

Greater Manchester Highway Safety Inspection Framework

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1. Introduction

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.

All councils within the Greater Manchester Combined Authority (GMCA) region in complying with this duty to maintain, have collaborated to implement and carry out highway safety inspections in accordance with this framework document 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.

Highway Authorities (HA's) 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 dangerous for traffic. 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

This framework document 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.

Greater Manchester (GM) is one of the country's most successful city-regions. Home to more than 2.7 million people and with an economy bigger than that of Wales or Northern Ireland

The GMCA is made up of the ten Greater Manchester councils and Mayor, who work with other local services, businesses, communities and other partners to improve the city-region.

The ten councils (Bolton, Bury, Manchester, Oldham, Rochdale, Salford, Stockport, Tameside, Trafford and Wigan) have worked together voluntarily for many years on issues that affect everyone in the region, like transport, regeneration, and attracting investment. Our highway network comprises over 10,000 km (6,000 miles) of roads.

The information contained within this framework document sets out the practices in terms of network hierarchy, investigatory levels, frequency of inspection and response times to repair for all the 10 GMCA authorities. Each of these authorities will then produce its own Code of Practice for inspections complying with the practices set out in this framework document

This framework document has been developed through a collaborative GMCA working group of officers 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'*.

This framework document gives due regard to all Council highway duties and has adopted the guidance that reflects the recommendations from the new WmHI. The framework document is itemised on the agenda for the GMCA Highway Claims Benchmarking Group for the purpose of continual review and improvement.

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. 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 out in ISO 31000.

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.

Figure 1 below shows an example risk management process, based on ISO 31000

Figure 1

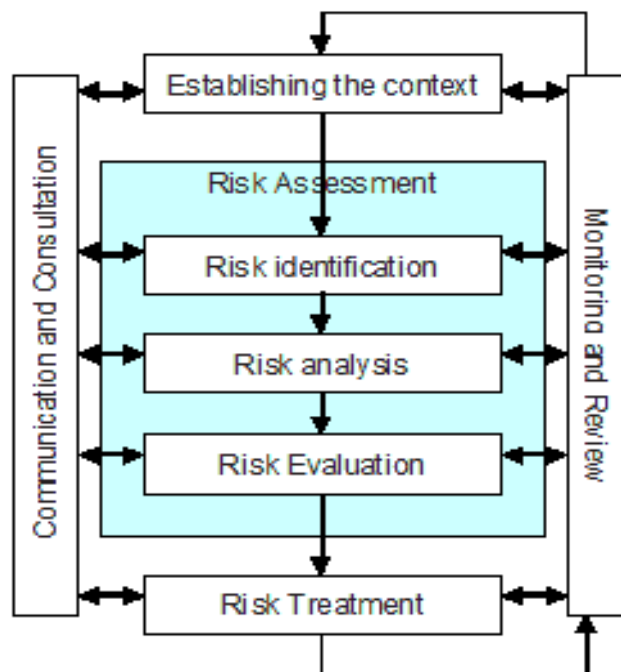
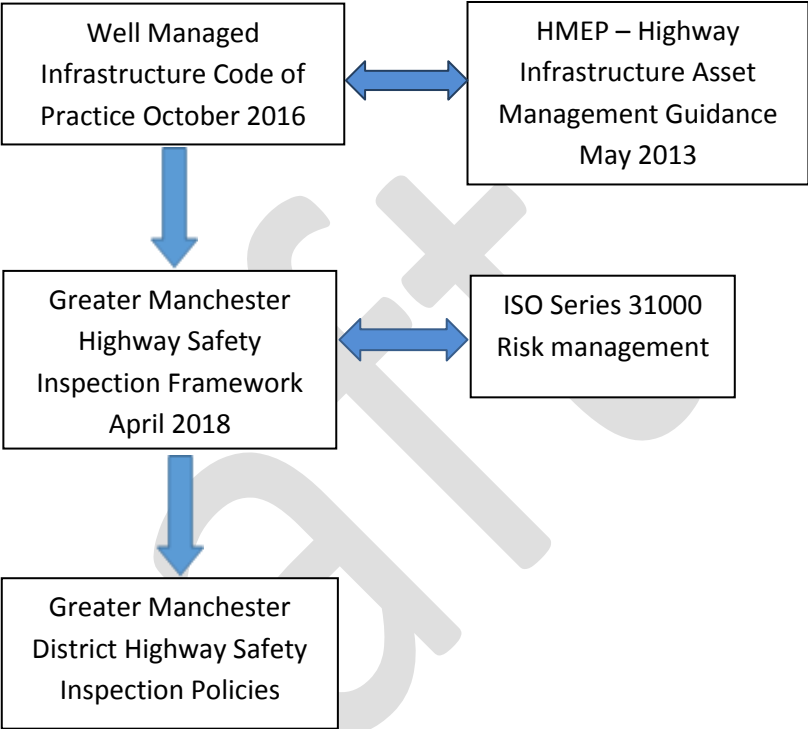


Figure 2 below shows the relationship between the guidance documents, Codes of Practice and Frameworks used to help HA's in developing their district highway safety inspection policies.

