MIDDLESBROUGH COUNCIL

Highway Safety Inspection Manual

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Highway Safety Inspection Manual

1 Introduction

The Council in complying with its duty to maintain the highway, as outlined within Section 41 of the Highways Act 1980 and for the purposes of Section 58, which provides for special defence, undertakes inspections of all adopted highways within the Borough.

This guidance manual has been developed with the primary aim of providing assistance to those officers involved in undertaking highways safety inspections so that they may carry out their duties in a systematic and consistent manner to clear and easily understood criteria.

Well-Managed Highway Infrastructure: A Code of Practice makes recommendations for an inspection, assessment and recording regime. In line with this, a risk based inspection regime has been revised and implemented with regard to highways in accordance with the Highways Infrastructure and Maintenance Plan 2018 which is founded on the principles of best value and risk assessment. This provides the basic information required for addressing the key objectives of highway maintenance strategy:

- Network Safety
- Network Serviceability
- Network Sustainability

It goes on to identify three types of inspections:

- **Safety Inspections**
- Service Inspections
- Condition Surveys

This manual deals specifically with safety inspections which are derived from two main sources:

- Planned cyclic safety inspections to identify potential dangers.
- Reactive safety inspections in response to reports regarding the condition of the highway.

Cyclic Safety Inspections are carried out to specified frequencies, dependent upon the classification of each highway. During the inspection, defects that are at or exceed the minimum investigation levels, as outlined within this manual, are identified and processed for repair if necessary following risk assessment.

2 Methodology

Safety Inspections are intended to identify those defects, which are likely to create a danger or serious inconvenience to users of the highway network or the wider community and therefore, require immediate or urgent attention. Such defects should include those that require urgent attention (within 24 hours) as well as those where a longer response period would be acceptable.

The following parameters have been used to specify our safety inspection regime:

- Frequency of Inspection
- Items for Inspection
- Defect Investigatory Levels
- Risk Assessment
- Degree of Deficiency
- Nature of Response

2.1 Frequency of Inspections

The following frequencies for safety inspections are based upon network hierarchies as outlined in the Well Managed Highways Infrastructure: A Code of Practice and subsequently the Highway Infrastructure Maintenance Plan 2018 which also takes into account the following considerations:

- Category within the network hierarchy
- Traffic use, characteristics and trends
- Incident and inspection history
- Characteristics of adjoining network elements
- Local knowledge / expertise
- special environmental considerations
- Winter service route and resilient network
- vulnerable users or with special needs – old people's homes etc
- accident statistics following an increase in notified third party insurance claims

Middlesbrough Council has adopted the recommendations shown.

Inspection "due dates" are automatically generated by the Symology Insight Pavement Management System. In order to make provision for holidays, sickness and inclement weather,

Middlesbrough Council will endeavour to complete all Safety Inspections within 1 week of the due date for monthly inspections, 2 weeks for 3 monthly inspections and 1 month for 6 and 12 monthly Inspections.

CARRIAGEWAY INSPECTION HIERARCHIES / FREQUENCIES

Category	Hierarchy Description	General Description	Frequency
2	Strategic Routes	Non Motorway Trunk and some principal "A" roads between primary destinations.	1 Month
3a	Main Distributor	Major Urban Network and Inter-Primary Links. Short – medium distance traffic.	1 Month
3b	Secondary Distributor	Classified Road (B & C class) and unclassified urban bus routes carrying local traffic with frontage access and frequent junctions.	1 Month
4a	Link Road	Roads linking between Main and Secondary Distributor Network with frontage access and frequent junctions.	3 Months
4b	Local Access Road	Roads serving limited number of properties carrying only access traffic. (Cul de sac)	12 Months

