



Havering
LONDON BOROUGH

London Borough of Havering

Highways Maintenance Plan

December 2024

1. Document Control

1.1 Sign Off and Ownership details

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1.2 Revision history

Version	Change	Date	Dissemination
V0.1			
V0.2			

1.3 Equality & Health Impact Assessment Record

1	Title of activity	<i>Highways Maintenance Plan</i>		
2	Type of activity	<i>Policy</i>		
3	Scope of activity	<i>Implementation of an updated policy for managing the reactive and planned maintenance highways programmes. The intended outcome is the adoption and implementation of a new policy which will provide the conditions for managing both reactive and planned highway maintenance activities on the highway network</i>		
4a	Are you changing, introducing a new, or removing a service, policy, strategy or function?	Yes	If the answer to <u>any</u> of these questions is 'YES', please continue to question 5.	If the answer to <u>all</u> of the questions (4a, 4b & 4c) is 'NO', please go to question 6.
4b	Does this activity have the potential to impact (either positively or negatively) upon people (9 protected characteristics)?	Yes		
4c	Does the activity have the potential to impact (either positively or negatively) upon any factors which determine people's health and wellbeing?	Yes		
5	If you answered YES:	Please complete the EqHIA in Section 2 of this document. Please see Appendix 1 for Guidance.		
6	If you answered NO: (Please provide a clear and robust explanation on why your activity does not require an EqHIA. This is essential in case the activity is challenged under the Equality Act 2010.) <i>Please keep this checklist for your audit trail.</i>			

Date	Completed by	Review date
Nov 2024	James O'Regan	TBC

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2. Introduction

2.1 Purpose

2.1.1 The purpose of the Highways Maintenance Plan (HMP) is to document the Council's approach to highway maintenance.

2.2 Scope

2.2.1 This document is a suite of documents that sets out highway maintenance policy and delivery arrangements. The suite is as follows:

- a. Highways Maintenance Plan (this document)
- b. Highways Structures Plan
- c. Street Lighting Plan
- d. Winter Service and Operational Plan
- e. Flood Risk Management and Highways Drainage Plan

2.3 Aims, Objectives and Outcomes

2.3.1 It is intended that this document will be used as a reference manual for internal purposes and as a document that is accessible and useful for external parties including Havering's residents and businesses. This is an operational document which focuses on the operational practices required to maintain Havering's Highway assets and the strategies and policies for discharging these.

2.3.2 The highway consists of all of the streets in the borough that are classified as 'highway maintainable at public expense' within the meaning of the Highways Act 1980. This comprises several assets such as carriageways, footways, structures, drainage apparatus, street lighting and street furniture. This document focuses mainly on carriageway and footway assets but reference is made to all other asset types and how these impact upon inspection and maintenance regimes.

2.4 Legal Implications

Highways Act, 1980

2.4.1 The London Borough of Havering, in its capacity as the Highway Authority, has a statutory duty to maintain the public highway (Highways Act 1980, S41). In this respect, part of the duty to maintain includes inspection.

2.4.2 In an action against a Highway Authority in respect to injury and damage resulting from their failure to maintain the highway maintainable at public expense, it is a defence to prove that the authority had taken such care, as in all circumstances was reasonably required, to secure that part of the highway to which the action relates was not dangerous for traffic (Highways Act 1980, S58).

2.4.3 The systematic inspection of the highway for defects likely to create a danger or serious inconvenience to the public is therefore required to ensure that the London Borough of Havering's duty to maintain is fulfilled. Havering's Highway Maintenance Plan has been derived using the Code of Practice for Well Managed Highway Infrastructure, October 2016.

3. Strategy, Hierarchy and Inspection Regime

3.1 Highway Infrastructure Maintenance and Management Strategy

3.1.1 The Highway Maintenance Plan is developed with the aims of:

- Maintaining the highway network for the safe and convenient movement of people and goods.
- Delivering the statutory duties of the Council.
- Undertaking maintenance in an effective, efficient and economic manner.

- Meeting the Council's corporate vision and priorities, including relevant policies and strategies such as the Climate Change Action Plan, Healthy Weight Strategy, responding to the climate emergency and the Air Quality Action Plan.
- Being responsive to the needs of users and the community.
- Contributing to effective highway asset management and maintaining the asset value.
- Supporting and adding value to local transport objectives.

3.1.2 To achieve this, the Council aims to deliver highway maintenance in the way described by this Plan and in a systematic and logical way that has developed over time in accordance with the principles of best value and continuous improvement. The above principles are incorporated into the maintenance regime with the four core objectives of:

Network Safety	Complying with statutory obligations and meeting users' needs for safety.
Customer Service	User experience / satisfaction Good communication and information sharing Clearly defined levels of service
Network Serviceability	Ensuring availability and integrity Maintaining reliability and resilience Managing condition
Network Sustainability	Minimising cost over time Maximising value to the community Maximising environmental contribution.

3.1.3 These core objectives provide the basis in establishing the outcomes with which both performance and continuous improvement are measured. The component elements of the strategy are:

- A detailed inventory of all relevant components of the asset.
- A defined hierarchy for all elements of the network.
- A framework of policies and objectives.

3.1.4 To ensure the strategy is effective, these key elements are supplemented by the following:

- A comprehensive management system for inspecting, recording, analysing, prioritising and programming maintenance works so as to optimise their asset management contribution.
- A risk management approach clearly identifying and evaluating the risks and consequences of decisions and measures to mitigate them.
- Arrangements to finance, procure and deliver maintenance works in accordance with the principles of sustainability and best value.
- Arrangements to monitor, review and update as necessary, each component of the strategy and the performance of the strategy as a whole in delivering the core objectives.

