
Highway Safety Maintenance Policy

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2. Introduction

The Highway Safety Maintenance Policy defines the Council's approach to routine and reactive highway safety maintenance on the public highway.

Safety repairs are an inevitable part of the lifecycle of carriageway, footways and cycleways. These repairs are typically restricted to defects such as potholes, uneven slabs and uneven tarmac. They do not include the areas surrounding the defect showing signs of general deterioration or risk factors that may give rise to safety defects in future although this will be noted and recorded for future works programmes or for future safety inspections.

This Safety Maintenance Strategy sets out how the Council's approach to safety maintenance will, as far as possible, ensure the safety of highway users whilst recognising the unprecedented financial challenges faced by all Council services. It considers how the Council can balance its duty to keep its network as safe as possible for all users of the highway within available resources.

It details more specifically the risk management approach undertaken to redefine safety maintenance activities. This risk management approach aligns with the recommendations in the UK Code of Practice for 'Well-managed Highway Infrastructure.'

3. Overview

Brighton and Hove City Council's highway safety inspection regime, in accordance with the principles of risk management, has been developed to provide a practical and reasonable approach to the risks and potential consequences identified on the highway.

The Council has defined safety inspection standards based on this assessment of risk, utilising the best evidence available at the time to support these decisions.

At the core of Brighton and Hove City Council's highway safety inspection regime is the principle that key factors including road hierarchy, use, defect parameters and defect locations, determine the likelihood and consequences of coming in to contact with that defect.

4. Safety defects

Brighton & Hove City Council use the term 'safety defect' or 'defect' to describe a physical problem in the highway that could potentially be hazardous to users. A safety defect is usually an isolated problem that may require a small-scale repair. Highway Safety Inspections are designed to identify these safety defects and undertake repairs as necessary.

The overall condition of the public highway is considered at a strategic asset management level and addressed through planned maintenance programmes. Given the scale of challenges facing local authorities, it is not possible to carry out planned maintenance at the optimum treatment point for carriageways, footways and cycleways. Where insufficient budget prohibits the development of future works programmes to rectify deterioration of a street's condition, the statutory obligations



for network safety take preference, and the safety inspections are a vital part of meeting these obligations.

5. Safety inspections

The Council as a Highway Authority is placed under a duty to maintain its highways by Section 41 of the Highways Act 1980.

Case law has confirmed that the 'highway' refers to the surface or fabric of the highway (not including signs and road markings) and that 'maintain' means to repair.

A Highway Authority may have a defence against liability claims under Section 58 of the Highways Act if it can prove that it has taken reasonable care to ensure that the highway was not dangerous. *(See Appendix 1 for further details on legislative requirements).*

Safety inspections are the primary means to demonstrate that the authority has taken reasonable care to keep its network as safe as possible for users.

Safety inspections are planned cyclic inspections carried out to specific frequencies dependent upon the functional hierarchy (category) of each highway. Safety inspections are specifically conducted to pro-actively identify potential dangers.

However, Brighton and Hove City Council also undertake reactive safety inspections in response to reports or complaints regarding potential hazards on the highway.

6. Risk management principles for safety maintenance

The identification and assessment of risk is a central element of the risk management strategy.

For the local highway network this involves:

- Establishing a network hierarchy (priority) based on the likelihood of risk occurring – this is predominately linked to volume and type of users
- Establishing frequencies for cyclic inspections, setting out investigatory levels for defects and specifying repair times/types in accordance with the network hierarchy
- Undertaking assessment and action on site according to the agreed hierarchy and investigatory levels.

The Code of Practice for Well Managed Highways 2016 states that:

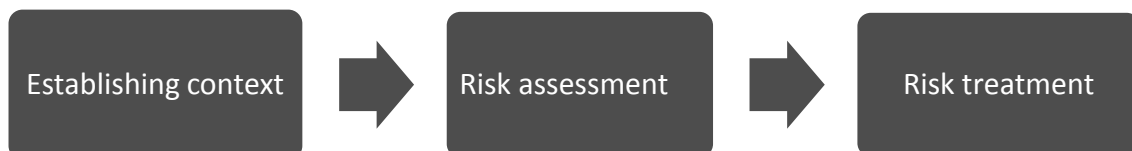
'There are no prescriptive or minimum standards in this Code but adoption of a risk-based approach, taking account of the advice in the Code, will enable authorities to establish and implement Principles of Risk Management Inspections.' (p.12)

Brighton and Hove City Council's highway safety inspection regime has been developed in accordance with these principles of risk management to ensure an evidence-based proportional approach to maintaining safety for highway users.

