



# Royal Borough of Windsor and Maidenhead

## HIGHWAY SAFETY INSPECTION MANUAL (HSIM)

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## Abbreviations

The following abbreviations are used in this plan:

EToN	Electronic Transfer of Notices
NRSWA	New Roads and Street Works Act 1991
SUSTRANS	A Charitable organisation that administers The National Cycle Network
WERR	Windsor and Eton Relief Road
COP	Code of Practice for Well-managed Highway Infrastructure 2016
RBWM	Royal Borough of Windsor and Maidenhead

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## Section 1: Introduction

### 1.1 Introduction

This document forms part of RBWM's Highway Asset Management Plan (HAMP) suite of documents and should be read in conjunction with Appendix C: Highway Maintenance Management Plan (HMMP).

It describes the procedures for carrying out highway safety inspections and sets out investigatory levels to be applied across the network for assessing safety defects within the highway boundary.

Motorway and all-purpose trunk road that pass through RBWM's geographical boundary are the responsibility of Highways England and their agents and as such are outside the remit of this policy.

The responsibility for maintaining private streets rests with the landowner or frontagers and as such is outside the remit of this policy.

### The Inspector's Duties

Inspectors should carry out scheduled inspections of the adopted highway in accordance with the frequencies and information set out in the HMMP. They also carry out ad hoc inspections for example in response to customer contacts.

### Systems

RBWM uses Pitney Bowes Confirm software for recording inspections and highway asset data and QGIS for its mapping requirements.

### Recording Defects

All actionable defects will be accurately and promptly recorded on the Confirm software together with any associated repair maintenance orders.

Inspectors where appropriate will mark up defects on site or will photograph the site to assist contractors in the location and identification of an area for repair works. Photographs will also be used for before and after comparisons following repair works.

### Works Orders

All works orders to both internal and external contractors are issued via the Confirm system. Works orders will normally be raised the same day a defect is recorded or as soon as is reasonably practicable.

### Customer Enquiries

All highway maintenance related customer contacts are logged onto JADU/Confirm and issued to the area inspector for site inspections and action where appropriate.

Where enquiries are logged through the JADU/Confirm software, notes will be added to the enquiry and a response will be provided to the customer.

If additional information is required for inspectors to assess an enquiry, inspectors will use the contact details available to directly contact the customer.

## 1.2 Purpose of Safety Inspections

Inspecting the highway allows RBWM to identify and take action to remove those hazards causing danger or serious inconvenience to highway users.

The inspections also help to develop longer term planned maintenance programmes to help deliver the HAMP.

Safety inspections are designed to identify all defects likely to create danger or serious inconvenience to users of the network or the wider community. This includes defects that require urgent attention (within 3 or 24 hours) as well as those where the location and reduced level of severity is such that a longer response time is acceptable, or confirm that no repair is needed.

Highway safety inspections also:

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

## Section 2: Network Hierarchy and Inspection Frequency

A network hierarchy is the foundation of the maintenance strategy and safety inspection regime. The hierarchy adopted by RBWM reflects the needs, priorities and actual use of each road in the network.

### 2.1 Carriageways

Carriageways adopted as publicly maintainable are to be inspected in accordance with the following frequencies:

Category Name	Category	Inspection Frequency	Method of Inspection	Maximum Interval Between Inspections
Strategic route	2	1 month	Driven	6 weeks
Main distributor	3(a)	1 month	Driven	6 weeks
Secondary distributor	3(b)	3 months	Driven	16 weeks
Link road	4(a)	6 months	Driven	30 weeks
Local access	4(b)	12 months	Driven	60 weeks
Minor roads	5	12 months	Driven	60 weeks

Where driven and walked inspections are due on a simultaneous date the walked inspection takes preference.

