

4.1 Hierarchy

- 4.1.1 The adopted highway has been classified by type of carriageway, footway and cycleway within the hierarchy in accordance with WmHi
- 4.1.2 The council's frequency of inspections is based on the appropriate, functionality or usage of the highway and the subsequent hierarchy assigned see tables 1 and 2 below.

Table 1

Category	Category Name	Short Description	Long Description	Frequency
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.	1 month
3a	Main Distributor	Major Urban Network and Inter-Primary Links. Short - medium distance traffic	Routes between Strategic Routes and linking urban centres 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.	1 month
3b	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	1 month
4a	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 interconnecting roads with 30 mph speed limits random pedestrian movements and uncontrolled parking	3 monthly
4b	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.	12 monthly

Category 1 is not normally the responsibility of the Highway Authority and for this reason no frequency has been included within this table

Table 2

Category	Category Name	Short Description	Long Description	Frequency
1(a)	Footway	Prestige Walking Zone	Very busy areas of towns and cities with high public space and street scene contribution	1 month
1	Footway	Primary Walking Route	Busy urban shopping and business areas and main pedestrian routes.	1 month
2	Footway	Secondary Walking Route	Medium usage routes through local areas feeding into primary routes, local shopping centres etc.	3 monthly
3	Footway	Link Footway	Linking local access footways through urban areas and busy rural footways	6 monthly
4	Footway	Local Access Footway	Footways associated with low usage, short estate roads to the main routes and cul-de-sacs.	12 monthly
A	Cycleway		Cycle lane forming part of the carriageway, commonly 1.5 metre strip adjacent to the nearside kerb. Cycle gaps at road closure point (no entries allowing cycle access).	As for Roads
B	Cycleway		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.	6 monthly
C	Cycleway		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.	12 monthly

4.2 Inspection Frequency

- 4.2.1 The road category within the hierarchy, in combination with traffic use, will be the main determinant of inspection frequency.
- 4.2.2 Site specific factors are then assessed to temporarily or permanently increase or reduce the frequency to mitigate any significant increase/reduction in risk. The factors that may be taken into consideration are listed below in table 3 but is not an exhaustive list
- 4.2.3 Table 3 details the possible determining factors for increasing or decreasing inspection frequencies, although the road will maintain its original hierarchy status.

Table 3

Characteristics of street	Schools, shops, hospitals, areas of large employment located adjacent to the highway
Characteristics of adjoining network elements	Hierarchy of streets adjoining
Condition data	Visual Assessments Defect numbers including minor repairs
Accident rates	Claim statistics recorded on street, numbers and trends derived from claims
Wider policy or operational considerations.	Enquiries, complaints data

- 4.2.4 Whilst the hierarchy is the initial determinant of the inspection frequency the final inspection frequency will adopt a risk based approach through the individual assessment of the Carriageway, Footway and Cycleway to determine the required inspection frequency
- 4.2.5 This approach means that whilst the hierarchy determines the initial inspection frequency the final frequency of inspection will depend on the final risk based assessment.
- 4.2.6 Reviews of appropriate inspection frequencies will be undertaken on a regular basis with a recommendation of 5 year intervals or when the need is specifically identified during an inspection.

4.3 Additional Inspections and Exceptional Circumstances

- 4.3.1 Additional inspections may be necessary in response to user or community concern, as a result of incidents, extreme weather conditions or monitoring

information. A reduction in inspections or the reprioritisation may additionally be necessary when circumstances dictate. These have been identified through the risk assessment process and have been summarised below in section 4.4 to 4.8. The occurrence of any additional inspection and its outcome is recorded in the same format as a programmed Safety Inspection but is recorded as being an additional inspection. (For reduced inspection see below)

4.4 Reduced Inspection Due to Exceptional Circumstances

- 4.4.1 In exceptional circumstances, inspections may not be able to be carried out, e.g. during periods of extreme weather. In these circumstances, the Safety Inspection policy may be suspended and/or temporary measures put in place. The decision and action taken is to be documented.

4.5 Reactive Inspections

- 4.5.1 An appropriate person with the relevant experience and knowledge responds to user or community concerns and requests for service. The defects are assessed with the same criteria and investigatory levels as those within the programmed Safety Inspection process.

4.6 Adverse/Extreme Weather Conditions

- 4.6.1 *Ice/snow* – These types of inspection should be contained within the authorities Winter Maintenance Policy.
- 4.6.2 *Floods/flood damage/storm damage* - These types of inspection should be contained within the authorities Flood Management or Gully/Drainage Cleansing Policy.