7. Safety Inspection review

7.1 Analysis

Brighton & Hove City Council has reviewed the Safety Maintenance regime for the public highway, using a risk-based approach to define the type, level and frequency of safety inspections and safety repairs.



Activities to incorporate the Code of Practice recommendations for safety inspections included:

- Utilising the framework in the Code based on the considerations listed - establishing the factors that will determine the criteria for categorising every carriageway, cycleway and footway on the city's public highway bearing in mind any locally unique conditions.
- Assessing each road (carriageway and footway, including cycleways) against the above criteria.
- Developing new areas of safety inspection frequency to match the criteria, using available staffing resource, and making any adjustments required depending on any increased workload.
- Route optimising the safety inspections and areas to reduce excessive travel and vehicle usage.
- Training the Highway Inspectors in risk assessment in order to make an informed decision on the likelihood of a repair being required and the appropriate response time.
- Undertaking revisions to the supporting systems such as the highway management database, schedules of Inspection, defect and complaint forms.

7.2 Risk matrix

The Code of Practice contains guidance to assist in determining local criteria for categorising the network into a priority hierarchy. This guidance includes:

- Recommendations for a network hierarchy (priority) based on traffic composition and volume, and social/economic importance
- Considerations regarding users, such as key infrastructure locations, pedestrian desire lines and important locations such as access to shops, hospitals, schools.

The probability of an incident occurring is quantified by assessing the likelihood of highway users encountering the defect or hazard. The level of harm depends on factors such as location and characteristics of the defect.

The following risk matrix demonstrates how Brighton & Hove City Council evaluates risk for its highway network:

Principles of Risk Assessment in Determining the Hierarchical Standing of a Road and Repair Response Times.					
Brighton and Hove city Council's inspection regime has been developed in accordance with the principles of risk assessment and provides a practical and reasonable approach to the risk and potential consequences identified. The identification and assessment of risk is the most important element of a risk management strategy and determines how frequently a road is inspected and priority response times.					
Assessment of Risk Probability					
The probability of an incident occurring is quantified by assessing the likelihood of highway users encountering the defect or hazard.					
Assessment of Risk Impact Rating					
An impact rating is quantified by assessing the extent of damage likely to be caused should the risk become an incident, and as such there is a clear link to the physical characteristics of the defect / hazard.					
The consequence should an incident occur has been assessed as follows:			The likelihood of coming in to contact with a defect has been assessed as follows		
High	Major/Serious Consequence	High Traffic Volumes	Likely		
Medium	Noticeable Consequence	Medium Traffic Volumes	Moderate		
Low	Minor Consequence	Low Traffic Volumes	Unlikely		
Insignificant	Insignificant	Very Low Traffic Volumes	Rare		
Risk Assessment Matrix					
LIKELY	4	4	8	12	16
MODERATE	3	3	6	9	12
UNLIKELY	2	2	4	6	8
RARE	1	1	2	3	4
	RISK MATRIX RATING	1	2	3	4
RISK IMPACT		INSIGNIFICANT	LOW	MEDIUM	HIGH

7.3 Research and evaluation

The following data was collated and analysed to provide a comprehensive understanding and evaluation of risk on Brighton & Hove's highway network, in order to determine the network hierarchy:

- Annual condition surveys of the carriageway and footway network
- Pedestrian and traffic counts
- Asset management strategy (data includes maintenance history, repairs, claims, complaints, accident rates)
- Bus routes: frequencies and numbers of buses
- Traffic sensitive streets
- Prestige areas of the city
- Resilient network (key highway infrastructure supporting the city's socio-economic functioning)

NHT satisfaction survey and corporate customer feedback reports were also considered.

