ABERDEEN CITY COUNCIL

Road Safety Inspection Manual

August 2021

Document Revision History

Revision No.	Date of issue	Reason For Issue
1.0	Sept 21	Replacement for the 2018 Safety Inspection Manual

Contents

Purpose

The road safety inspection manual sets out how Aberdeen City Council inspects its adopted roads assets in order to fulfil its statutory obligations. The manual is based heavily on the SCOTS (Society of Chief Officers of Transportation in Scotland) template manual for safety inspections and has been edited to reflect the Aberdeen City Council road network, as well as the risk appetite of the Aberdeen City Council Roads service. The defect responses set out in this manual are equal to, or greater than, those set out in the SCOTS safety inspection manual.

Safety inspections are designed to identify defects likely to cause danger or serious inconvenience to users of the network or the wider community. Such defects include those that require urgent attention as well as those where the locations and sizes are such that longer periods of response are appropriate.

The Safety inspection regime forms a key aspect of Aberdeen City Council's strategy for managing liability and risk. The computerised inspection system used by Aberdeen City Council effectively manages the inspection patterns and frequency. Built in safeguards minimise the chance of inspections being missed.

When a repair is made to correct a safety defect that has been deemed to be high risk, the only consideration made will be to eliminate the risk associated with that defect as quickly and safely as reasonably possible. Repairs made may be temporary or permanent and may not necessarily be made using the same materials as those surrounding the defect, especially in areas of non-standard road or footway construction material.

This inspection manual provides guidance and advice to support the objective risk assessment of defects.

Legislative Requirements

The methodology described in this document has been designed to comply with the following, current, legislative requirements:

Roads (Scotland) Act 1984

The Roads (Scotland) Act 1984 Section 1, states that "…a local roads authority shall manage and maintain all such roads in their area as are for the time being entered in a list (in this Act referred to as their "list of public roads") prepared and kept by them under this section."

Common Law – Duty of Care

Road Authorities have a Duty of Care under Common Law. The criteria commonly used by the courts to determine if a defendant is liable are:

1. The harm which occurred must be a reasonably foreseeable result of the defendant's conduct;
    - Was the authority aware of the defect?
    - Was the route inspected within assigned timescales?
    - Experience of similar defects and the deterioration/degradation rates? Will the defect deterioration/degradation cause the likelihood and/or impact of the defect to increase before the next inspection?
    - Have there been similar incidents on the authorities' network or is the authority aware of similar incidents occurring?
2. It is fair, just and reasonable to impose liability?
    - Did the authority assess, prioritise and maintain the defect in accordance with their Maintenance Strategy/Manual or equivalent documents?
    - What was the defect risk and priority?
    - If necessary, what action(s) had been taken to repair the defect? What was the timescale for the repair(s)?
    - Was the defect repaired within specified timescales?

Well Managed Highway Infrastructure – a Code of Practice

On 28th October 2018, *Well Maintained Highways* – the previous code of practice governing roads assets - was superseded by *Well Managed Highway Infrastructure*. The new code of practice removed pre-defined, prescriptive, intervention levels for defects, as well as defined action timescales and inspection frequencies. These were replaced by a "risk-based approach" which encourages authorities to consider not just the defect, but also the context of the defect when making decisions regarding response timescales and intervention actions.

New Roads and Street Works Act 1991 (NRSWA)

Section 140 of the New Roads and Street Works Act 1991 (NRSWA) places a duty on undertakers (utilities) to maintain their apparatus to the reasonable satisfaction of the Roads Authority. However, recent case law has shown that Roads Authorities have a joint liability with the undertakers.

When an inspection identifies a particular piece of defective apparatus that is deemed to be unsafe and requiring attention, notification will be sent to the appropriate party requiring them to carry out remedial action under Section 140 of the Act. This notification should detail the apparatus and its location.

If remedial action is not carried out within a reasonable timescale, the Aberdeen City Council may carry out repairs themselves and recharge their reasonable costs (as per Section 140 of the NRSWA 1991).