FOOTWAY INSPECTION HIERARCHIES / FREQUENCIES

Category	Hierarchy Description	General Description	Frequency
1a	Prestige Walking Zone	Prestige Areas in towns and cities with exceptionally high usage, such as Prince's Street, Edinburgh.	1 Month
1	Primary Walking Route	Busy urban shopping and business areas, and main pedestrian routes linking interchanges between different modes of transport, such as railways and bus stops etc.	1 Month
2	Secondary Walking Route	Medium usage routes through local areas feeding primary routes, local shopping centres, large schools and industrial centres etc.	3 Months
3	Link Footway	Linking local access footways through urban areas and busy rural footways. To Include flagged Local Access Footways.	6 Months
4	Local Access Footway	Footways associated with low usage, short estate roads to the main routes and culs de sac.	12 Months

CYCLEWAY INSPECTION HIERARCHIES / FREQUENCIES

Category	Hierarchy	General	Frequency

	Description	Description	
A	Cycle Lane	Cycle lane, forming part of the carriageway, commonly 1.5 metre strip adjacent to the nearside kerb. Cycle gaps at road closure point (exemptions for cycle access).	As for appropriate carriageway category
B	Cycle Track	Shared cycle/pedestrian paths, either segregated by a white line or other physical segregation, or unsegregated.	As for appropriate footway category
		Cycle track, a route for cyclists not contiguous with the public footway or carriageway.	6 Months
C	Cycle Trail	Cycle trails, leisure routes through open spaces. These are not necessarily the responsibility of the highway authority.	12 Months

2.2 Items for Inspections

The following list is an example of items that the 'Inspector' should look for whilst carrying out a 'Routine Safety Inspection':

Item	Defect
Carriageway and Cycleway	Pot hole/spalling, ridge, hump, depression/sunken cover or gap/crack
Footway	Trip/pot hole/sunken cover, rocking slab/block or open joint
Kerb	Misaligned, loose / rocking or missing
Verge	Sunken area adjacent to and running parallel with the carriageway / footway edge or obstruction
Iron Work	Gaps within framework, level differences within framework, rocking / cracked / broken / worn / polished or missing covers
Flooding – where conditions allow	Standing water, water discharging onto or flowing across the running surface, significant flooding of property
Drainage	Substantial standing water adjacent to edge of c/way, blocked gully/kerb outlet or collapsed/ blocked/settled items or systems
Road Markings	Faded or worn markings
Road Studs / Eyes	Missing, void left in c/way, displaced items on c/way or defective studs / eyes.
Signs / Bollards / Lights / Traffic signals	Damaged/misaligned items causing a hazard, missing items causing a hazard, lights/signals not operating correctly/malfunctioning, signals pointing the wrong way, signal lamp failure, exposed wiring, missing doors to lamp columns and electrical enclosures, items missing or items obscured/dirty/faded
Safety Fencing / Barriers	Damaged/misaligned items projecting into c/way or f/way or structurally unstable items likely to cause danger
Hedges and trees	Overhanging trees and vegetation or unstable trees and branches. Damage associated to tree roots.

Highway General	Oil/debris/mud/stones/gravel likely to cause a hazard, illegal signs, obstructions on the highway, obstructed sight lines, ramps in c/way to aid vehicular movement, f/way damage caused by vehicular access where no vehicle crossing, scaffolding or skips likely to cause a hazard, unprotected building materials on the highway or abandoned vehicles likely to cause a hazard
Anything Dangerous	Anything considered dangerous on the highway which could affect either highway users or the general public

Note: 'Routine Safety Inspections' should also include the inspection of footbridges and underpasses that form part of the adopted highway network. Detailed inspections of bridge structures to be carried out by Asset Management section.

2.3 Defect Investigatory Levels

Investigation levels relating to highway defects to be used as part of the risk assessment process whilst giving consideration to the following factors:

Depth, surface area or other extent of the defect
Location of the defect relative to highway features such as junctions, bends.
Road hierarchy
Location of defect relative to road users, giving consideration to vulnerable groups
The nature and extent of interaction with other defects
Weather forecast and seasonal considerations.