7.4 Considerations

The safety inspection review also considered:

- The depth, surface area, or other extent of the defect;
- The location of the defect relative to access to shops, hospitals, schools;
- The location of the defect in relation to users such as in traffic lanes, wheel tracks or pedestrian desire lines;
- The level of use (functional hierarchy);
- The nature and extent of interaction with other defects.

In general, the greater the traffic flow, the higher the likelihood of a user encountering any defect. However, if the defect is positioned so that it not likely to be trafficked, that likelihood is reduced. For example, the degree of risk from a pothole depends upon not only on its depth but also its surface area and location relative to traffic.

8. Network Hierarchy (frequency of inspection)

Following this risk analysis and evaluation, a revised network hierarchy for the public highway has been developed. A highway may in some instances have varying frequencies of inspections in different locations along its length. In most cases this is due to the established variance in traffic use.

The network hierarchy is the primary identifier for likelihood of risk, and as such, determines frequency and repair times/types.

8.1 Carriageways

The Carriageway Hierarchy shown in Table 1 reflects the actual use of each road and its associated maintenance standards within the network. These are not necessarily reflected by the road's formal classification as an A, B or C road.

Table 1: Carriageway Hierarchy

Carriageway Category (Code of Practice)	BHCC Description	Code of Practice suggested inspection frequency	Inspection Frequency	Vehicle Counts	Inspection Includes	Target response time for Category 2 repair
2 Major urban and inter-primary links	Routes linking urban centres to the strategic network with limited frontage access. Parking is restricted at peak times and there are positive measures for pedestrian safety.	<i>Monthly Driven</i>	Monthly Driven	750 + HGV's 12-hour average. Example: London Road	Carriageway Only	14 days (streetworks permit required for permanent repairs)
3a Most classified B and C roads and unclassified bus route	Include all bus routes, have 20/30 mph speed limits and high/medium levels of pedestrian activity with some crossing facilities. On-street parking is generally unrestricted except for safety reasons.	<i>3 Monthly Driven</i>	3 Monthly Driven	250 + HGV's 12-hour average plus all public bus routes. Example: Ovingdean Road	Carriageway Only	14 days
4a Link roads with frequent junctions	Residential Link Roads	<i>6 Monthly as Adjacent Footway</i>	6 Monthly Walked	Less than 250 HGV's 12-hour average. Example: see footway hierarchy	Footway and Carriageway	28 days
4b Local access roads	Local Access Traffic	<i>12 Monthly as Adjacent Footway</i>	6 Monthly Walked	Very Few HGV's 12-hour average. Example: see footway hierarchy	Footway and Carriageway	56 days

8.2 Footways and cycleways

The footway and cycleway hierarchies in Table 2 are based on actual usage, and not necessarily by the formal road classification. Footway hierarchies have been determined independently of the carriageway hierarchy, as vehicular traffic may not use busier footfall areas such as the Lanes.

Table 2: Footway Hierarchy:

Footway Category (Code of Practice)	BHCC Description	Code of Practice suggested inspection frequency	BHCC Hierarchy and Inspection Frequency	Pedestrian Counts	Inspection Includes	Target response times for Category 2 repair
1a Prestige walking zone	Very busy areas of city with high public space and street scene contribution.	<i>Monthly - walked</i>	1 Monthly Walked Plus	30,000 + pedestrians 12-hour average. Example: Western Road	Footway and Carriageway	4 days
1 Primary walking route	Busy urban shopping and business areas and main pedestrian routes.	<i>Monthly - walked</i>	1 Monthly Walked	10,000 + pedestrians 12-hour average. Example: Queens Road	Footway and Carriageway	7 days
2 Secondary walking route	Medium usage routes through local areas feeding into primary routes, local shopping areas.	<i>3 Monthly – walked</i>	3 Monthly Walked	3000 + pedestrians 12-hour average. Example: Portland Road	Footway and Carriageway	14 days
3 Link footway	Linking local access footways through urban areas.	<i>6 Monthly – walked</i>	6 Monthly Walked	Fewer than 3000 + pedestrians 12-hour average. Example: Queens Park Road	Footway and Carriageway	28 days
4 Local access footway	Footways associated with low usage, short estate roads to link routes and cul-de-sacs.	<i>12 Monthly - walked</i>	6 Monthly Walked	Very Few Pedestrians 12-hour average. Example: Pinfold Close	Footway and Carriageway	56 days