3.1.5 Co-ordination between work areas is important in designing for maintenance, and all improvement proposals should ensure that future maintenance needs are fully considered at the design stage in order to reach an effective outcome. In this regard, the following criteria are considered when planning highway work:

- What is the estimated design life?
- Is this design life compatible with the adjacent infrastructure?
- Are the design and materials suitable for the predicted traffic use?
- Can the materials be readily replaced throughout the design life?
- Can the materials be satisfactorily re-laid after utility works?
- Are the materials liable to fading or discolouration?
- Can the surfaces be cleaned?
- Can the infrastructure be easily accessed for maintenance purposes?

3.1.6 The Highways Maintenance Plan initially depends on the way the information about the asset condition has been obtained. Information about defective assets supplied by members of the public or council officers/members is generally inspected and actioned via the reactive maintenance channel to deliver a rapid response. In a similar way, the majority of the defects identified through the highway safety and serviceability inspection regime are actioned via reactive maintenance to address safety issues in a timely manner. Reactive maintenance is the main route through which the Council maintains the highway network and ensures its statutory duty to maintain the highway under the Highways Act is delivered.

3.1.7 Planned maintenance is generally decided following analysis of condition survey data. In some circumstances, planned maintenance may be triggered through customer/member queries or via the safety inspection regime should the defect in question be of a scale that is not appropriate for a reactive maintenance response, such as a large area of carriageway breaking up.

3.2 Network Inventory

3.2.1 Various enactments, regulations and codes of practice including the Highways Act 1980 and the New Roads and Street Works Act, 1991 (NRSWA) require a basic highway network hierarchy to be established and inventory information to be collected by all highway authorities. Basic highway hierarchies are essential in order to allocate funds for the various maintenance activities, to calculate unit costs and to submit requisite information to Government each year. There is a requirement under the NRSWA to maintain information on traffic sensitive streets, structures of special engineering difficulty and reinstatement categories, and for the establishment of maintenance hierarchies under the Code.

3.2.2 An inventory is the collection and recording of the highway asset in terms of the number and locations of the items to be maintained. This aim is to map exact location and type of asset for the main highway asset types and each asset owner is responsible for updating the information that falls within their section (i.e. if they add, remove or change the location of an asset – such as highway structure, street light, street tree etc). Currently the Council have the following assets to maintain:

- A highway network comprising approximately 713km of carriageway and 1,040km of footway.
- 150 Highway Structures / Bridges.
- Approximately 25,000 gullies.
- Approximately 18,000 streetlights.

3.3 Network Hierarchy and Inspection Regime

3.3.1 The network hierarchy is the classification of the constituent parts of the network, for maintenance purposes, on the basis of the volume and composition of traffic using it. The hierarchy takes account of risk assessment and the role of the particular section of the carriageway, footway or cycle route in the network. It is important to distinguish that these hierarchies relate solely to highway maintenance and not for any other purpose meaning they may differ to hierarchies which have been developed for other purposes. The aim of the road hierarchy is to:

- Allow programmes of inspections to be set to enable statutory duties to be fulfilled.
- Allocate resources according to the importance of the road within the network.
- Set policies and standards according to the nature of the road within the network.

3.3.2 Recommendation 12 of the Code recommends that “A network hierarchy, or a series of related hierarchies, should be defined which include all elements of the highway network, including carriageways, footways, cycle routes, structures, lighting and rights of way. The hierarchy should take into account current and expected use, resilience, and local economic and social factors such as industry, schools, hospitals and similar, as well as the desirability of continuity and of a consistent approach for walking and cycling.” This has been used as the basis for developing Havering’s Hierarchy. Insofar as highway maintenance purposes are concerned, the network hierarchy should take account of particular circumstances which, because of their nature and importance, could result in increased risk of damage or injury to highway users. The special criteria that influence the hierarchy category include circumstances relating to special usage or vulnerable users, such as:

- Character and volume of traffic.
- Current usage and proposed usage.
- Routes to important local facilities and to the strategic network.
- Designation as a traffic sensitive route.
- Accident and other risk assessment.
- Potential for use as a diversion route.
- Special characteristic of certain assets, e.g. historic structures.
- Access to schools, hospitals and medical centres.
- Contribution to the quality of public space and street scene.
- Vulnerable users or people with special needs.
- Ceremonial routes and special events.

3.3.3 Taking account of the Code hierarchies, the London Road hierarchy, the work undertaken by LoTAG and special criteria appertaining to the borough, the network hierarchy for highway maintenance purposes within Havering are shown in the following tables.

Category*	Type of Road General Description*	Further Description*	Havering Definition and Interpretation
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M. Motorway	Limited access - Motorway regulations apply	Routes for fast moving long distance traffic. Fully grade separated and restrictions on use.	The Council is not responsible for any motorways
S. Strategic Route	Trunk and some Principal 'A' class 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.	In the borough these are classed as 'A' roads that fall under the Council's ownership – ie all A roads except the A12 and A127.
1. 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.	These roads are typically the Borough's Principal Road Network. They act as the main routes the Council is responsible for and connect local centres to the Transport for London Road Network (Red Route). These roads have a high number of bus services, will most likely form part of the resilience network, connect transport hubs and go through town centres and major shopping areas.
2. Secondary Distributor	B and C class roads and some unclassified urban routes carrying bus, HGV and local traffic with frontage access and frequent junctions.	In residential and other built up areas these roads have 20 or 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. In rural areas these roads link the larger villages, bus routes and HGV generators to the Strategic and Main Distributor Network.	These roads are typically the Council's classified B and C roads as well as some of the busier unclassified roads. They connect local areas to Strategic Routes or Main Distributor roads. They may be industrial areas with a higher volume of industrial traffic and have frequent bus services. These roads may also have local shopping areas, larger schools, other busy community type centres and special event areas.
3a Link Road	Roads linking between the Main and Secondary Distributor Network with frontage access and frequent junctions	In urban areas these are residential or industrial interconnecting roads with 20 or 30 mph speed limits, random pedestrian movements and uncontrolled parking. In rural areas these roads link the smaller villages to the	These are quiet mainly unclassified roads that serve as connecting roads to one of the above roads.

		distributor roads. They are of varying width and not always capable of carrying two-way traffic.	
3b Local Access	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.	These are the majority of the council's unclassified residential roads. These roads may have a low number of bus services, small areas of local shops and individual community centres.
3c. Minor Road	Little used roads serving very limited numbers of properties.	Locally defined roads.	For the purposes of this Policy and Plan, Minor Road is classified as a Local Access Road.