Item	**Defect**	**Investigatory Level**
Carriageway	Pothole/ spalling	With adjacent footway 20mm depth (75mm across in any horizontal direction). Remote with no adjacent footway 40mm depth (75mm across in any horizontal direction).
	Depression	50mm (area 2 sq metres)
	Rutting	20mm
	Gap / crack	20mm depth (20mm wide)
	Sunken ironwork	20mm difference in level
Utility works	Crowning, trips, depressions	as NRSWA Code of Practice
Pedestrian crossing	Trip/pothole	15mm depth
Footway (primary walking route)	Trip / pothole / sunken cover	15mm depth (75mm across in any horizontal direction)
	Rocking slab / block	15mm vertical movement
	open joint	20mm depth (100mm x 50mm horizontally)
	Tree root damage	15mm trip
	Sunken ironwork	15mm level difference

Footway (others)	Trip / pothole / sunken cover Rocking slab / block open joint Tree root damage Sunken ironwork	20mm depth (75mm across in any horizontal direction) 20mm vertical movement 20m depth (100mm x 50mm horizontally) 20mm trip 20mm level difference
Kerbs	Misaligned Loose / rocking Missing	50mm horizontally 15mm vertically Yes
Verges	Sunken area adjacent to and running parallel with carriageway edge. Sunken area adjacent to and running parallel with footway edge obstruction.	Depth 150mm Depth 100mm

Ironworks	Gaps within framework (other than designed by manufacturer). Level differences within framework Rocking covers Cracked / broken covers Worn / polished covers Missing covers	20mm 20mm 20mm vertical movement Yes Yes Yes
Flooding	Standing water likely to cause a hazard. Substantial running water across carriageway. Substantial running water across footway. Property inundation	Yes Yes Yes Yes
Drainage	Defective grips, filter drains, catch pits. Blocked gully (silted above outlet). Collapsed / blocked / settled items or systems	Yes Yes Yes
Road markings	Faded or worn markings	Where a considered risk/hazard is seen to exist
Road studs	Missing Hole left in c/way Displaced item on c/way Defective item	Yes >20mm depth (75mm across in any horizontal direction) Yes Yes

Signs/bollards/lights & traffic signs	Damaged/misaligned item causing a hazard. Missing item causing a hazard. Lights/signals not operating correctly/malfunctioning. Signals pointing the wrong way. Signal lamp failure Exposed wiring Missing door to lamp column. Item missing Item obscured by whatever including trees, hedges, other signs etc. Item illegible Signs slipped, or erected too low	Yes Yes Yes Yes Yes Yes Yes Yes Yes Yes <2.1m over footways <2.4m over cycle ways <5.1m over carriageways
Safety fencing and barriers	Item damaged or misaligned causing a hazards. Unstable item or section	Yes Yes

Hedges and trees	Unstable tree causing danger of collapse onto highways. Overhanging tree leading to loss of height clearance over carriageway, footway or cycleway.	Yes <2.1m over footways <2.4m over cycle ways <5.1m over carriageways
Highway general	Oil / debris / mud / stones and gravel likely to cause a hazard. Street furniture missing / damaged likely to cause a hazard. Illegal signs Obstructions in the highway Obstructed sight lines Ramps in carriageway to aid vehicular movement. F/way damage caused by vehicular access where no vehicle crossing. Scaffolding likely to cause a hazard. Skips likely to cause a hazard. Unprotected building materials on the highway. Abandoned vehicles likely to cause a hazard.	Yes Yes Yes Yes Yes Yes Yes Yes Yes Yes Yes
Other dangers to the public	Anything else considered dangerous	Yes

In regard to defects specified in the above table, particularly those covered under the “highway general” heading, many are the responsibility of individuals or organisations and not the highway authority. Unless urgent action is required, the Inspector’s course of action shall be to pass on the relevant information to the section or department which is responsible for overseeing that particular activity.

