

SAFETY INSPECTIONS

MANUAL 2018

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SAFETY INSPECTION MANUAL

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1 Introduction to the Manual

- 1.1 In line with the principles of Well-Managed Highway Infrastructure: Code of Practice October 2016, this manual has been produced with regard to local circumstances, and the relative risks and consequences associated with these. The characteristics of the regime, including the frequency of inspection, items to be recorded, and the nature of response are defined by this Highway Safety Inspection Manual, which is set in the context of the West Yorkshire plus York, Highway Infrastructure Asset management Group, Highway Management Hierarchy and Highway Safety Inspection Policy.
- 1.2 This manual is intended for senior engineers/ engineers/inspectors who undertake the scheduled highway safety inspections of the Kirklees Council highway network.
- 1.3 This manual is not intended to cover inspections of Public Rights of Way (generally rural footpaths and bridleways as shown on the Definitive Map), detailed Street Lighting inspections, Tree inspections or inspections of Highway Structures.
- 1.4 Unless otherwise stated, terms used in this manual are as defined in Well-Managed Highway Infrastructure: Code of Practice October 2016.

2 Legal Considerations

- 2.1 The Highways Act 1980 sets out the main duties of Highway Authorities in England and Wales. In particular, Section 41 imposes a duty to maintain highways maintainable at public expense, and almost all claims against authorities relating to highway functions arise from the alleged breach of this section.
- 2.2 Section 58 provides for a defence against action relating to alleged failure to maintain on grounds that the authority has taken such care as in all circumstances was reasonably required to secure that part of the highway in question was not dangerous for traffic.

3 Purpose of Safety Inspections

- 3.1 Safety inspections are designed to identify, record and prioritise the repair of all defects likely to create danger or serious inconvenience to users of the highway network or the wider community. The risk of danger is assessed on site and the defect identified with an appropriate timescale for action.
- 3.2 The Safety Inspection regime forms a key aspect of Kirklees Council strategy for managing liability and risk.

4 Network Hierarchy

West Yorkshire plus York districts have worked collaboratively to develop a common approach to defining their network hierarchies. The districts have adopted the common approach and are at various stages of reviewing and updating their network hierarchies.

Clearly it would be desirable for each district to have completed updates to their network hierarchy and have implemented any changes to highway safety inspection frequencies by the end of October 2018. The size of the task has meant that this has not been possible, and the districts priority is to ensure that the hierarchy review and update is done thoroughly and in a consistent manner. It is also important that any changes made to the hierarchy is integrated into the highway safety inspection regime.

Existing network hierarchies are based on the (old) Well-maintained Highways Code of Practice and have undergone periodic reviews and updates over recent years. As such, the districts are comfortable that their existing network hierarchies are fit for purpose and align to the current risk profile.

The benefit of updating the hierarchy to align to the new Code is recognised, however the districts feel that it is essential that the transition is managed in an orderly manner. Such a measured approach will ensure that the impact of changes to hierarchy, and therefore inspection frequency, is managed and that inspections are not missed.

4.1 Carriageway Hierarchy

Kirklees council is responsible for the maintenance of over 1976km of highway network which is split into different types of classification as shown below:

- 4.1.1 The hierarchy for carriageways has been broken down into two overarching strategies:
- Strategic Roads – Motorways, West Yorkshire Key Route Network and Main Distributors
 - Local Roads

Table 4.1 Hierarchy – Carriageways

Carriageway Hierarchy			
Category	Hierarchy Description	Defined by	Road Description
1	Motorway	DFT	Limited access, motorway regulations apply
2	West Yorkshire Key Route Network (WYKRN)	Defined by West Yorkshire Transport Committee	Regional routes which have a 'strategic' function such as connecting the key towns and cities in the county, linking to the motorway network or to Leeds Bradford Airport.
3	Main Distributor	A Roads connecting larger towns	Heavily trafficked routes and busy freight routes including Resilient Network e.g. roads linking towns to the WYKRN. The resilient network is under review and any roads falling into this category will be introduced in the next hierarchy review/update.
4	High Traffic Local Network	B and C class roads and/or one or more high key feature	Heavily trafficked local roads which have one or more high traffic volume generators e.g. important links in the network connecting towns and larger villages.
5	Medium Traffic Local Network	Locally important routes and/or one or more medium key feature	Medium trafficked local roads which have one or more medium traffic volume generators or metalled through roads with no footways
6	Low Traffic Local Network	Roads with one or more low key feature	Low trafficked local roads which have one or more low volume traffic generators
7	Local Road	Roads serving limited numbers of properties carrying access traffic and have no key features	Local roads with no traffic generators present eg serving residential properties In rural areas serve small settlements and provide access to individual properties and land In urban areas they are often residential loop roads or cul-de-sacs
8	Minor Access Road	Byways/Tracks Lanes Unmade and have no key features	Minor routes and low use un metalled tracks- some may already be unsuitable for motors and maintained in character only