Table 1 – Carriageway Hierarchy * - The descriptions provided are as per, and adopted from, 'Well- Managed Highway Infrastructure: A Code of Practice', (2016)

Category*	Category of Footway Description*	Havering Definition and Interpretation
1a.Prestige Walking Zones	Very busy areas of towns and cities with high quality public space and street-scene contribution.	These are the main town centre areas with very high public amenity including busy pedestrianised shopping areas.
1b. Primary Walking Routes	Busy urban shopping and business areas and main pedestrian routes.	These are the main shopping centres, areas and approaches to transport hubs and centres that draw very large numbers of pedestrians. These routes also connect centres where high numbers of people access on foot. This would include those streets with larger schools and universities.
2.Secondary Walking Routes	Medium usage routes through local areas feeding into primary routes, local shopping centres etc.	These routes are those that link residential areas to the Primary Walking Routes and Prestige Walking Zones, acting as a feeder route. There may also be schools, community centres and other establishments that draw larger levels of pedestrians than a typical residential street.
3a. Link Footways	Linking local access footways through urban areas and busy rural footways.	These are predominantly the Council's residential streets. These streets might also have smaller schools and individual community centres.
3b. Local Access Footways	Footways associated with low usage, short estate	As Link Footway and also includes adopted highway (pedestrian routes) across open space, pedestrian cut-

	roads to the main routes and cul-de-sacs.	trough's (ginnels and alleyways) and those remote from a carriageway.
3c. Minor Footways	Little used rural footways serving very limited numbers of properties.	The Council does not have any Minor Footways.

Table 2 – Footway Hierarchy * - The descriptions provided are as per, and adopted from, 'Well- Managed Highway Infrastructure: A Code of Practice', (2016)

Category*	Category of Cycle Route Description*	Having Definition and Interpretation
1. Cycle Lane	Cycle lane forming part of the carriageway, commonly a strip adjacent to the nearside kerb. Cycle gaps at road closure point (no entry to traffic, but allowing cycle access).	These are cycle lanes (mandatory and advisory) generally on the carriageway and separated by road markings. In some cases physical separation may be provided in parts.
2. Cycle track	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.	This is a recognised signed cycle route (or section of route) that does not share space with the carriageway.
3. Cycle Provision	Cycle provision on carriageway, other than a marked cycle lane or marked cycle provision, where cycle flows are significant.	This is a well-used signed cycle route or a route where known high volumes of cyclist commonly use but where there is no specific or dedicated cycling infrastructure (other than route signage). Cycle Provision is generally on carriageway.
4. Cycle trails, leisure routes through open spaces.	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.	The Council does not identify these separately and these fall within the above categories.

Table 3 – Cycle Route Hierarchy * - The descriptions provided are as per, and adopted from, 'Well- Managed Highway Infrastructure: A Code of Practice', (2016)

3.3.4 Accordingly, and in line with the Code of Practice, the following inspection frequency is assigned to each highway hierarchy classification:

Feature	Category	Frequency
Roads	Strategic Route	1 month

	Main Distributor	1 month
	Secondary Distributor	1 month
	Link Road	3 months
	Local Access Road	1 year
Footways	Prestige Area	1 month
	Primary Walking Route	1 month
	Secondary Walking Route	3 months
	Link Footway	6 months
	Local Access Footway	1 year
Cycle Routes	Cycle Lane	As for Carriageways
	Cycle Track	As for Footways
	Cycle Provision	As for Carriageways

Table 4 – Recommended Frequency of Inspections

3.3.5 Every effort should be made to carry out routine inspections by the relevant due dates, however it is understood that certain circumstances may make this challenging such as staff absences, weather conditions and other required staff duties. The following variances to inspection dates are therefore considered acceptable:

Inspection Frequency	Acceptable Slippage
Monthly	5 days
3 Monthly	10 days
6 Monthly	15 days
Annually	30 days

Table 5 – Accepted Slippage to Inspection Frequency

3.3.6 Reactive inspections, by their nature, will be carried out on an ad hoc basis. On receipt of a report which requires site investigation, the reactive inspection will be undertaken by the Area Operations Officer as soon as practicable.

4. Risk Based Approach

4.1 Introduction and Strategy

4.1.1 One of the key fundamental principles of the Code is that Highway Authorities should adopt a risk-based approach to highway maintenance in accordance with local needs (including safety), priorities and affordability. The Code does not, therefore, outline prescriptive, minimum or default standards, but requires these to be developed and set locally. The Code expects this approach will enable authorities to establish and implement levels of service appropriate to their local circumstances. The

Council has adopted a risk-based approach and a risk management regime for all aspects of highway maintenance policy. This includes:

- Reviewing and setting levels of service
- Reviewing and designing safety and condition inspections
- Determining repair priorities and repair times
- Developing programmes of work

4.1.2 Recommendation 7 of the Code recommends a risk based approach should be adopted for all aspects of highway infrastructure maintenance, including setting levels of service, inspections, responses, resilience, priorities and programmes. This Risk Based Approach marks a fundamental difference to the 2005 Code of Practice. The Code recommends Risk Management in determining maintenance action rather than the old method of warning and intervention levels.