Cycleways are inspected on the footway frequency where:

- The cycleway is part of shared space on the footway
- Visibility from a vehicle is obstructed e.g. cycleways segregated from the carriageway by a physical boundary such as kerbs, parking bays or builds outs

Cycleways are inspected on the carriageway frequency as part of the driven inspection where:

- they are visible from the carriageway e.g. not segregated by a physical boundary other than white lining.

9. Assets for highway safety inspection

9.1 Assets and defect types

The highway safety inspection regime relates to the public highway. Highway Safety inspections cover the following assets on the public highway which are assessed in accordance with the investigatory levels. The list below covers the main types of asset and likely types of defect but is not exhaustive:

Asset	Likely defect types for investigation
Carriageways	
Bituminous roads	Significant difference in level, potholes, significant subsidence
Concrete roads	Significant difference in level (cracking, missing)
Concrete pavements	Significant difference in level (cracking, missing)
Composite roads (overlaid concrete)	Significant difference in level (concrete failure underneath)
Modular blockwork	Missing, damaged, uneven, rocking
Footways	
Modular paving such as brickwork	Missing, damaged, uneven, rocking
Paving slabs	Missing, damaged, uneven, rocking
Bituminous pavements	Significant difference in level, potholes, significant subsidence
Concrete pavements	Significant difference in level (cracking, missing)
Kerbs	Displaced, missing, significant difference in level
Steps	Missing or damaged steps; damaged riser
Street Furniture	
Bollards	Missing, rocking/insecure
Guardrails and handrails	Missing, rocking/insecure, sharp edges protruding
Street tree gratings/covers and edging	Significant difference in level
Street tree root network	Significant difference in level (see 'Exceptions')
Gullies, covers and other ironwork	Missing, damaged (may be utility or privately owned)
Ironwork in verges	Displaced, damaged
Highway walls 0.8 metres or less	Missing components, leaning/insecure

9.2 Defect categories

Safety Inspections identify those defects likely to create a danger or serious inconvenience to users of the network or the wider community.

Defects will include those that will require urgent attention (within 24 hours) as well as those where the locations and sizes are such that longer periods of response would be acceptable.

Defects are categorised as either Category 1, Category 2 or Category 3 in terms of an appropriate priority response.

Category 1 defects require more prompt attention because they represent an immediate or an imminent hazard. Depending on the situation, interim action may be required (such as temporary repair or temporary signing /guarding).

Category 2 defects require attention but do not represent an immediate or imminent hazard. These defects may have safety implications although of a far lesser significance than Category 1 defects.

Minor defects that are not currently a safety hazard, occurring over a large extent of the public highway, are classified as **Category 3** defects. These may be repaired as part of a future maintenance scheme or their condition reviewed at the next scheduled inspection.

9.3 Repair or replacement

Repair or replacement will be like-for-like unless circumstances require a more durable or flexible material, or if there is insufficient budget in which case safety considerations will override aesthetic considerations.

9.4 Special considerations

a) Vehicle over-run

Where persistent damage is occurring on paved footways due to vehicles parking or overrunning, the flags will be removed and replaced with a bituminous layer once investigatory levels have been exceeded.

b) Street trees

These are the trees planted in pavements, the highway or roadside verges along the city's streets. They help to filter traffic pollution, provide habitats for bird and insect wildlife, help with drainage of surface water, provide shade and improve the visual amenity of the street scene.

Brighton & Hove has a unique population of Elm trees. These were originally planted in large numbers by the Victorians and Edwardians due to their suitability to maritime conditions, their resistance to salt winds and tolerance of the thin chalk soil typical of much of this area. Brighton & Hove's Elms were granted full 'National Collection' status in 1998 by the National Council for the Conservation of Parks & Gardens.