4.2 Footway Hierarchy

4.2.1 At present no footways in Kirklees are categorised as Prestige Walking Zones

4.2.2 Assignment of a footway to a particular category has considered:

Pedestrian Volume

Designation as a traffic sensitive route

Current usage and proposed usage

The proximity of schools or other establishments attracting higher than normal numbers of pedestrians

Table 4.2 Hierarchy – Footways

Footway Hierarchy	
Category	Description
Prestige Walking Zones	Very busy areas of towns and cities with high public space and street scene contribution
Primary Walking Routes	Busy urban shopping and business areas and main pedestrian routes, which have one or more high pedestrian volume generators
Secondary Walking Routes	Medium usage routes through local areas feeding into primary walking routes, local shopping centres etc, which have one or more medium pedestrian volume generators.
Link Footways	Linking local access footways through urban areas and busy rural footways, which have one or more low pedestrian volume generators
Local Access Footways	Footways associated with low usage, estate roads and cul- de-sacs and have no key features
Minor Footways	Adopted little used footways serving very limited numbers of properties and have no key features

4.2 Cycleways Hierarchy

Table 4.3 Hierarchy - Cycleways

Category	Description
Cycle Lane	Cycle facilities forming part of the carriageway, these will be assigned the hierarchy of the footway/carriageway on which they exist
Cycle Track	Cycle track, a 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
Cycle Trails	Cycle trails, leisure routes through open spaces. These are not necessarily the responsibility of the highway authority

4.3 Key Features

The following functionality factors/traffic and pedestrian generators have been used to develop the carriage and footway hierarchies.

Table 4.4 Functionality Factors / Traffic and Pedestrian Generators

Functionality Factors / Traffic and Pedestrian Generators					
Grouping	Service	Data Type	Low Value	Medium Value	High Value
Medical Facilities	Hospitals & Large Clinics	Number of Parking Space	<20	20-500	>500
	GP Surgeries	number of doctors in practice	n/a	5-10	>10
Educational Institutions	University	Number of Pupils	<200	200-1000	>1000
	College	Number of Pupils	<200	200-1000	>1000
	School	Number of Pupils	<200	200-1000	>1000
Retail facilities	Shopping Centres	Number of Shops	n/a	3-15	>15
	Supermarkets	Number of Parking Spaces	<200	200-800	>800
	Out of town shopping centres	Number of Stores	n/a	4-10	>10
Commercial:	Industrial estates	Number of units	<10	10 - 50	>50

	Business Parks	Number of Units	<10	10 - 50	>50
Recreational	Sports stadia	Number of Seats	<400	400-10,000	>10,000
	Entertainment Venue	Number of Seats	<400	400-10,000	>10,000
Transport	Railway Stations	Passenger entry/exit per annum	<50k	50k – 100k	>100k
	Bus routes	Buses frequency	>30 mins	15 – 30 mins	15mins or more
	Airports	Consider as high	n/a	n/a	n/a
Emergency Services:	Ambulance, Fire Station, Police, Mountain Rescue	Yes/No		Yes	

5 Frequency of Inspections

5.1 Highway Safety Inspection frequencies are based upon Network Management categories developed from the West Yorkshire and York, Highway Infrastructure Asset management Group, Highway Management Hierarchy and Highway Safety Inspection Policy.

5.1.1 Most carriageways and footways within Kirklees are inspected simultaneously with the frequency of the inspection being set at the most frequent of the two intervals, therefore some streets are inspected more frequently than indicated in the tables below:

Table 5.1 – Safety Inspection Frequency

Feature	Category	Frequency
Carriageway	Motorway	N/A
	WY Strategic Key Route Network	1 Month
	Main Distributor	1 Month
	High Traffic Local Network	1 Month
	Medium Traffic Local Network	3 Month
	Low Traffic Local Network	6 Month
	Local Road	12 Month
	Minor Access Road	Inspection on Request
Footway	Prestige Walking Zones	N/A
	Primary Walking Routes	1 Month
	Secondary Walking Routes	3 Month
	Link Footways	6 Month
	Local Access Footways	12 Month
	Minor Footways	Inspection on Request
Cycleway	Cycle Lane	As for carriageway
	Cycle Track	Yearly
	Cycle Trails	Yearly

5.2 Method of Inspection

Driven scheduled highway safety inspections are undertaken by two people in a suitable vehicle with signage and mounted beacon, travelling at a speed that will enable adequate recording of defects (less than 20mph), with one inspector/engineer driving and the other inspecting the highway network. The driver will not be expected to be actively involved in identifying and recording defects but will concentrate on ensuring the safe passage of the vehicle. However, on occasion where the inspection vehicle will pass directly over a defect or potential defect the driver may offer assistance to the inspector.