4.1.3 Adopting a risk based approach and risk management requires the identification and recording of significant risks and setting out a process to achieve the authority's strategic and operational objectives, evaluating their potential consequences and determining and implementing the most effective way of controlling and monitoring them. The Council interprets this to mean making the most of opportunities and making the right decisions in order to fulfil the required objectives through:

- Removing or controlling risks.
- Transferring risks.
- Living with risks.
- Setting affordable, achievable and realistic levels of service and local standards within available budgets.

4.1.4 By adopting this approach the Council hopes it will lead to better decision making and ensuring that best value is achieved. Recommendation 14 of the Code recommends that the management of current and future risks associated with assets should be embedded within the approach to asset management. Strategic, tactical and operational risks should be included as should appropriate mitigation measures.

4.1.5 Strategic risks are the highest level of risk and arise with strategic decision making. These consider how the authority balances conflicting priorities across all of its services to allocate the budgets for individual services. These risks are the most difficult to influence, but asset management plans supported by service documents such as this Highway Infrastructure Policy and Delivery Plan will be a structured means to begin influencing such decisions. The stages required to adopt best practice for a risk based approach to strategic risks are:

- Prepare plan.
- Identify clear organisational objectives.
- Prioritise risks to achieve the objectives.
- Establish clear policy and control strategies.
- Delegate responsibility for managing the process.
- Consult staff and obtain commitment.
- Monitor and review.

4.1.6 Tactical risks are the link between strategic and operational risks. The tactical level would allocate resources between competing priorities within the highway service such as road safety measures, traffic management, environmental improvements, highway maintenance, street lighting etc. and also within the highway maintenance service itself. For the highway maintenance service, this would consider how resources are allocated to balance the conflicting priorities of programmed maintenance (e.g. planned structural maintenance), routine maintenance (e.g. patching programmes, cleaning or landscaping maintenance), reactive maintenance (e.g. safety repairs), regulatory works and winter service. Although all of these activities have approved standards, the budgets allocated are not necessarily sufficient to fulfil requirements, and consequently some form of prioritisation needs to take place. Whilst prioritising these risks is beyond the scope of this document, the Highway Infrastructure Policy and Maintenance Plan is an integral element of the Council's approach to asset management planning, which is the vehicle to influence decision making on tactical risks.

4.1.7 Operational Risks: At an operational level, this is the decision making process of front line staff and how these decisions are influenced by complying with the procedures they are required to operate within. The way that staff estimate the risks associated with the routine tasks is a fundamental part of risk management and to do so competently and consistently with Havering's policy relies on suitable and sufficient knowledge of the actual task and how that task fits in to the consequences of a failure on their part.

4.1.8 The risks that must be assessed and actioned without delay are safety related defects because the Council has a statutory duty to affect such repairs (or removing the risk by other means), and failure to do so could lead to personal injury or property damage and claims for compensation. The decision making procedure for dealing with operational risks is detailed for each asset type in Volumes 1, 2, 3 and 4. The risk based approach for operational risks comprises the following stages:

- Identify risk.
- Analyse risk – using available data to provide information to assess the likelihood of risk arising with consequences or impact it may have.
- Profile risk – according to likelihood and severity.
- Prioritise action – based on the authority's appetite for or tolerance to the risk and the availability of limited resources.
- Determine action – should the risk be avoided, eliminated, reduced, transferred or accepted.
- Monitor and review.

4.2 Risk Assessments

4.2.1 The London Borough of Havering undertakes inspections that are predominantly designed to identify defects that are likely to cause injury, damage or danger to users of the highway network. The aim is to provide a consistent approach to assessing defects and the associated risk assessment as well as the required response times for repair. In order to provide this guidelines are established in this document, although highway inspectors need to use their expertise and experience whilst using a risk based approach. It is important therefore to note that the risk based approach is a guide and not a prescriptive methodology where inspectors are required to use their judgement based on the degree of risk identified. Therefore the degree of risk from a defect depends not merely on its depth, but also its surface area and location.

4.2.2 Basically a defect which would pose the most risk and impact should be made safe and repaired within a shorter timeframe. Typical defects and investigatory levels are provided below in Section 5.3. An investigatory level is the minimum level of a defect generally required for satisfying the need for safety. Where investigatory levels are not met and defects are not considered to pose a risk for safety then the defect could fall into the category of a serviceability repair, also described below.

4.2.3 When a highway defect is observed by the inspector, they are required to assess whether it meets the investigatory level and more broadly whether it poses a safety risk. In most cases, defects that are less than, or fail to meet, the investigatory level are not required for action / repair as a safety defect and are not recorded. However, where a serviceability repair is required then a works order will be raised. Where a defect has been assessed to meet the investigatory level, a risk assessment needs to be completed to determine what action, if any, is required. The outcome of the risk assessment will result in one of five actions:

Priority Response	Defect Description	Response Time
Priority 1	High risk / imminent safety hazard	2-hour
Priority 2	Urgent defects	24-hours
Priority 3	Non-urgent safety defects	28 days
Priority 4	Non-urgent serviceability repairs	28 days
Priority 5	Low-risk / consideration for planned maintenance programme	"Other" as agreed / instructed. Planned works

Table 6 – Response Times for Different Categories

4.2.4 As part of the assessment the inspector is responsible for assigning a defect response time. The Contractor is then required to take possession of the site and complete the repair or make the site temporarily safe or sign and guard the hazard, before completing the defect within the assigned time period for repair. This is assigned depending on the assessed risk of the defect. In order to provide consistency and context to this approach a standard risk matrix is used categorising response times by the likelihood of an accident occurring and the likely impact of this. The risk factor is therefore given a score by multiplying probability against impact.