Figure 2



3. Types of Highway Inspections

This framework document deals specifically with highway safety inspections and repairs.

The GMCA methodology is to undertake safety inspections as one process to enable inspectors to focus specifically on defects which if not repaired, are likely to become a potential danger to road users and pedestrians.

Highway safety Inspections are derived from two main sources, these are;

- Planned cyclic safety inspections to identify potential dangers; and
- Ad hoc reactive safety inspections following enquiries in respect of the condition of the highway.

Records of cyclic safety inspections and reactive safety inspections following complaints are maintained on purpose designed computer databases individual to each of the 10 GMCA districts party to this framework document.

4. Hierarchy and Frequency

All the adopted highways have been assigned a carriageway, footway and cycleway hierarchy in accordance with WmHI.

Table 1 below details the hierarchy determining factors to be considered when assigning network hierarchies. Other factors may also be pertinent.

Table 1

Road classification	Strategic network, A,B,C, unclassified network
Traffic use	Traffic flow data, footfall data
Characteristics of street	Schools, shops, hospitals, areas of large employment located adjacent to the highway
Characteristics of adjoining network elements	Hierarchy of adjoining streets
Condition data	Walked survey data, SCRIM, SCANNER, Structural Maintenance Visual Assessments (CVI or DVI), Defect numbers including minor repairs
Insurance claims data	Claim statistics recorded on street, numbers and trends derived from claims
Wider policy or operational considerations.	Enquiries, complaints data

The council's frequency of inspections is based on the appropriate risk, functionality or usage of the highway and the subsequent hierarchy assigned. The road category within the hierarchy, in combination with traffic use, will be the main determinant of inspection frequency. Reviews will be undertaken on a 5 year cycle and by competent staff on a group basis.

Table 2 below shows the inspection hierarchy and frequency of inspections to be adopted by the GMCA district highway authorities, although site specific factors may merit a decision to temporarily or permanently increase or reduce the frequency in a specific location (for example to mitigate the risk of unusually high defect levels or accident rates).

Table 2

Feature	Category	Reference	Frequency
Carriageways	Strategic Route	2	1 month
	Main Distributor	3(a)	1 month
	Secondary Distributor	3(b)	1 month
	Link Road	4(a)	3 months
	Local Access Road Minor Roads	4(b) 4(b)	1 year 1 year
Footways	Prestige Walking Zones	1(a)	1 month
	Primary Walking Routes	1	1 month
	Secondary Walking Routes	2	3 months
	Link Footways	3	6 months
	Local Access Footways Minor Footways	4	1 year 1 year
Cycle ways	Part of Carriageway	A	As for Roads
	Cycle Track, Shared Cycle/Footway – a route for cyclists not contiguous with the public footway or carriageway or a shared cycle/pedestrian path	B	As for footway/Annually

5. Highway Safety Inspections

Highway safety inspections are carried out to specified frequencies. During the inspection, defects which are identified using the risk matrix criteria outlined within this framework document, are recorded and processed for repair.

Inspection Methodology

All footways will have a walked inspection at the assigned frequency determined by the hierarchy, and the carriageway will also be inspected during these walked inspections.

When, in accordance with the hierarchy, it is only the carriageway to be inspected, then the inspection can be by means of a driven or walked inspection.

Walked Highway Safety Inspections

Before commencing any walked safety inspection, the inspector shall note the following information;

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

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 footway and carriageway to the centre line including the carriageway channel areas.

When the inspector encounters parked vehicles they shall take reasonable steps where appropriate so as to view the area obstructed by the vehicle.

The inspector shall proceed along the footway, identifying defects that meet the investigatory levels set out in table 3. The inspector identifies defects and then undertakes a risk based approach on assessing the danger of the defect

Any defect which falls at or outside these levels that the inspector identifies, would be assigned a score from table 4 and then a response time from table 5. These will be recorded on their handheld device, or by any other means operated by the individual HA. On completing the inspection of one side of the street, the inspector shall apply the same process to the opposite side of the road.

Driven Carriageway Safety Inspection

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.

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

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

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.

The Inspector 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.

This relevant method statement must be read in conjunction with the Highways agency documents listed below, which are;

- Temporary Traffic Management on High Speed Roads good working practice;
- Guidance for safer Temporary Management workforce issues; and
- Guidance for crossing High Speed Roads on foot during temporary traffic management works

All Inspectors in an inspecting role carrying out driven carriageway safety inspections of high speed roads, shall attend the High Speed Traffic Management Awareness Course before they are allowed to carry out inspections of any high speed road. Drivers of these inspections will be required to attend the course also.