When carrying out driven safety inspections the vehicle may be stopped to examine potential defects more closely on foot.

Walked scheduled highway safety inspections are undertaken by one inspector/engineer on foot whilst walking along the relevant section of footway or pedestrianised area. Each section of footway on the street or pedestrianised area is walked to ensure a thorough inspection.

6 Additional Inspections and Exceptional Circumstances

- 6.1 Additional inspections may be necessary in response to user or community concern, as a result of incidents, extreme weather conditions, monitoring information or roads being used for long term diversions. The occurrence of any such inspection and its outcome is recorded as an additional inspection.
- 6.2 In exceptional circumstances, scheduled highway safety inspections may not be able to be carried out, e.g. during periods of extreme weather. In these circumstances, safety inspections may be suspended and/or a temporary amendment to procedure put in place.

7 Items for Inspection

7.1 Items to be considered and observed on scheduled highway safety inspections are outlined below, this list is not exhaustive and is provided as a check list only. Inspectors/Engineers may also record any other defects not included that they consider are likely to create danger or serious inconvenience to the community.

	Footway	Carriageway
Surface Maintenance	Arrange repair or making safe of footway defects including potholes, defective ironwork, kerb and flags or edging defects.	Arrange repair or making safe of potholes and other surface defects including ironwork and channel defects.
Highway Drainage	Report excessive standing water or excessive water flowing onto the footway. Report blocked gullies, drainage channels or grips.	Arrange to make safe as necessary and report excessive standing water or excessive water flowing onto or across the carriageway. Report blocked gullies or kerb drainage systems
Highway Obstructions	Report or action any serious obstruction of the footway that are likely to cause a danger or serious inconvenience to users	Report or action any serious obstruction of the carriageway that are likely to cause a danger or serious inconvenience to users
Verge Maintenance	Arrange for repairs or make safe any defects that are likely to cause a danger or serious inconvenience to users	Report obstruction to visibility and sight lines caused by verge overgrowth.
Safety Fences & Barriers	Arrange to make safe as necessary and report damaged safety fences and barriers.	Arrange to make safe as necessary and report damaged safety fences and barriers.
Highway Trees	Visual inspection only. Report hazards caused by the condition of trees, including surface disturbance from roots to the Councils Forestry Team	Visual inspection only. Report hazards caused by the condition of trees, including surface disturbance from roots to the Councils Forestry Team. Remove easily moved broken branches or tree debris from carriageway or arrange for removal via the Councils Forestry Team.

Street Cleansing	Report to the Councils Cleansing Service any debris/fly tipping on footway likely to cause a danger or serious inconvenience to users	Remove easily moved debris if safe to do so which is likely to cause a danger or serious inconvenience to users, from trafficked areas or arrange for removal via customer services. Report extensive spillages to customer services
Traffic Signs / Signals	Report damaged signs and traffic signals	Report damaged signs and traffic signals
Street Lighting	Report damaged columns	Report damaged columns
Lining		Report badly faded road markings at give way and stop junctions, that are likely to cause a danger or serious inconvenience to users
Bollards	Report missing bollards	Report missing bollards

Additional Information

Defective Apparatus / Reinstatements

Defective apparatus including utility boxes (manholes) are the responsibility of statutory undertakers, in such cases the defect will be recorded, and a section 81 notification of unsatisfactory apparatus issued to the relevant utility by the back office team.

Highway Drainage

Extensive water on the carriageway can cause aqua-planing, vehicles swerving to avoid standing water and ice formation in the winter. The most common cause can be blockages to gullies, drainage channels or grips.

Any incidences of extensive water recorded and passed to the drainage team.

Obstruction

Physical obstruction can be caused by anything deposited on or suspended over the highway. The extent of any potential danger risk assessed in each individual circumstance taking into account the nature of the obstruction, site layout and the level of traffic using the highway.