In addition there are other works undertaken by third parties, which are clearly their responsibility. It is the responsibility of the Inspector, wherever practicable, to ensure that the third parties are aware of any problem and undertake all necessary remedial action to resolve the problem. If the third party is known and unwilling or unable to rectify the problem, any costs incurred in remedial action shall be recharged to them accordingly

This also applies to private forecourts open to public access. Highway Inspection records should indicate anything considered to be a hazard in such locations and actions taken noted. Records should refer to letters sent, responses received and checks on actions taken. In the event that the land owner fails to take appropriate action or the land is unregistered, Inspectors are required to consider powers available to them under the Highways Act 1980.

4 Degree of Deficiency

The degree of deficiency and the level of risk to users of the network also define the category into which the defect is placed which in turn indicates the level of response required.

- **Category 1 Defect**

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

- Priority 1(A) - those that require a 2 hour response because of their immediate hazard

- Priority 1(B) - those that require a 24 hour response because they represent an imminent hazard.

- **Category 2 Defect**

  All other defects

- Priority 2H - make safe or repair within 5 working days

- Priority 2M - repair within 28 days

- Priority 2L - repair during next available programme, schedule a more detailed inspection or review condition at next inspection.

It is essential that all defects, observed during a safety inspection, which require urgent attention (Category 1) because of the high risk to users of the network or the wider community, are recorded.

In addition other defects (Category 2) that do not require urgent attention but may have a detrimental effect on the network and thus on highway safety and serviceability, should be recorded for future works programming.

Defect assessment and response prioritisation

LIKELIHOOD OF EVENT OCCURRING	CONSEQUENCE OF EVENT OCCURRING				
	NEGLIGIBLE	LOW	MEDIUM	HIGH	SEVERE
NEGLIGIBLE	1	2	3	4	5
VERY LOW	2	4	6	8	10
LOW	3	6	9	12	15
MEDIUM	4	8	12	16	20
HIGH	5	10	15	20	25
KEY TO RISKS					
LOW		MEDIUM		HIGH	

Score 25 Cat 1 a – 2hour response
Score 20 Cat 1 b – 24 hour response

Score 15 to 16 Cat 2H 5 day response
Score 8 to 12 Cat 2M 28 day response
Score 1 to 6 Cat 2L to be added to future programme

2.5 Nature of Response

Category 1 Priority 1a defects should, where reasonably practicable, be corrected or made safe at the time of the inspection. This may include displaying warning signs / notices, coning / fencing off the defect or carrying out a temporary repair to protect the public from the hazard.