			Probability			
			Unlikely	Possible	Probable	Very Likely
			1	2	3	4
Impact	Low	1	1	2	3	4
	Medium	2	2	4	6	8
	High	3	3	6	9	12
	Very High	4	4	8	12	16
Key			Low Risk	Medium Risk	High Risk	Very High Risk
Priority Response	Risk Factor		Response time	Defect Description		
Priority 1	16		2-hour	High risk / imminent safety hazard		
Priority 2	8 - 12		24 hours	Urgent safety defects		

Priority 3	3 - 6	28 days	Non-urgent safety defects
Priority 4	1 - 2	28 days	Non urgent serviceability repairs

Table 7 – Risk Factor Scores and Corresponding Defect Categories

5. Inspection Assessments and Recording

5.1 Conducting Highway Inspections

- 5.1.1 Highway inspections mainly comprise of walked visual surface assessments carried out on the footways and footpaths. The inspector will walk along one side of the street looking for defects of assets in the highway both along the footway, verge and the nearest part of the carriageway, before doing the same on the opposite side of the footway. Due to safety reasons (absence of footway or speed of road) some inspections will be required from a slow moving vehicle involving two people, an inspector and a driver.
- 5.1.2 Where defects are identified that are considered to be a safety issue to highway users these are recorded into hand held electronic devices using appropriate software. All relevant information about the defect including repair requirements and constraints should be recorded which are to be sent to the Council's Contractor or the Council's DSO. In addition to recording the defect, the defect should also be spray painted and photos highlighting information such as the defect's location along a street in relation to a property number, street lamp column number and position in the highway – ie footway, carriageway, verge, etc should be considered and input into the hand held device.
- 5.1.3 Where hazards and defects are identified these should be marked using white spray paint, photographed and recorded on the electronic hand held devices. Spray paint markings shall be done by highlighting the corners of a defective area to define the extent of the area being repaired. In areas where this cannot be achieved the start and finish of the defect should be marked on the kerb and where this further cannot be achieved this should be illustrated on the order. Once a particular beat is complete the inspectors will upload data as a soon as practicable using the desk top module.

5.2 Highway Serviceability Inspections and Non Recordable Defects

- 5.2.1 Highway serviceability inspections are conducted at the same time as the safety inspections. In addition to identifying safety defects the inspector may identify defects that do not meet the required investigatory levels and also do not pose an immediate risk of danger. They do however in the inspector's view have serviceability implications and are likely to deteriorate beyond investigatory levels before the next scheduled inspection. In these instances the inspector will use their judgement and discretion to raise reactive maintenance orders.
- 5.2.2 If no recordable / actionable defects are observed during an inspection the inspectors should note this as part of their survey.

5.3 Assets to be Inspected and Recorded

- 5.3.1 The highway network consists of a number of assets including footways, carriageways, drainage infrastructure, street lighting apparatus, street furniture and street trees. All fall under the Council's duty to maintain and hence it is the inspector's responsibility to assess them all. In line with the risk based approach set out in section 4, the following assets on the highway should be inspected against the appropriate investigatory levels:

Ref	Item	Defect	Location	Extent	Detail Information /
01			Whole Width	25mm	

02	Footway	Pothole / Trip / Rocking / Gap / Crack		40mm	Prestige / Primary Walking Zone
03			Pedestrian Flow Zone	25mm	All other footways
04				40mm	
05			Other areas	25mm	
06				40mm	
07	Carriageway	Pothole / Gap / Crack	Whole Width	40mm	Main Distributor Road
08				50mm	Local Access / Cul de sac
09				40mm	
10				50mm	
11	Pedestrian Crossing at Crossing Point	As per Footway	Pedestrian Flow Zone	25mm	Refer to footway risks
12	Cycleway	As per Footway Risk for Shared Use and Segregated	Any Footway		Refer to Footway Risks
13		As per Footway Risk for On Road Cycle Lanes	Any Carriageway	25mm	Refer to Carriageway Risks
14	Kerbing	As per Footway	Any Footway	-	Refer to Footway Risks
15	Flooding	Blocked Gully	Any Location	2 hours post Rainfall Event	Full Width Footway
16		Blocked Channel			¼ Width Road
17		Other Flooding			Puddle
18	Grass Verges	Rutting	Verge Area	100mm	Refer to Grounds Maintenance
19				30%	Any Road

20	Road Markings	Faded / Worn Markings	Footway and Carriageway	30%		
21	Signal Installations	Signal Failure Damaged / Defective Item	Any Location	Yes	Report to TfL for Action	
22	Iron Work	Trip Hazard Gap / Crack	Any Footway	25mm	As per Footway	
23			Any Carriageway	40mm	As per Carriageway	
24		Sunken / Protruding / Rocking / Broken / Cracked Cover	Any Footway	Yes	As per Footway	
25			Any Carriageway		As per Carriageway	
26		Missing Cover	Any Footway		As per Footway	
27			Any Carriageway		As per Carriageway	
28		Missing Cover <100mm	Any Footway		As per Footway	
29			Any Carriageway		As per Carriageway	
30	Street Furniture	Damaged / Misaligned / Defective / Missing Item	Any Carriageway		Yes	As per Carriageway
31			Any Footway			As per Footway
32	Non Illuminated Signs	Damaged / Misaligned / Defective / Missing Item	Any Carriageway	Yes	As per Carriageway	
33			Any Footway		As per Footway	
34	Lighting Illuminated Signs	Exposed Wiring	Any Location	Yes	Reported to Street Lighting Team	
35		Damaged / Misaligned / Defective Item				
36						
37						Missing Item

38	Street Lighting Bollards	Worn / Defaced / Dirty Item			
39	Subways / Housing Estates	Damaged Treads / Steps	Any Location	Yes	Any Location
40		Damaged / Defective Fixtures and Fittings			
41		Flooding			
42		Damaged / Defective Lighting Units			Reported to Street Lighting Team
43	Other	Anything else considered to be hazardous / dangerous	Any Location	Yes	Any Location
44		Anything else considered to be Low Risk / Planned Maintenance			
45		Non Urgent Serviceability Repairs			
46		Trees / Shrubs / Vegetation			

Table 8 – Assets to be Investigated and Investigatory Levels

5.4 Repeat Defects

5.4.1 In some instances inspectors may come across carriageway and footway defects that are re-occurring following an intervention, suggesting that the remedial reactive measure specified originally was either not completed to specification by the Contractor, not sufficient, or the specified treatment could not be completed. This would require further investigation to determine the cause of the problem and the suitable repair treatment. If required the defect may need to be reported to the Highways Maintenance Manager as well as referring any defective work back to the Contractor.