4.7 Amendment to Inspection Frequency

- 4.7.1 It is recognised that some locations due to their condition and other circumstances may require more frequent safety inspections than set in this framework.
- 4.7.2 In these circumstances the inspection frequency can be increased following an assessment and will be documented. Once the additional risk has been reduced and reassessed an additional variation in the inspection frequency can be documented to change the inspection frequency back to its original or appropriate frequency.

4.8 Resources

- 4.8.1 The authority in common with other highway authorities has limited resources with which to maintain the network and must balance the resource available with the risk to the safety of road users and therefore has adopted a risk based approach to the inspection and repair of its highway network

5. Highway Safety Inspections

- 5.1 The purpose of these carriageway safety inspections is to identify defects that are likely to pose a risk or serious inconvenience to users of the network or the wider community and to arrange for their remedy.
- 5.2 Highway safety inspections are carried out to specified frequencies. During the inspection a Risk Based Approach is taken to identify defects and will be recorded and processed for repair within the Highways Management Information System

6.0 Inspection Methodology

- 6.1 When footways have a walked inspection at the assigned frequency determined taking in to account the hierarchy, the carriageway will also be inspected during these walked inspections.
- 6.2 When, in accordance with the hierarchy a RBA may be taken to determine the appropriateness for carriageways and footways to be inspected by means of a driven inspection with one of the determining factors being the safety of those carrying out the inspection.
- 6.3 Before commencing the walked safety inspection the inspector shall note the; following information:
- The street name
 - Inspection frequency
 - Current date
 - Weather conditions (Ground conditions)

6.4 Walked Highway Safety Inspections

- 6.4.1 The inspector shall position themselves in a safe location on the footway, in such a position that it enables him/her to view the full width of the area to be inspected.
- 6.4.2 When the inspector encounters parked motor vehicles etc. they shall take reasonable steps where appropriate so as to view the area obstructed by the vehicle without endangering themselves.
- 6.4.3 The inspector shall proceed along the footway identifying defects that meet the investigatory levels set out in table 4. All defects at investigatory level will be Risk Assessed and have the appropriate repair period applied to it
- 6.4.4 All defects meeting the investigatory level shall be recorded on their handheld device, or by any other means operated by the highway authority. On completing the inspection of one side of the street the inspector shall apply the same process to the opposite side of the road.

6.5 Driven Carriageway Safety Inspection

6.5.1 Before commencing the Driven Safety Inspection the inspector shall note the; following information:

- The street name
- Inspection frequency
- Current date
- Weather conditions (Ground conditions)

6.5.2 Driven carriageway inspections shall be carried out utilising a driver (albeit more often than not they will be a trained highway inspector) and a highway inspector. The driver shall be responsible for driving and the highway inspector will be responsible for carrying out the safety inspection.

6.5.34 The Inspector and vehicle driver shall have due regard to their personal safety and in particular from moving traffic either on the main highway or at junctions and crossings. On no account must he/she put himself/herself in any hazardous situation.

6.6 Inspection Vehicle

6.5.1 The inspection vehicle used for the driven highway safety inspections will be an appropriate vehicle for the task complying with relevant standards for vehicle signage (“chapter 8”).

7. Defect Investigatory Levels

7.1 The investigatory level is the level at which a risk assessment takes place to determine the action or non-action to be taken.

7.2 The action or non-action will be recorded and processed within the Highways Management Information System

7.3 The Investigatory levels for footways and carriageways adopted are detailed in table 4 below;

Table 4 Investigatory Levels

Footway investigatory level	25mm
Carriageway Investigatory level	40mm
Carriageway investigatory level at pedestrian crossing points	25mm

<i>Kerb defects</i>	<i>50mm horizontal displacement</i>
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8. Repair Response Times

- 8.1 During safety inspections, all observed defects that meet the investigatory level are risk assessed and the level of response determined with all information being recorded at the time of the inspection.
- 8.2 This Policy defines defects by priority:
- Priority 1 those that require prompt attention because they represent an immediate or imminent hazard;
 - Priority 2 to 5 - all other defects.

8.3 Priority 1

- 8.3.1 These defects should be corrected or made safe at the time of the inspection, if reasonably practicable. In this context, making safe may constitute displaying warning notices, coning-off or fencing-off to protect the public from the defect or other suitable action. If the inspection team cannot make safe the defect at the time of inspection then they will instigate the relevant procedures to ensure appropriate resources are mobilised to make the defect safe.