In the majority of instances, the most appropriate first action will be to seek the removal of the obstruction by the person responsible for it. If this results in a rebuff or non-action within a reasonable period, then the matter shall be reported for enforcement action to be considered.

In exceptional circumstances direct action by Highways Operations to remove the obstruction may be warranted.

Verge Maintenance

Verges can present problems to highway users through poor surface condition or obstruction to visibility and sight lines caused by thorough overgrowth. Arrange for repairs or make safe any defects that are likely to cause a danger or serious inconvenience to users, having due regard to its level of use

Safety Fences and Barriers

Damaged safety barriers should be made safe and reported to the Reactive team for permanent repair if applicable.

Examples:

- Projections from the damaged fence or barrier, which extend into areas which, might reasonably be used by pedestrians or vehicles.
- Missing section of pedestrian guard rail above a vertical drop.

Highway Trees

Visual inspection only, any tree seeming dead or badly diseased reported to the Forestry Section for further investigation. Record excessive surface disturbance from roots.

Street Cleansing

Any urgent action required to remove needles and other sharp objects from the highway, large scale spillage and tipped material if causing obstruction, dead animals etc. should be rung through to customer services to arrange for removal.

Under no circumstances should the inspector undertaking the inspection handle needles, syringes or other sharp objects.

Traffic Signs and Signals

Any urgent traffic sign or signal faults should be rung through to customer service to arrange for the sign/signal to be made safe or repaired. Examples:

- Electrical covers missing
- Exposed wires
- Insecurely rooted traffic signal and signposts leaning into carriageway
- Signal heads or sign lighting units hanging loose

Other traffic sign/signal defects should be recorded and passed to the Street Lighting Department/Urban Traffic Control sections.

Street Lighting

Any urgent street lighting faults should be rung through to Customer Services to arrange for the faults to be made safe or repaired. Examples:

- Missing doors/exposed wires on lighting columns
- Severely leaning/bad cracks on lighting columns

Other street lighting defects should be recorded and passed to the Street Lighting Department.

Lining

Badly faded road markings at give way and stop junctions, which are likely to cause a danger or serious inconvenience to users, recorded and passed to Highway Safety section.

Defects not the Direct Responsibility of the Council

During an inspection defects may be identified which are not the responsibility of the Authority to repair. However, the Authority does have a duty of care to highway users. Inspection staff will make every effort to identify the person(s) responsible for the defect and draw their attention to both the defect and their responsibilities. If necessary, appropriate temporary action taken to protect the public.

Examples:

Cellar heads covering the footway are the responsibility of the property they serve and maintenance for such lies with the owner/occupier of that property.

Initially arrangement should be made for the area to be made safe, generally by way of covering with a walk board and or cones/barriers.

Defective cellar heads should be recorded, and a letter issued to the owner/occupier of the property to arrange for repairs to be carried out.

Drainage Conduits are the responsibility of the property they serve and maintenance of such lies with the owner/occupier of that property.

Initially arrangement should be made for the area to be made safe, generally by way of covering with a walk board and or cones/barriers.

Defective drainage conduits should be recorded, and a letter issued to the owner/occupier of the property to arrange for repairs to be carried out.

Any defect identified where the person(s) responsible is unknown shall be recorded and passed to the Reactive team for follow up investigations to be undertaken to identify the responsible party.

Examples

Potholes



Uneven Surfaces



Ironwork/
Gullys



Barriers/
Utilities



8 Risk Based Inspection

8.1 Risk Based Approach

A risk-based approach to defect categorisation and repair times, enables maintenance that is appropriate to the level of risk presented to all highway users, in the context of the entire highway asset for which the Council is responsible. This approach will wherever practicable, enable a right first-time approach to permanent repairs which will reduce the risk to the travelling public.

8.2 Risk Evaluation

8.2.1 All defects identified during the inspection process shall be evaluated in terms of their significance, which means assessing the likely impact should an incident occur and the probability of it actually happening.

8.2.2 Examples of parameters which may be taken into consideration when assessing the risk may include:

- The depth, surface area or other degree of deficiency of the defect or obstruction.
- The volume, characteristic and speed of traffic.
- The location of the defect relative to other highway features such as retaining walls, bridges, embankments, junctions, and bends.
- The location of the defect if it could adversely affect non-highway features such as neighbouring properties.
- The location of the defect relative to the positioning of all highway users.

8.3 Risk Factor

8.3.1 The risk factor for a particular hazard (defect) is the product of the impact and the probability, which is measured on a scale of 1 to 16.