### 2.2 Footways

Footways adopted as publicly maintainable are inspected in accordance with the following frequencies:

Category Name	Category	Inspection Frequency	Method of Inspection	Maximum Interval Between Inspections
Prestige walking zone	1a	2 week	Walked	4 weeks
Primary walking route	1	1 month	Walked	6 weeks
Secondary walking route	2	3 months	Walked	16 weeks
Link footway	3	6 months	Walked	30 weeks
Local access footway	4	12 months	Walked	60 weeks
Minor footway	5	12 months	Walked	60 weeks

## 2.3 Cycleways

Cycleways adopted as publicly maintainable will be inspected in accordance with the following frequencies:

Category Name	Inspection frequency	Method
Cycle lane forming part of carriageway	As for roads	driven
Cycle track	As for footways	cycled or walked
Significant cycle flows on carriageway	As for roads	driven

Any cycle tracks that are not part of the adopted public highway are not included within any inspection regime e.g. off road Sustrans routes.

Highway assets such as traffic signs, road markings, reflective studs, highway trees, gully and manhole covers etc. will be inspected for safety during the routine inspection.

In the case of highway surfaces being obscured by flood water or snow to such an extent that an inspection cannot take place during the maximum interval an inspection will be carried out as soon as possible after the obstruction has cleared.

In the case of a reported defect where the inspector is unable to assess due to an obstruction e.g. a parked vehicle, they will return as soon as is reasonably practicable to assess and action as necessary.

## Section 3: Safety Inspections

### 3.1 Procedure / Method

Highway safety inspections focus on the recording of defects that are deemed to pose a hazard but not at the expense of the inspector's own safety or that of others using the highway.

The safety of all road users must not be compromised when carrying out the inspection and the list given under the headings "driven inspections" and "walked inspections" detail the practice to be adopted.

The inspector is responsible for carrying out and recording all highway safety inspections. This includes a good description of the location for every item recorded in sufficient detail to enable all other parties involved a reasonable chance to locating its position.

Highway safety inspections should be avoided during the hours of darkness/dusk or under conditions of poor visibility, e.g. snow, fog, heavy rain.

Carriageway and cycleway inspections can be undertaken on foot if the associated footway is being inspected at the same time.

### 3.2 Driven Inspections

Driven inspections must always be carried out by two inspectors, in a suitable vehicle and at a speed that enables defects to be spotted. The guidance speed is 25mph.

One inspector will drive and the other will be looking for defects. The driver is not expected to be actively looking for and recording defects. The names of both inspectors must be recorded on Confirm.

### 3.3 Walked Inspections

Walked inspections are carried out by one inspector who will walk down one footway surveying that footway and where applicable the adjoining carriageway to the centreline, then walk the opposite footway in the alternative direction repeating this process.

### 3.4 Associated Matters

- a) Formalised pedestrian crossing points should have the same investigatory levels as those for the adjacent footways.
- b) Uncontrolled pedestrian crossing (dropped kerbs and tactile slabs) should be treated as footway.
- c) Parking bays within the highway should be treated as carriageway with the associated investigatory levels. This means that parking bays located along a road will not require an enhanced regime. However areas where there is a higher than average footfall, such as shopping parades which include parking bays, then these will be risk assessed for any enhanced inspection regime that is deemed appropriate.
- d) Cycleways within the highway should be treated as carriageway or footway depending on their location, with the associated investigatory levels applied.
- e) Fences and barriers – a visual inspection of all highway fences, pedestrian barriers and safety fences will be undertaken during routine highway safety inspections. Any obvious damage to tensioned restraint barriers should be recorded and details reported to the structures team as soon as possible.
- f) Road markings and non-illuminated traffic signs – a visual assessment of the overall condition of signs, road markings and studs will be made at each carriageway safety inspection.
- g) Due to the impracticability of carrying out detailed inspections, manhole and utility covers will not be subject to any specific inspection beyond a visual check as part of the scheduled regime. Where practical ironwork within footways in hierarchy category 1a and 1 will be stepped on to assess stability.