However, due to the thin top soil and chalk base, a street tree's root network will often grow close to the surface to obtain as much moisture as possible. This means that areas around street trees may have uneven surfaces.

Brighton & Hove City Council seek to preserve street trees wherever possible and therefore take a pragmatic approach to maintenance around street trees. (*See also Tree policy*). Investigatory and repair levels cannot be applied to the same degree around a street tree root network.

This approach is supported by the Code of Practice:

“Extensive root growth from larger trees can cause significant damage to the surface of footways, particularly in urban areas... Although ensuring the safety of footways for users will be a priority, in some cases the presence of roadside trees may complicate the provision of footway surface regularity. The radical treatment or complete tree removal necessary to ensure surface regularity may not be possible or desirable and reduced levels of surface regularity may be a more acceptable outcome.” (p.95 and p.83)

Where paving slabs are pushed up due to tree roots and exceed investigatory levels, they will be replaced with a more flexible material such as a bituminous layer to minimise trip hazards. The material and kerbing will be laid or repaired to minimise hazards to highway users but is unlikely to present an even surface.

Crowning due to tree roots pushing upwards on flexible footways will be identified for repair if the up-stand above the level of the footway exceeds 50mm to reduce the likelihood of the tree being damaged by frequent root trimming.

c) Verges

Verges are not provided as areas for walking, driving or cycling. The function of a verge in urban areas is to assist with surface water drainage, to provide segregation between vehicular and pedestrian traffic, and to enhance the visual amenity of an area.

There is no requirement to maintain a verge to the same safety standard as that of a footway, carriageway or cycleway.

Verges damaged by parking or vehicle overrun will be identified for protection only if vehicle overrun causes a significant portion of the adjacent carriageway or footway to be continuously slippery from debris or undermines the structure of the adjacent carriageway or footway (see also Verge policy).

d) Kerbing

The function of a kerb is to provide a retaining structure for the carriageway and footway/verge and to channel surface water into highway drainage. Kerbs are therefore designed to give structural support to the trafficked surfaces of the highway rather than for walking or driving upon.

Kerbing that is raised or dislodged such as to constitute a major hazard will be repaired or replaced. However, investigatory and repair levels cannot be applied to the same degree around a street tree root network.

Kerbing that has minimal upstand from the carriageway or has small cracks, chips or flaws will not be repaired or replaced.



e) Builders' damage

Any safety defects will be made safe within the specified timescales for defect categories. A report will be sent to the Permit Admin team to monitor ongoing damage.

10. Investigatory Levels

Any item with a defect level that corresponds to or exceeds the investigatory levels set by Brighton & Hove City Council is to be assessed for likely risk and any appropriate repair action required.

An investigatory level is not a fixed measurement which automatically requires that repair action is taken. Action is determined by a dynamic risk assessment on site, in accordance with BHCC's Safety Inspection Guidance.

It is not the case, for example, that anything which is greater than 20mm in a footway/cycleway or 50mm in a carriageway is an imminent hazard to users. Other factors need to be considered such as location of the defect. The purpose of these investigatory levels is to trigger the dynamic risk assessment which may or may not result in a repair depending on the level of risk determined on site.

Various aspects of defect deficiency have been assessed to give a well-rounded analysis of the risks likely to be encountered and to determine investigatory levels. Therefore, BHCC's investigatory levels are based on the size, nature and depth of the defect, and on the location of the defect relative to the positioning of users (e.g. traffic lanes, wheel tracks, pedestrian crossings).



11. Other council assets

11.1 Highway assets

Street lighting, structures, vehicle safety barriers and skid resistance levels have separate inspection regimes and are not covered under this Safety Maintenance Strategy. Street trees are pruned and maintained by the council's Cityparks section. The Parking team maintains signs, lines and street name plates.

11.2 Other council assets

There is a duty of care to users on land or premises owned and managed by the council which is determined and actioned by the relevant responsible section within Brighton & Hove City Council.