Inspector Training and Competency

Road authorities must ensure that Road Safety Inspectors are competent to carry out safety inspections. To fulfil this requirement, Aberdeen City Council inspectors receive a mixture of in-house and external training in safety inspecting. External training courses are selected based on content and approval by relevant body such as SCOTS, IHE or CIHT.

Market availability for courses can vary and officers assess the available courses whenever there is a requirement for inspector training. Internal training will be provided on Council procedures and systems. Records of external training courses completed will be held by the Health, Safety and Training officer.

Changes to relevant codes of practice, or industry practice changes, may necessitate additional training of inspectors. Management monitor such changes and instruct further training where a need is identified.

Safety Inspections

Planned Cyclic Safety Inspections

The Safety Inspection regime forms a key aspect of the road authority's strategy for managing liability and risk. Its purpose is to systematically identify defects which could be hazardous (to any user of the road including drivers, pedestrians, equestrians and cyclists) so that an effective repair can be carried out within an appropriate response time, determined by the level of risk the defect poses.

Cyclic Safety Inspections are carried out to specified frequencies, dependent upon the hierarchy of each section of road (although frequencies can be increased where other factors deem an increased frequency to be necessary). Hierarchies are discussed in the *Functional Hierarchies* section of this manual.

Safety inspections may be carried out on foot, from slow-moving vehicles or from other mode of transport, such as bicycle, as appropriate. In areas where footfall is high or where parked vehicles prevent visibility, walked inspections are favoured. The method for each inspection will be selected in accordance with a risk-based approach and will consider the inspection requirements of each site on its own merits. Traffic type, accessibility and footfall will all be considered when selecting inspection methodology.

Objectives of Safety Inspections

- To minimise the risk of injury and disruption to road users, as far as is reasonably practicable
- To provide a regular, structured inspection of the public road network, within available resources
- To deliver a consistent, reliable response to identified defects, within available resources
- To maintain accurate and comprehensive records of inspections and response
- To provide a clear, accurate and comprehensive response to claims.

During safety inspections, observed defects that present any foreseeable degree of risk to users will be recorded. The degree of deficiency in the road elements will be crucial in determining the nature and speed of response. Judgement will always need to take account of all relevant circumstances. For example, the degree of risk from a pothole depends upon not only its depth, but also its surface area, location within the road network and other factors such as the volume and speed of traffic.

Safety Inspection Routes

Routes for safety inspections are not pre-defined. The Aberdeen City Council network is split into areas and an inspector is assigned to each area. Inspectors may be rotated between areas to help ensure consistency of inspection, as well as reducing the possibility of complacency during the inspection process. The Council asset management system shows the inspection status of each road in each area on the inspectors' mobile device. The system allows the inspector to see when a road is due for inspection, if the

road is within its inspection tolerance or if a road is overdue inspection. This allows the inspector to manage their routine inspection workload, as well as requests for additional ad-hoc inspections.

Inspection Frequencies and Tolerances

Safety inspection frequencies are based upon the hierarchy of the road - Further explanation of road hierarchies can be found later in this manual.

Inspections Frequencies

- **Monthly** - twelve reasonably regularly spaced inspections will be carried out per year
- **Quarterly -** four reasonably regularly spaced inspections will be carried out per year
- **Six Monthly** - two reasonably regularly spaced inspections will be carried out per year
- **Annual –** one reasonably regularly spaced inspection will be carried out per year.

Inspection Frequency Tolerances

Frequency of inspection	**Monthly**	**Quarterly**	**Six Monthly**	**Annual**
Tolerance (working days)	+/- 5 days	+/– 10 days	+/–20 days	+/– 27days
Max period between inspection	36 days	100 days	200 days	392 days

Delays to Inspections

It may, on occasion, not be possible to carry out inspections for reasons outside Aberdeen City Council control. Examples of such scenarios are where severe weather, such as snow and ice, make it impossible to see defects, or where road closures or occupation limits access to areas for inspection. When an inspection cannot be completed, the reason for this will be noted and recorded. During periods of severe weather, Aberdeen City Council will decide on the viability and safety of undertaking safety inspections. The reasoning for this will be recorded.