Inspection Vehicle

The inspection vehicle used for the driven highway safety inspections will be an appropriate vehicle for the task. The vehicle will ideally be equipped with all the necessary livery, flashing beacons, advisory LED vehicle mounted display signage etc., so can be driven safely at low speeds to facilitate a driven visual inspection of the highway having due regard to minimising inconvenience to other road users.

6. Defect Investigatory Levels

This section of the framework document sets out the investigatory levels and operational processes that are considered to be appropriate and responsible, taking into account the safety of highway users.

Table 3 below lists the Defect Investigatory levels that would trigger the risk assessment using the matrix.

Table 3

Footway investigatory level	25mm
Carriageway Investigatory level	40mm
Carriageway investigatory level at pedestrian crossing points	25mm
Kerb defects	50mm or over horizontal displacement

7. Repair Response Times

During safety inspections, all observed defects that provide a potential risk to users are recorded and the level of response determined on the basis of an onsite risk assessment.

This Policy defines defects in two categories, which are;

- **Category 1** - those that require prompt attention because they represent an immediate hazard; and
- **Category 2** - all other defects.

Category 1

These defects will 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 emergency call procedures to ensure appropriate resources are mobilised to make the defect safe. These procedures aim to ensure initial attendance to the defect within 2 or 24 hours of the defect being identified.

Category 2

These defects are those which are deemed not to represent an immediate hazard and which can be repaired within longer timescales. Category 2 defects are categorised according to priority with response times defined within Table 5 below.

8. Defect Risk Assessment

The principles of a system of defect risk assessment for application to safety inspections are set out below. Any item with a defect level which corresponds to, or is in excess of, the minimum investigatory level, is to be assessed using the risk assessment matrix in table 4 below.

Risk Factor

The risk factor for a particular risk is calculated by;

- Risk Factor = Likelihood score x Consequence 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.

Having identified a particular risk, assessed its Likelihood and Consequence thus calculating the risk factor, the category and the timescale to rectify the defect is

either defined as a Category 1 response, or allocated to one of the Category 2 defect types (Low, Medium or High).

Likelihood of Event Occurring

This is the inspector’s assessment of the likelihood of the defect affecting the safe passage of vehicles along the highway, or affecting the structural integrity of the highway. It follows an assessment of the highway hierarchy and the location of the defect within the highway.

Consequence of Event Occurring This is the impact/severity and 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

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 determine the defect categorisation and response.

Table 4 – Risk Matrix (Taken from Institute of Highway Engineers)

Likelihood of Event Occurring	Consequence of Event Occurring				
	Negligible	Low	Medium	High	Severe
Negligible	1	2	3	4	5
Very Low	2	4	6	8	10
Low	3	6	9	12	15
Medium	4	8	12	16	20
High	5	10	15	20	25
Key to Risks					
Low		Medium		High	

Priority Responses defined by colour

Table 5

Risk factor	Defect Category	Priority Response
25	1	1
15 to 25	1	2
9 to 12	2	3
5 to 8	2	4
2 to 4	2	5
1	2	6

Priority	Response (Calendar days)
1	2Hr
2	24Hr
3	14 Days
4	28 Days
5	Considered For Planned Maintenance
6	Review At Next Inspection

Minimum Investigatory Levels

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 resources to undertake repairs. Any defects which do not meet the minimum investigatory levels can be recorded should the Inspector deem this appropriate using his discretion (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 recorded as Cat 2 defects but assigned a planned maintenance response time, defined in the risk matrix priority responses

Typical Types of Defects

Typical types of highway defects to be identified during scheduled highway safety inspections, not all of which give rise to a duty under section 41 are set out in each HA's safety inspection policy

9. Enquiries

Enquiries will be dealt with in accordance with each individual district HA service levels and set out in each HA's safety inspection policy

10. Training

It is highly recommended that all staff that are employed to undertake highway safety inspections are trained to Highway Safety Inspection Qualification City and Guilds 6033 – Units 301 and 311. This qualification lasts 5-years and refresher training must be undertaken.

It is also strongly recommended that any new highway inspector shadows a colleague within the inspection team for a period of time prior to being allowed to undertake inspections alone, and then is subject to close monitoring and supervision.

Induction training will be undertaken for any new employees.

The appropriate line manager / supervisor also undertakes regular follow-up checks in the way of on-site staff appraisals with each inspector which is then recorded and signed by both the supervisor and inspector as a true record.

Each team member is provided with this framework document.

The highway inspectorate will hold regular team meetings to discuss issues in relation to the inspection process, therefore allowing it to be continually reviewed.

Make up of training to include;

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