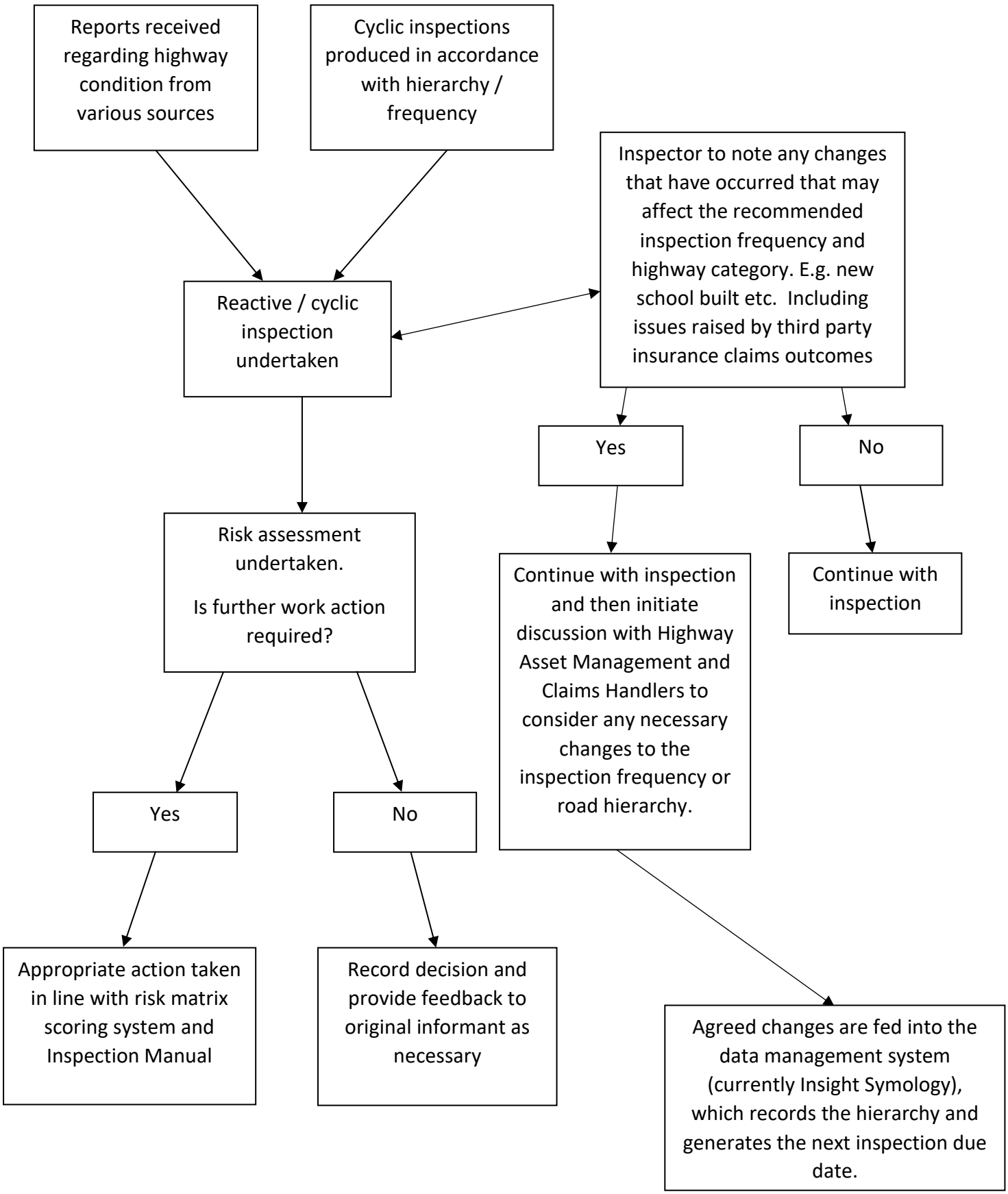
If it is not possible to correct or make safe the defect at the time of inspection a permanent or temporary repair should be carried out within 24 hours.

Where defects are made safe, using temporary signing or repair, appropriate interim inspections should be carried out to ensure the integrity of the temporary repair is maintained until a permanent repair can be carried out. The permanent repair should be carried out within 28 days.

Category 2 defects should be prioritised using risk assessment matrix

3 – Inspection Procedures

The following diagram outlines the inspection regime and actions to be taken -



Locating / Recording Defects

To ensure the repair team can quickly identify the precise defect, it is essential that the information provided by the inspector is simple and easily understood.

Defects shall be marked with temporary road marking paint **only** where necessary, to enable the repair team to locate them quickly and alert the public to any potential danger posed by the defect.

In order to locate a defect effectively, the repair team requires the following information:

- The location of the defect along the length of the highway.
- The position of the defect across the width of the highway
- The size and type of defect

3.1.1 Location along the Highway

This information should be clear, precise and easily understood. This will reduce the lost productivity time of the repair team used to locate a specific defect.

Ideally a combination of the following information should be recorded:

- Street name / road number
- House number / building name
- Distance and direction from nearest road junction
- Street lighting (S/L) column number

WHERE IT IS NOT POSSIBLE TO EASILY DESCRIBE THE POSITION OF A DEFECT ROAD MARKING PAINT SHOULD BE USED.

Examples:

- Outside 17 Lansdowne Road, Middlesbrough
- A66 westbound between Hartington interchange and Cannon Park interchange 200 metres from junction with Newport Road
- Between Street Lighting Column No. PEZ012 and PEZ013
- B1380 junction with Ormesby Road

3.1.2 Position of the Defect on the Highway

This information is essential for assisting the repair team to precisely locate the defect, identified by the inspector.

Again simplicity is the key to success.