5.4.2 Where repeat defects occur there may be a need to change the specification to a more durable material. For example changing concrete paving slabs to an asphalt material would provide a material with a longer life span. Further information on material specification is provided below, in Section 6.

5.5 New Roads and Street Works Act (1991) Section 81 Defects

5.5.1 A 'Section 81' defect is a defect to a Statutory Utility Company's apparatus in the highway. As inspectors conduct inspections they might come across utility defects including polished or cracked covers, broken, missing or damaged covers and covers that have sunken / risen which are resulting in trip hazards. Inspectors are to log these issues on their hand held devices and also report any issues to the NRSWA team for the relevant utility company to then act upon.

5.5.2 If the defect is deemed to be so dangerous that leaving it would pose a serious risk and safety concern then the defect should be guarded and a temporary make safe solution implemented.

5.6 Beyond Reactive Repairs and Planned Maintenance Work

5.6.1 When inspectors encounter defects that require major maintenance and are deemed to be beyond reactive repairs they should raise these with the Highways Maintenance Manager to agree a suitable way forwards. Before raising large areas of work inspectors should also check with both the Highways Maintenance Manager and the Council's Resurfacing Engineer so as to limit duplication of work and provide best value for funds.

5.7 Road Works during Inspections and Inclement Weather

5.7.1 If Utilities or Planned Maintenance works are being carried out at the time of the inspection then inspectors should note this down on their hand held devices using the 'Unable to Inspect' category. This should be accompanied by a photo of the section stating the reason why in the description field.

5.7.2 During periods of inclement weather such as snow or rainfall it is not always possible to inspect the highway. When surfaces are wet spray paint does not always adhere as well. If conditions are such which makes it too difficult to inspect then this should be recorded on the hand held devices. Inspections should resume as soon as is reasonably practicable. During snow fall carriageway and footway gritting is also prioritised and inspectors should revert to assisting with these duties.

5.8 Private Forecourts

5.8.1 If an inspector comes across a defect on a private forecourt which does not form part of the public highway a risk based approach should be adopted. In the interest of public safety the Council has the power to seek improvements to repair a private forecourt but does not have the duty to do this. There is no obligation on the inspector and a range of factors should be considered.

5.8.2 Where the adopted highway is of sufficient width to adequately cater for the volume of pedestrian traffic typically there should be no need to intervene. However if the highway is narrow and the forecourt wide enough then a risk assessment approach as detailed in Section 4 should be applied. If the risk matrix suggests that there is a very high or high probability and impact of an accident then the inspector should raise a works order with the repair costs charged to the owner. If the impact and likelihood are low or medium then the inspector should write to the owner and ask that they repair the defect in a suitable timeframe.

5.9 Reactive (ad hoc) Inspections

5.9.1 Reactive (or ad hoc) inspections are triggered by customer enquiries – The general public, Councillors or other Council colleagues. These usually identify a particular issue at a location that needs investigating. Depending on the enquiry an investigation response time has to be adopted. Ad hoc enquiries should follow the same approach as regular inspections in terms of investigatory levels, the risk based approach and the way in which orders are subsequently raised. Response times are detailed in table 9. Officers will use their experience and discretion when reviewing reports to define urgency and subsequent priority levels.

Customer Enquiry Description	Investigation Response Time
Urgent reports, including those from the Police	Within 2 hours
Reports of defects that from the report could constitute safety concerns	Within 2 days
Reports of defects that from the report are unlikely to constitute safety concerns	Within 28 days
General customer enquiries relating more to the overall condition of the asset	During the next scheduled inspection

Table 9 – Response times by Customer Enquiry Types

5.10 Emergency ‘Out of Hours’ Call Outs

5.10.1 Between 5:30pm and 8:00am Monday to Friday including bank holidays and at weekends the Council’s ‘Out of Hours’ Officers will deal with urgent customer enquiries. These will likely be reported through the Council’s contact centre. The ‘Out of Hours’ Officer will use their discretion to determine urgency and if reports are deemed to be urgent will visit the site within 2 hours of report. If the report is deemed non urgent then this will be passed onto the appropriate highways inspector for action. Web based and emailed enquiries will be actioned by the inspector the next working day.

5.11 Supporting Information for Third Party Claims

5.11.1 Third Party Claims are managed by the Council’s Insurance Team. Inspectors are responsible for providing supporting information however to enable the team to assess the claims against the Council. The level of investigation and supporting information required will vary depending on the Claim. The following will usually be required:

a. A site visit and on site assessment relating to details of the claim.

b. A meeting with the claimant.

c. Information relating to beat frequency for that part of the highway, the last date of inspection and any repair history for the locus in question including any relevant reports, surveys, etc.

5.11.2 Third party claims will be investigated within 15 days of being received and findings shall be reported to the insurance team. If the case results in legal action and a court hearing then the inspector may be called to act as a witness and provide evidence along with other Officers as required.