Whilst the following fall within other maintenance and inspection regimes the highway inspector is expected to note and report any potential hazard during a safety inspection:

- h) Street lighting columns, illuminated signs and traffic lights - missing covers or panels, exposed wiring, damaged / defective / displaced or missing traffic signals shall be recorded and details passed to the Electrical Team as soon as possible.
- i) Highway trees – RBWM has a duty to ensure that all trees growing on or within falling distance of the highway do not pose a danger to highway users. Therefore a basic visual inspection will be included in highway safety inspections. Trees will be inspected at the same time as the footway to which they are adjacent. If the tree is not adjacent to a footway the carriageway inspection regime will be used. Should a basic visual inspection raise concerns with trees the information must be passed to the arboriculture team so that an appropriately trained inspector can investigate.
- j) Bridges and retaining walls – surface cracks or potholes in the surface of a bridge should be identified and recorded as per adjacent carriageway and footways. Any obvious damage to a bridge or retaining wall parapet should be recorded and details reported to the structures team as soon as possible
- k) Railway level crossing - carriageways, cycleways and footways and other highway features between the STOP road markings, traffic warning lights, barriers & associated signs are the responsibility of Network Rail. Although RBWM is not responsible for safety inspections between the STOP markings, any potential safety defect identified during safety or any other inspections will be reported to Network Rail as soon as possible.

## Section 4: Defects

Safety inspections are designed to identify all defects likely to create a danger or serious inconvenience to users.

On site judgement will always need to take account of particular circumstances, for example the degree of risk from a defect depends upon not merely its depth but also its surface area and location. Any item with a defect level which is near to, or is in excess of, the defect investigatory level is to be assessed for likely risk.

It should be noted that the term 'investigatory level' has been used deliberately to be clear that there is no expectation that repair action will necessarily be taken following the investigation. This is not an 'intervention level'. Rather the action to be taken will be determined by the dynamic risk assessment undertaken during the site inspection.

The degree of deficiency in highway elements will be crucial in determining the nature and speed of response.

Using this risk based approach means that where an inspector deems a defect does not pose a danger or serious inconvenience and a repair is not necessary, it does not need to be recorded. However the rationale behind any decision may be required at a later date and this will need to be produced on demand.

RBWM policy is that all repairs are permanent but if this cannot be arranged within each timescale the defect will temporarily be made safe or signed/barriered off.

### 4.1 Categories

Defects are defined in two categories:

#### Category 1

Those that require prompt attention because they represent an immediate or imminent hazard or because there is a risk of short-term structural deterioration.

It will generally not be possible to make safe the defect at the time of inspection, in which case repairs will be carried out as soon as reasonably practicable and in any case within a period of 24 hours (or within 3 hours if considered to pose a particularly high risk).

Where further, permanent repairs are required these will be carried out within 28 days. If, in order to carry out the works safely, a road closure or extensive traffic management is required then further works will be programmed to be undertaken as soon as practicable.

All Category 1 defects are therefore assessed and prioritised as follows:

**Priority 1** - Works to be repaired or made safe within 3 hours of notification.

**Priority 2** - Works to be repaired or made safe within 24 hours of notification.

## Category 2

Those defects which are deemed not to represent an immediate or imminent danger, serious inconvenience or risk of short-term structural deterioration. Such defects may have safety implications but are not required to be urgently rectified. Access requirements, other works on the road network, traffic levels, and the need to minimise traffic management should be considered as part of the overall assessment regarding response time.

Therefore where a defect is identified, a risk assessment then identifies the overall seriousness of the risk and the appropriate speed of response to remedy the defect.

Category 2 defects are therefore assessed and prioritised as follows

**Priority 3** - Works to be repaired within 7 calendar days.

**Priority 4** - Works to be repaired within 28 calendar days.

**Priority 5** - Works will be programmed by the contractor and commenced within three months.

**Priority 6** – No repairs required, monitor.

For defects involving utility plant or other private equipment RBWM is obliged to notify the owner of the apparatus that a defect is present, this procedure is set out in Appendix C to the HMMP.

Whether defects should be treated as Category 1 or 2, and the nature and speed of response will depend upon the assessed risk posed by various factors, for example:

- the depth, surface area or other degree of deficiency of the defect or obstruction;
- the volume, characteristics and speed of traffic;
- the location of the defect relative to highway features such as junctions and bends;
- the location of the defect relative to the positioning of users, especially vulnerable users, such as in traffic lanes or wheel tracks;
- the nature of interaction with other defects;
- whether a defect will deteriorate by the time of the next routine inspection (e.g. a defect found below investigatory level may be identified for repair if it is on a lower category road, but if it is on a road that is inspected at a higher frequency it will be possible to monitor the progress of the defect as it approaches or exceeds investigatory levels).