Examples:

- Channel of carriageway
- On verge
- At start of radius
- Adjacent to
- On pedestrian crossing
- In central reservation
- In slow / fast lane

3.1.3 Describing Size and Type of Defect

When describing a defect the inspector must clearly state the nature of the defect and its approximate size, where applicable. This will enable the repair team to collect the correct materials to carry out the repair.

Descriptions such as ‘Pothole’, ‘Broken Flags’ and ‘Damaged Kerbs’ do not convey enough information for the repair team to carry out a repair efficiently. It is essential that all the information required to carry out the repair is recorded, by the inspector and passed onto the repair team.

Examples:

- Outside 17 Lansdowne Road, Middlesbrough, pothole approx. 750 x 900 x 50mm deep in channel of carriageway.
- B1380 junction with Ormesby Road, 5 no. broken b/n kerbs (125 x 255), east kerb line.
- A66 westbound between Hartington interchange and Cannon Park interchange 200 metres from junction with Newport Road, 3 no reflective road studs missing from C/L.
- B1272 Hartington Road, between Street Lighting Column No. PEZ012 and PEZ013, broken road gully cover (450 x 450), southbound.

3.2 Inspection Problems

It is essential that the presence and location of visible obstacles to all/part of the Safety Inspection are recorded on the Highway Safety Inspection Report sheet.

Examples:

- Parked cars.
- Snow or leaves obscuring part of footpath/carriageway.

4 Appendices

Appendix A - Highway Safety Inspections

Appendix B - Procedure for Dealing with Statutory Undertakers
Defective Surface Apparatus

Appendix A

HIGHWAY SAFETY INSPECTIONS

1. **SCOPE**

This Technical Guidance Note describes the procedure involved in highway safety inspections carried out at pre-determined frequencies to detect and document dangerous defects on the Councils Highways Network as undertaken by the Highway Inspector(s).

2. **TECHNICAL GUIDANCE**

The frequency and method of carrying out the highway safety inspection is shown in the Highway Inspection Schedule (Appendix 1). At the defined interval the Highway Inspector will carry out the inspection in accordance with the Highway Safety Inspection Manual and record the findings into the Symology Insight highway database.

At the start of each inspection, the Inspector is to pay attention to any environmental / road user changes that may impact upon the inspection frequency of the road in line with the risk based approached to our current inspection regime. Recommendations with regard to changes are to be noted on inspection report and passed to Asset Management for assessment.

Cyclic inspections are managed and recorded through Symology Insight highways asset management database with regard to inspection due date, inspection undertaken date, defects observed and the recommended course of action in line with risk based approach.

The performance of the safety inspection process is monitored on a regular basis and recorded onto a spreadsheet.

3. **HIGHWAY INSPECTOR COMPETENCY**

All current Middlesbrough Highway Inspectors completed training and qualification in September 2018 to IHE national recognised standards. Training to be reviewed on a five year basis to maintain competency

4. **RELATED DOCUMENTS**

Environment – Highway Safety Inspection Manual

Well Managed Highway Infrastructure: A code of Practice

Highways Infrastructure Maintenance Plan 2018

Highway Infrastructure: Asset Management Guidance

Chapter 8 – Traffic Signs Manual

Highways Act 1980

REGULATORY FUNCTIONS

Regulatory functions can contribute to the core objectives as follows:-

Safety minimising and signing of obstruction

Serviceability minimising congestion and disruption

Sustainability inconvenience to disabled people

heavy vehicle parking causes structural damage

Standards in respect of regulatory functions are governed largely by statute and can be the responsibility of other organisations or administrated by other sections or departments within the authority. In such cases effective co-ordination and liaison is essential

Highways Act 1980

As the Highway Authority the Council has a duty, under the Highways Act 1980, to maintain the highway network to safe and serviceable standards ensuring that the public can use and enjoy the highway without obstruction.