8.3.2 The risk factor can be used to identify the overall significance of the risk and consequently the appropriate response required.

8.3.3 Defects are allocated one of four risk categories as follows:

Category 1 (risk ranking 16) those defects categorised as a high risk that require prompt attention because they represent an immediate or imminent hazard and should be repaired within 1 day.

Category 2 (risk ranking 9-12) those defects which are categorised as a medium risk following a risk assessment, are deemed not to represent an immediate or imminent hazard but should

where practicable be repaired within 7 working days.

Category 3 (risk ranking 6-8) those defects which are categorised as a low risk following a risk assessment and should be where practicable repaired within 28 working days.

Category 4 (risk ranking 1-4) those defects which require maintenance but do not represent a safety hazard to users of the highway network and may be considered for a future maintenance program.

8.4 Risk Impact

8.4.1 The impact of a risk occurring will be quantified on a scale of 1 to 4.

8.4.2 Consideration should be given to the extent of damage or injury to be caused if an incident occurred. The impact is likely to change with different defects, the amount and type of traffic and speed.

Table 8.4 Impact Ratings

Impact rating	Score
High	4
Moderate	3
Low	2
Negligible	1

8.5 Risk Probability

8.5.1 The probability of a risk occurring will be quantified on a scale of 1 to 4.

8.5.2 Consideration should be given to the likelihood of users encountering the defect including location, and both vehicular and pedestrian usage.

Table 8.5 Probability Ratings

Probability rating	Score
High	4
Medium	3
Low	2
Very Low	1

8.6 Risk Matrix

8.6.1 The risk matrix below determines the risk factor from the impact and probability assessments.

8.6.2 The category of repair is identified by its risk factor (**table 8.6**) and allocated a timescale for repair based upon this risk factor.

- 8.6.3 The repair timescales in working days, commence at the point in time that the Council has visited site and categorised the defect.
- 8.6.4 Timescales are designed to enable actionable highway defects to be, wherever practicable, actioned by a permanent repair. This balances the immediate risk posed to highway users with the ongoing risk that will be posed as a consequence of a failed temporary repair.
- 8.6.5 In some situations, it may be necessary to respond to certain defects as soon as reasonably practicable

Table 8.6 Risk Assessment Matrix

Probability Impact	Very low	Low	Medium	High
Negligible	1	2	3	4
Low	2	4	6	8
Moderate	3	6	9	12
High	4	8	12	16
Category	Cat 4	Cat 3	Cat 2	Cat 1
Response Minimum Time Frame	Consider for forward programme	28 days	7 days	1 day

8.7 Category

Category 1

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

Normally all category 1 defects will be actioned within 1 day. If felt to be necessary, the inspector shall remain at the site to warn highway users of the hazard until Operations have responded.

Category 2

Defects which do not form an immediate hazard to the highway user but warrant an earlier repair than 28 working days. The defect is recorded and issued for repair within 7 working days.

Category 3

Defects which do not form an immediate hazard to the highway user. The defect is recorded and issued for repair works to be carried out within 28 working days.

Category 4

Do not represent a safety hazard to users of the highway network and may be considered for a future maintenance program.

9 Recording and Monitoring of Information

- 9.1 All information obtained from safety inspections, together with the nature of response, including nil returns, shall be recorded consistently on the safety inspection database. Data stored electronically on a server which is backed-up on a daily basis.
- 9.2 All inspections shall record the date and name of inspector carrying out the inspection and if applicable any unusual circumstances of the inspection.
- 9.3 Information recorded against the relevant named street.
- 9.4 Category 1 defects recorded, and the details rung through to the back office team to action the repair.
- 9.5 Records of scheduled highway safety inspections will be retained by the Authority for future reference.
- 9.6 The Authority will ensure that the routes include the existing adopted highway network and that newly adopted highways, where appropriate are added to the highway safety inspection routes.

10 Training

- 10.1 Inspectors will be trained and accredited to national guidelines and will also be affiliated of any national organisation for example The National Register of Highway Safety Inspectors, where reasonably practicable. Any new safety inspectors will receive in-house training to continue consistency in the identification of actionable defects and the prioritisation of repairs. All inspectors will be competent in risk assessing defects and making on site judgements.

11 Claims by Third Parties

- 11.1 The Council receives claims for damages for alleged failure of its statutory duty that is Section 41 - duty to maintain a highway. The inspection records constitute an important part of the Council's defence documents. In the event of such a claim the person(s) undertaking the inspection may be required to comment and may be called as a witness to defend the claim in court.

It is important that the information given is accurate and honest.