The priority response time for dealing with a defect is determined by reference to the risk response matrix table as guidance:

### Risk Response matrix

The HISM has a table showing investigatory levels.

IMPACT	PROBABILITY				
	1: VERY LOW	2: LOW	3: MEDIUM	4: HIGH	5: VERY HIGH
1: NEGLIGIBLE	1A	2B	3C	4D	5E
2, MINOR	2F	4G	6H	8I	10J
3 MODERATE	3K	6L	9M	12N	15O
4, SERIOUS	4P	8Q	12R	16S	20T

  

P6 - NO RESPONSE REQUIRED	P5 - 3 MONTHS	P4 - 28 DAYS	P3 - 7 DAYS	P2 - 24 HOURS	P1 - 2 HOURS
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Inspectors have full discretion to escalate a response if they consider it necessary given the character of the defect and its location.

The defect assessment risk matrix below provides guidance to inspectors, but in all the circumstances any response should align with the inspector risk assessment.

Potholes and general surface defects			
Recognised pedestrian areas, footways and shared use cycleways.		Carriageways	
Risk of interaction with pedestrians (footway)	Near to or in excess of 25mm investigatory level and/or likelihood of worsening in short term	Risk of interaction with vehicle (carriageway)	Near to or in excess of 40mm investigatory level and/or likelihood of worsening in short term
<b>Extreme</b> In a town centre or a main footfall area. Cat 1a	<b>P1</b>	<b>Extreme</b> In line with vehicle path of very high traffic flow. Cat 2	<b>P1</b>
<b>Major</b> Adjacent to main areas of footfall in vulnerable areas. Cats 1 & 2	<b>P2</b>	<b>Major</b> Adjacent to vehicle path in area of very high traffic flow. Cat 3(a) and 3(b)	<b>P2</b>
<b>Moderate</b> Most other footway areas. Cat 3	<b>P3-5</b>	<b>Moderate</b> Most other carriageway areas. Cat 4(a)	<b>P3-5</b>
<b>Minor</b> Negligible risk of interaction, particularly obscure or unused locations. Cat 4 & 5	<b>P3-5</b>	<b>Minor</b> Negligible risk of interaction, particularly obscure or unused locations. Cat 4(b) & 5	<b>P3-5</b>

## 4.2 Investigatory Levels

### Items for inspection, defect type and investigatory levels

Item	Defect type	Investigatory level – Guidance Only
Carriageway	<ul style="list-style-type: none"> <li>Pothole / spalling</li> <li>Ridge or rutting</li> <li>Gap or crack that could create a hazard to cyclists</li> <li>Sunken cover</li> <li>Cover with gap/crack</li> <li>Depression (typically identified as a sunken bowl type defect with no defined edge)</li> <li>Missing road studs that create a hazard</li> </ul>	<ul style="list-style-type: none"> <li>40mm depth (approx. 150mm across in any horizontal direction)</li> <li>40mm height difference to surrounding surface</li> <li>40mm depth (&gt;25mm in width)</li> <li>40mm depth (&gt;20mm width)</li> <li>40mm depth (&gt;20mm width)</li> <li>Whether a depression is an actionable defect will be determined on a case by case basis by the inspector</li> <li>Item identified</li> </ul>
Footway	<ul style="list-style-type: none"> <li>Change in level/pothole/sunken cover</li> <li>Rocking slab/block</li> <li>Missing item such as an absent dropped kerb causing access difficulty</li> <li>Missing tactile paving</li> <li>Depression (typically identified as a sunken bowl type defect with no defined edge)</li> </ul>	<ul style="list-style-type: none"> <li>25mm depth (75mm across in any horizontal direction)</li> <li>Identifiable rocking creating a change in level.</li> <li>Item identified</li> <li>Item identified</li> <li>Whether a depression is an actionable defect will be determined on a case by case basis by the inspector</li> </ul>
Kerbs	<ul style="list-style-type: none"> <li>A kerb that is misaligned/chipped/cracked and protruding into the carriageway</li> <li>Loose/rocking/missing</li> <li>On the footway a crack, vertical deviation or gap creating a change in level including at designated crossing points and cycleways</li> </ul>	<ul style="list-style-type: none"> <li>50mm</li> <li>Item identified</li> <li>25mm</li> </ul>
Verge erosion	<ul style="list-style-type: none"> <li>Adjacent to carriageway edge</li> <li>Adjacent to footway edge</li> </ul>	<ul style="list-style-type: none"> <li>Depth 150mm</li> <li>Depth 100mm</li> </ul>
Third party iron work	<ul style="list-style-type: none"> <li>Gaps within framework (other than designed by the manufacturer) creating a hazard</li> <li>Level differences</li> <li>Rocking covers creating a hazard</li> <li>Cracked or broken covers</li> <li>Worn or polished covers</li> <li>Missing covers</li> </ul>	<ul style="list-style-type: none"> <li>40mm carriageway/25mm footway</li> </ul> <p>Item identified – notify relevant third party see procedure in HMMP Appendix C. p17.</p>
RBWM iron work	<ul style="list-style-type: none"> <li>Gaps within framework (other than designed by the manufacturer)</li> <li>Level differences</li> <li>Rocking covers creating a hazard</li> <li>Cracked or broken covers</li> <li>Worn or polished covers</li> <li>Missing covers</li> </ul>	<ul style="list-style-type: none"> <li>40mm carriageway/25mm footway</li> </ul> <p>Item identified in each case</p>
Flooding	<ul style="list-style-type: none"> <li>Standing water two hours after cessation of rainfall 1.5m from edge of carriageway</li> <li>Substantial running water across footway and/or carriageway</li> </ul>	Item identified in each case