5.12 Auditing, Inspection and Contractor Works

5.12.1 Regular auditing of works are required to ensure that there is:

a. Consistency in highway inspections undertaken and on the level of orders being raised.

b. Good workmanship and performance of the Highways Contractor.

5.12.2 In order to ensure that there is consistency in inspections the Highways Maintenance Manager will undertake regular review and audits to cross check uniformity in the type of defects being raised, the risk assessed approaches and the ways in which these are reported.

5.12.3 Work carried out by the Highways Contractor should also be audited on a monthly basis. A sample of 10% of the work should be carried out (not necessarily within each inspection area) over the previous month to ensure work has been carried out to appropriate standards. In addition all works that show a discrepancy between the estimated order value and the actual work carried out should be the subject of further investigation. All failed work should be reported to the Highways Contractor for remediation. In the instance of failure in terms of quality and frequency the Highways Maintenance Manager should seek to address with the Highways Contractor and withhold payment if required.

5.13 Dealing with On Site Public Complaints

5.13.1 Whilst conducting inspections, inspectors may be approached by members of the public enquiring or complaining about various issues on the network (or otherwise). Encounters should be treated both politely and diligently. Action should be taken where appropriate and inspectors should also encourage members of the public to report specific issues via the appropriate reporting channels.

5.14 Raising Works Orders

5.14.1 Works orders should be raised using the Council’s adopted software package by inspectors using their hand held devices, either at the time or as soon as is practicable after the defect requiring repair is identified. All of the necessary fields on the order within the software should be completed outlining the defect identified, the date, its location, the remedial work necessary and a schedule of rates with the respective quantities including the allocated budget code. A brief description of the defect should

also be entered giving as accurate a description as possible. It is also advisable to attach photographs showing the defects (marked if possible) and recorded on a map as this will all provide as much information to the Highway's Contractor relevant about the defect.

5.15 Guidance and Competency

5.15.1 As part of the development of Havering's risk based approach a range of guidance within this Highway Maintenance Plan is provided for highway inspectors, other officers and decision makers. In the case of operational risks each defect is assessed on its own merits by the highway officer (or other officer) and the Council's response to the defect is decided through risk assessment and not prescription. When making an assessment the highway officer is therefore required to consider:

- The defect – type, extent, size, condition etc.
- The probability the defect will cause an accident (this takes account of the location, the local environment, type and volume of typical users etc.)
- The most likely impact the defect will have in the event of an accident or extent of property damage

5.15.2 A Risk Register is provided for the main asset types. This is a basic guide setting out typical defects in the various locations across the network and offers guidance on typical impact and probability assessments. This is a starting point to support the highway officers risk assessment and is not intended to be prescriptive or to constrain the inspector's assessment. It is provided as a guide to help ensure a broadly consistent approach across the borough and to help prioritise resources across the network. Variation from the general guidance in the Risk Register is to be expected.

5.15.3 A Risk Matrix is provided setting out a guide to assess defect response times taking account of the probability of a defect causing an accident and the impact of such an accident. It is expected the highway officers will work closely in accordance with the risk register with little deviation. The risk register also sets the investigatory level of the typical size and type of defects when a risk assessment should be triggered. This replaces the old "intervention levels" and intervention levels do not feature in the Council's policy. Defects below or less than the investigatory levels are not normally considered as potential safety risks and no risk assessment is required. These defects are not actionable for safety reasons but may be repaired as part of good maintenance practice and for reasons such as:

- Prevent the defect becoming dangerous at some point in the near future.
- Prevent the defect growing and becoming more costly to repair.
- Prolong the life of an asset.
- To provide a level of service expected by members of residents.
- In response to a report of accident where local expectation is that the defect would be repaired, without the Council conceding that it's dangerous.

5.16 Training

5.16.1 At the core of an effective risk management regime is the need for staff to fully understand the Council's objectives, approach, process, and requirements. All staff associated with highway maintenance shall be adequately trained in the Council's policy and possess the required knowledge and experience to adequately fulfil their duties. They shall be competent in their role. Competency is achieved through:

- On the job training provided by more senior or knowledgeable staff.
- Internal training, team meetings, manager review and feedback.
- Experience of doing the job and discussing issues with colleagues.

- Specific workshops and tool box sessions.
- External training.
- Formal qualifications.

5.16.2 The Council considers that greater focus should be on inspector on the job training, guidance and support of colleagues and managers, than on formal qualifications. For example, an employee with a number of years' experience as a highway inspector, who has worked conscientiously, attended regular team meetings and toolbox training sessions, other relevant training and had regular feedback and dialogue with his / her manager will be competent to deliver the job regardless whether or not they possess a formal "highway inspector" qualification. However, formal qualifications are helpful and should be considered for individual staff where the need arises.

5.17 Service Delivery

5.17.1 The Council delivers a range of services for all assets and infrastructure throughout the borough's Highway network. The Council has traditional (client / contractor) term contract arrangements to deliver its highway works. The contract arrangements require the contractors to work in accordance with current standards and specifications, meet Council priorities (apprentices, local labour, plant emissions, etc.) and protect the Council's interests through performance guarantees and transfer of liability in the event of default.

5.17.2 The two main highway contracts in place are for the provision of highway civil engineering works (carriageways, footways and street furniture) and the provision of street lighting services. The Council has adopted an NEC4 Contract model for its highway contracts which requires a working partnership between client and contractor. There are monthly progress meetings between the parties and contractual procedures such as early warning notices and compensation events.

5.17.3 There are Key Performance Indicators (KPIs) which are collated each month in order to check both performance of contractor and client. The contracts are output based, where the contractor is only paid once the work is completed to a satisfactory standard. Works orders are produced and sent via an asset management system, which allows works orders to be sent and received by the contractor electronically. Once site works are completed, a sample inspection is carried out. This entails checking 10% of all works carried out in order to check quality and completion. Should defective work be identified within this 10% sample, further audits will be completed and the sample size will be increased for the following month.