New Roads and Street Works Act 1991

The New Roads and Street Works Act 1991 (NRSWA) is the legislation that enables utility companies to place and maintain apparatus in or on the public highway. Objectives of the legislation are that Highway Authorities and Utilities should cooperate with each other to ensure that disruption to all road users is minimised as far as possible, the integrity of the highway structure is maintained and that the safety of those using the highway is not compromised.

Traffic Management Act 2004

The purpose of the Act is to 'keep traffic moving' by minimising congestion and disruption on the highway network. In this respect there is a statutory duty, as local highway authority, to 'Manage the road network with a view to achieving, as far as may be reasonably practicable having regard to other obligations, policies and objectives, the following objective: -

- securing the expeditions movement of traffic on the authority's roads network.
- facilitating the expeditions movement of traffic on roads networks for which another authority is the traffic authority.

The Council has appointed the Highways Services Manager as Traffic Manager under the regulations and as the first part of the enactment phase.

It is intended to enhance and extend current systems already in place to meet the forthcoming challenges of the new legislation in further phases.

Further regulatory and enforcement duties are placed upon the Council by the following Acts:-

- Railways and Transport Safety Act, 2003
- The Local Government Act 2003
- Road Traffic Regulation Act 1984
- Traffic Signs and General Directions 1994
- Floods and Water Management Act 2010
- Road Traffic Act 1988
- Road Traffic Reduction Act 1997
- Transport Act 2000
- Wildlife and Countryside Act 1981
- Environmental Protection Act 1990
- Rights of Way Act 1990
- Countryside and Rights of Way Act 2000
- Health and Safety at Work Act 1974
- Management of Health and Safety at Work Regulations 1992

- Construction (Design & Management) Regulations 1994
- Disability Discrimination Act 1995
- Criminal Justice and Public Order Act 1994
- Human Rights Act 1998
- Local Government Act 2000

		Carriageway					**Footway (Including combined footway and cycleway)**					**Cycleway**			
Hierarchy	Class	2	3a	3b	4a	4b	1a	1	2	3	4	A	B		C
	Description	Strategic Routes	Main Distributor	Secondary Distributor	Link Road	Local Access Road	Prestige Walking Zone	Primary Walking Route	Secondary Walking Route	Link Footway	Local Access Footway	Cycle Lane	Cycle Track		Cycle Trail
													Shared	Separate	
Inspection Frequencies /Type	2 Weekly						Safety					Safety - As per Carriageway's	Safety - As per Footway's		Inspections carried out by Middlesbrough Council - Countryside Section
	Monthly +/- 1 week	Safety	Safety	Safety				Safety							
	3 Monthly +/- 2 weeks				Safety				Safety						
	6 Monthly +/- 1 month									Safety				Safety	
	Yearly +/- 1 month					Safety					Safety				
Safety	Driven 2 man	*	*	*	*	*					* (Rural)				
Method	On Foot						*	*	*	*	* (Urban)	*	*	*	

Notes

(a) All driven inspections are to be carried out in the direction of the traffic flow.

(b) Additional safety inspections may be required in response to reports or complaints received from the Police, other organisations and the general public.

(c) All surveys carried out on foot will also include for the adjacent carriageway

Definition of Survey Type

Safety Inspections – designed to identify all defects likely to create a danger or serious inconvenience to users of the network or the wider community. Such defects should 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. On carriageways they will normally be carried out from a slow moving vehicle with the occasional need to proceed on foot.

Appendix B

Procedure for Dealing with Statutory Undertakers Defective Surface Apparatus

1) When a highway authority inspector identifies any undertaker's defective surface apparatus the details are recorded and passed to the appropriate utility using the Symology Insight UDSA recording / reporting process.

2) If the inspector considers the defect to present a safety hazard requiring urgent attention, the utility can be contacted by phone direct and the details added to Symology insight to complete the reporting procedure

3) From this point, the undertaker takes full responsibility for any third party liability claims made as a result of the defective apparatus.

4) If the statutory undertaker has not responded within 2 hours the highway authority may take appropriate action and reclaim costs from statutory undertaker.

5) The defect should be repaired, where practicable, within 24 hours.