	<ul style="list-style-type: none"> <li>Property inundation as a result of defective highway drainage</li> <li>Blockage of waterway resulting in flooding of adjacent properties/ground</li> <li>Flooded subways following pump failure/drain blockages</li> </ul>	
Highway drainage	<ul style="list-style-type: none"> <li>Substantial standing water adjacent to edge of carriageway</li> <li>Blocked gully (silted above outlet)</li> <li>Collapsed/blocked/settled items or systems</li> <li>Gully covers – sunken, rocking, cracked, broken, missing</li> <li>Soakaway covers – sunken, damaged, loose, rocking, missing</li> </ul>	Item identified in each case
Road markings	Faded or worn markings	50% loss of effective markings
Non-illuminated signs/bollards	<ul style="list-style-type: none"> <li>Damaged/misaligned item causing a hazard (including sign fixings)</li> <li>Missing item causing a hazard (including sign fixings)</li> <li>Item missing</li> <li>Item obscured/dirty/faded</li> </ul>	Item identified in each case
Illuminated signs/bollards, traffic signals and street lighting columns	<ul style="list-style-type: none"> <li>Missing covers or panels</li> <li>Exposed wiring</li> <li>Damaged / defective / displaced or missing</li> </ul>	Item identified in each case
Safety fencing and barriers	<ul style="list-style-type: none"> <li>Item damaged or misaligned causing a hazard</li> <li>Unstable item or section</li> </ul>	Item identified in each case
Trees, hedges and shrubs	<ul style="list-style-type: none"> <li>Encroachment or visibility obstructions and/or any obvious damage, ill health, stability or change in level. hazards</li> <li>Overhanging tree/hedge/shrub leading to loss of height clearance over carriageway, footway or cycleway</li> </ul>	<ul style="list-style-type: none"> <li>&lt;5.3m over carriageways</li> <li>&lt;2.4m over footways and cycleways</li> </ul>
Vandalism	Offensive graffiti	Item identified
Highway general	<ul style="list-style-type: none"> <li>Oil/debris/mud/stones and gravel likely to cause a hazard</li> <li>Street furniture missing or damaged likely to cause a hazard</li> <li>Illegal signs</li> <li>Obstructions in the highway</li> <li>Obstructed sight lines</li> <li>Illegal ramps in carriageway to aid vehicular movement</li> <li>Footway damage caused by vehicular access where no vehicle crossing</li> <li>Scaffolding likely to cause a hazard</li> <li>Skips likely to cause a hazard</li> <li>Unprotected building materials on the highway</li> <li>Abandoned vehicles likely to cause a hazard</li> <li>Weeds and moss</li> </ul>	Item identified in each case (refer to appropriate contractor as necessary)