6. Materials, Products and Treatments

6.1 General Requirements

6.1.1 Materials for use on the highway need to be:

- a. Durable and robust.
- b. Perform consistently under a range of temperatures from circa -15 degrees to +50 degrees Celsius.
- c. Be chemically resistant and inert.
- d. Stable to atmospheric and climatic factors.
- e. Be cost effective.
- f. Exhibit appropriate skid and slip resistant qualities.
- g. Be easy and quick to apply.
- h. Be easily maintainable.

i. Be readily available.

j. Be environmentally friendly and minimise carbon footprint where possible.

6.1.2 To ensure that the materials installed and that work is completed to a satisfactory standard and using proven construction methods the Council has broadly adopted the approach set out in 'The Specification for Highway Works' within the Design Manual for Roads and Bridges (DMRB).

6.2 Reactive Maintenance Requirements

6.2.1 For the most part reactive maintenance will be on a like for like basis. In some circumstances a variation to this approach is required however, such as in the following instances:

a. Vehicle crossovers – Due to historical repeat visits and repairs to flag paving on crossover areas the use of flag paving should be avoided where possible. Where localised repairs are required consideration should be given to a wider area of coverage that would prohibit the need for further repeat visits. Therefore other options such as asphalt, poured concrete or high loading modular or block paving should be considered in line with the aesthetic nature of the road and area. The cost of such materials should also be borne in mind when inspectors raise repair orders.

b. Exposed areas – Some parts of the highway are more exposed to vehicle overrun and damage than others. Whilst motorists are not permitted to overrun onto footways this cannot always be controlled or enforced. In reality this does happen and therefore damage can thus lead to verges and footways. Strategically placed street furniture can safeguard against this although if this is struck then the street furniture itself becomes a maintenance liability. It is for that reason that bollards should always be a last resort in solving indiscriminate overrunning and parking issues as well. In general terms the first port of call should be to strengthen both the surface and foundation courses as required, in a similar approach to that of the vehicle crossovers.

c. Coloured surfacing – The use of coloured surfacing on the highway has become increasingly prevalent over recent years as a means to signify road safety, cycling or public transport priorities. This has been encouraged through various best practice design guidance and its implementation funded by Transport for London (TfL). Whilst coloured surfacing should perform as well as non coloured surfaced materials, the actual materials are more expensive and can need specialist laying techniques or providers. There is therefore an implication on both costs and timescales for repairs.

Due to this the general approach will be that where maintenance is required the re-application of coloured surfaced materials should be avoided, except where there is a demonstrable need and requirement to retain the colour. This may be due to road safety implications and in such cases appropriate Council Officers will be consulted for advice.

7. Planned Footway and Carriageway Maintenance

7.1 General Information

7.1.1 The London Borough of Havering currently adopts an asset management based approach to managing and maintaining the highway network in relation to carriageway and footway resurfacing and reconstruction. This helps ensure the maximisation of value for money in relation to the life of the asset, reduced carbon footprint and the longer term planning of work to improve the overall asset condition. Additionally this also ensures consistency in decision making and a cost effective highway network.

7.1.2 Whilst safety repairs should not be constrained by budget the Council seeks to maximise the amount of planned maintenance work each year in the context of available funding. By doing so the average condition of the asset improves as a whole over time and deteriorates slower, which should give rise to less reactive work.

7.1.3 Structural carriageway maintenance, which involves renewing at least the binder and surface courses of the carriageway, is generally the most common planned maintenance activity. This upgrades the structural strength of the carriageway and prolongs the life of the asset. Planned works include:

a. Plane and inlay schemes – Renewing the running surface of the road to prevent further deterioration of the structural layers and provide a smooth road surface.

b. Patching – Where both surface and binder courses are replaced in limited and targeted areas of the carriageway.

c. Full Reconstruction – The removal of the entire carriageway construction down to at least the road base and potentially also including the sub base and capping layers. If the carriageway has deteriorated to this point further investigations may also be required to ensure suitable pavement design. Due to cost this method of treatment is a last resort.

7.1.4 Footway maintenance is carried out in a similar fashion. Generally footways comprise of different construction layers and so remedial treatments require investigation as to whether just the surface course can be removed or whether deeper structural reconstruction is required down to the footway base level. Generally slabs will be replaced with asphalt surfacing as part of the footway maintenance programmes as asphalt materials have a longer life span and reduce the need for future repairs – Both in terms of cost and frequency.

7.2 Condition Data and Development of Planned Maintenance Programme

7.2.1 Regular visual inspections using the United Kingdom Pavement Management System (UKPMS) method of investigation are undertaken on the principal road network and the results are used to assess the overall condition of the highway network for footways and carriageways. The results of which are then used to develop and prioritise roads in the most need of planned maintenance activity.

7.2.2 A number of approaches can be taken to then inform a priority list. This may be to simply rank the worst roads in order of visual inspections (Worst First) or other weighting priorities can be factored in. An important weighting factor may be to consider the use of the asset as a whole and its deterioration rate (which is known as Average Condition). Further weighting factors can also be applied for road classification, trip attractors or information pertaining to recorded defects or insurance claims.

7.2.3 At present the Council have invested significantly in a Highways Improvement Programme (HIP) using the above criteria against the policy of Average Condition of the asset. Carriageways and footways across the borough are listed onto a programme in priority order. The Council's Highway Maintenance Officers then work through the list applying the most appropriate approaches in relation to types of treatment (plane and inlay, patching, etc) and generally order works according to priority owing to other factors such as permit needs, road closure requirements and logistical issues.

7.2.4 Through this systematic approach the Council aims to maximise the asset life within available funding at optimum cost.