12. Defects not under the ownership of the council

During an inspection, defects may be identified which are not the responsibility of the Council to repair. The Council does however have a duty of care to the users of the highway. The staff involved in this activity shall therefore take steps to ensure that the party responsible for the repair is made aware of the defect and provided recommendations regarding repair. If the defect is causing an immediate and urgent safety hazard to the public highway, interim action will be taken to make this temporarily safe.

a) Private forecourts

These may include forecourts that are not physically separated from the public highway, such as shop frontages. The Council will not necessarily take interim action on defects in these areas as this is a matter for the landowners who may either define the forecourt as private space or invite the public to use the forecourt with an accompanying duty of care residing with the landowner.

b) Statutory Undertakers

Some defects may be due to the activities of the utilities or by a failure of their apparatus which are governed by the requirements of the New Roads and Street Works Act 1991.

Where an inspector identifies a defective reinstatement belonging to a Statutory Undertaker, this is reported to BHCC's Permit team who will pass this information onto the relevant utility with a recommended response time in order that the appropriate repair is carried out.

c) Unknown parties

Any defect identified where the owner is unknown shall be recorded and investigations shall then be undertaken to locate the responsible party.

d) Un-adopted streets

These streets are not maintainable at the public expense and are not inspected or repaired as part of the highway safety inspection regime.



13. Asset management

Brighton & Hove City Council's safety maintenance regime is part of the wider highway asset management approach for maintenance of the network.

The Code of Practice for Well-Managed Highway Infrastructure 2016 emphasises that Highway Authorities should adopt a formal process for assessing and responding to risk through both planned and reactive maintenance for all highway assets.

Brighton & Hove City Council's Asset Management Strategy sets out how planned maintenance is determined for the city's highway network. When determining the balance between structural, preventative and reactive maintenance, the principle that "prevention is better than cure" is adopted. However, this is subject to available funding and in the current financial climate for local authorities it is not possible to prevent deterioration in the condition of all streets on the highway network.

The safety inspection regime forms a key aspect of an authority's approach to managing liabilities and risks, and well managed safety maintenance has become increasingly important where resurfacing and reconstruction of the public highway is not possible.

14. Conclusion

Brighton & Hove City Council's Safety Maintenance Strategy has been developed in accordance with the Code of Practice for Well Managed Highway Infrastructure and is based on analysis and evaluation of all the available information in order to define a risk-based approach to potential safety issues.

To maintain a safe, serviceable network operating within maintenance budgets, the Safety Maintenance Strategy provides a cost-effective means of addressing immediate safety risks on the network by prioritising higher risk sites until such a time that deterioration in the condition of the road network can be addressed.



Appendix 1 – Legislative Requirements

Statutory Duty

Section 41:

The Council as a Highway Authority is placed under a duty to maintain its highways by Section 41 of the Highways Act 1980: “...the highway authority for a highway maintainable at the public expense is under a duty... to maintain the highway.”

The section 41 duty cannot be delegated whether by outsourcing or otherwise. The duty refers to repair of the fabric or structure of the highway including existing drainage.

Section 58:

Section 58 of the Highways Act 1980 grants a ‘special defence against a highway authority for damages for non-repair of the highway’ if it can demonstrate that it has taken reasonable care to ensure that the highway was not dangerous to traffic having regard to:

- The character of the highway and the traffic which was reasonably expected to use it;
- The standard of maintenance appropriate for a highway of that character and used by such traffic;
- The state of repair in which a reasonable person would have expected to find the highway;
- Whether the Authority knew or could reasonably have been expected to know that the condition of the highway was likely to cause danger to users;
- Whether warning notices were displayed when immediate repair could not reasonably be expected

Relevant Case Law

There is extensive case law relating to highway claims, regarding the standard or condition (state of repair) and what constitutes a breach of Section 41. Much of the case law has been concerned with tripping claims on the footway.

Although guidance can be taken from previously decided cases, the courts have repeatedly stated that highway claims are fact sensitive, and each case will be decided on its own facts. It is for the Court to make its own independent assessment of dangerousness, based on all the available information. However, judges are frequently referred to guidance from cited highway claims cases.