8.4 Priority 2 to 5

- 8.4.1 These defects are those which are deemed not to represent an immediate or imminent hazard and which can be repaired within longer timescales. Priority 2 to 5 defects are categorised according to priority with response times defined within Table 6.

9. Defect Risk Assessment

- 9.1 The principles of a system of defect risk assessment for application to safety inspections are set out below. Any item that meets the investigatory level is to be assessed using the risk assessment matrix in table 5

9.2 Risk Factor

- 9.2.1 The risk factor for a particular risk is
- Risk Factor = Likelihood score x Consequence score.
- **Likelihood of Event Occurring** is the inspector's assessment of likelihood of the defect **to pose a risk or serious inconvenience to users of the network or the wider community and to arrange for their remedy**. It

follows an assessment of the road Hierarchy and the location of the defect within the road.

- **Consequence of Event Occurring** – The impact/severity is quantified by assessing the extent of damage likely to be caused should the risk be realised. The main consideration of impact/severity is the magnitude or dimension of the defect. However, other variables such as road speed may also affect the likely impact, its location to vulnerable users and other hazards within the immediate environment
- 9.2.2 It is this Risk Factor that identifies the overall risk rating and consequently the appropriateness of the speed of response to remedy the defect.
- 9.2.3 Having identified a particular risk, assessed its likely impact and probability and calculated the risk factor, the priority and the timescale to rectify the defect is allocated to it.
- 9.2.3 The risk assessment matrix detailed below will be the prime document used by the Highway Inspectors during the course of their inspections. The matrix will be used to assess the risk associated with the defect and the appropriate response.

Table 5 – Risk Matrix

		Consequence			
		Low (1)	Medium (2)	High (3)	V High (4)
Likelihood	Low (1)	1	2	3	4
	Medium (2)	2	4	6	8
	High (3)	3	6	9	12
	V High (4)	4	8	12	16

Table 6 Priority Responses

Priority	Response Period	Scores
P1	2 hours	16
P2	24 Hours	8-15
P3	14 days Calendar	5-7
P4	28 days Calendar	2-4
P5	As Programmed	1

9.3 Inspector Discretion

- 9.3.1 Inspectors may use discretion in arranging and prioritising repairs where the defects identified combined with additional factors represent either an existing or potential future hazard.
- 9.3.2 The inspector in his final assessment of the risk takes account of other on site local factors. Local factors may include the close proximity of a school, hospital or other establishment which attracts increased activity. The location of the defect relative to other features such as junctions and bends, proximity to other defects are to be taken in to account. The final on site risk assessment by the inspector allows the appropriate response to be applied.

9.4 Minor Defects

- 9.4.1 It is recognised that on any highway network, a multitude of minor defects will exist which do not pose any risk and do not meet the Investigatory Level and may result in no action being taken.

10. Enquiries

- 10.1 Enquiries will be dealt with in accordance with each individual Highway Authority as set out in their highway safety inspection policy

11. Training

- 11.1 It is recommended that all staff that are employed to undertake Safety Inspections are trained to Highway Safety Inspection Qualification City and Guilds 6033 – Units 301 and 311 or equivalent and lasts 5-years.
- 11.2 It is also recommended that any new highway inspector shadows a colleague within the inspection team for a period of time prior to being formally authorised and documented to undertake inspections.
- 11.3 Induction training will be undertaken for any new employees.
- 11.4 All highways inspectors will be subject to the authority's performance management & skills development process which should be a documented
- 11.5 Each team member is provided with this framework.
- 11.6 Regular Team Meetings and Tool Box Talks will be undertaken to discuss issues in relation to the inspection process therefore allowing it to be continually reviewed.

11.7 Competency

11.7.1 Competence is the ability to perform activities to a recognised standard on a regular basis. It combines practical and thinking skills, knowledge and experience and will be enhanced by the following elements:

- Manager Introduction & Briefing
- Work shadowing;
- Highway related training modules contained within the City & Guilds training scheme; Units 301 and 311 or equivalent.
- On-site staff appraisals/work monitoring (line supervisor);
- Regular team meetings;
- Staff Development Reviews (Annually)
- Any other external courses of relevance to post
- Documents relating to relevant CoP

Consultees

Halton Borough Council

Knowsley Borough Council

Liverpool City Council

St Helens Borough Council

Wirral Borough Council

Sefton Borough Council

Warrington Borough Council

Lancashire County Council

Appendix A