If a monthly inspection is more than 2 weeks late then that inspection will be missed and an inspection carried out at the next due date. The reason for this will be recorded. In all other cases where inspection tolerances are exceeded, the manager responsible for inspection staff will decide whether the programme can be accelerated, or the inspection programme adjusted.

Staff absences will be covered by a suitably trained substitute inspector.

Ah-hoc Safety Inspections

Inspectors may be instructed to undertake ad-hoc safety inspections. These will generally be in response to a third-party report of a nature which is deemed to merit inspection of the reported defect to determine whether a reactive repair is required, and if so on what timescales the repair will be required. Ad-hoc inspections may also be required due to unforeseen incidents or events, including exceptional weather events.

Ad-hoc inspections are assigned to inspectors through the Council asset management system.

The risk assessment methodology for ad-hoc inspections is the same as for routine safety inspections and such inspections will be recorded. Where an ad-hoc inspection covers a whole road, the road shall not require further inspection until the normal period between its inspections has elapsed.

All actionable safety defects discovered during ad-hoc safety inspections shall be recorded.

Where a defect is reported by a member of the public, it will be inspected within 5 working days. Such defects will be assessed as per any found during a routine inspection, as outlined in the assessment process section of this manual.

Functional Hierarchies

The code of practice – *Well Managed Highway Infrastructure* – recommends that authorities should develop road and footway hierarchies taking into consideration local factors. Below are the hierarchies developed by Aberdeen City Council for its network based upon the code of practice and altered to fit the Aberdeen City Council network. Each adopted road within the city limits is assigned a hierarchy. The inspection frequencies for each hierarchy of road or footway are also included in the table below. Cycle lanes are inspected as per the frequency of the road or footway they form part of/are attached to. Cycle paths that are remote from any carriageway will be inspected on a six-monthly frequency.

Roads Hierarchy

Carriageway Category	Hierarchy Description	Type of Road General Description	Description	Inspection Frequency
1	Motorway	N/A	N/A	N/A
2	Strategic Route	Principal 'A' Roads between Primary Destinations	Strategic roads, generally with little frontage access or pedestrian traffic. Speed limits generally 40mph or higher.	Monthly
3a	Main Distributor	Primary Urban Network and Inter-Primary links. Short to medium distance urban traffic.	Routes between strategic routes and linking urban centres to the strategic network. In urban areas speed limits are generally 40mph or lower.	Monthly
3b	Secondary Distributor	Classified Roads and unclassified urban bus routes carrying local traffic with frontage access and frequent junctions.	These roads generally have 30mph speed limits and high pedestrian activity and will often link different housing estates etc	Monthly
4a	Link Road	Roads linking Secondary Distributor Network with local access roads. Frequent junctions.	Residential or industrial inter-connecting roads, generally with 30mph speed limit.	Quarterly
4b	Local Access Road	Roads serving limited numbers of properties carrying only local access traffic.	Generally residential loop roads or cul-de-sacs.	Annual

Footway Hierarchy

Category	Category name	Description	Inspection Frequency
1a	Prestige Walking Zones	Very busy areas of town centres with high public space and street scene contribution.	Monthly
1	Primary Walking Routes	Busy urban shopping and business areas and main pedestrian routes.	Monthly
2	Secondary Walking Routes	Medium usage routes through local areas feeding into primary routes, local shopping centres etc.	Quarterly
3	Link Footways/Footpaths	Linking local access footways through urban areas and busy rural footways.	Six Monthly
4	Local Access Footways/Footpaths	Footways associated with low usage, short estate roads to the main routes and cul-de-sacs.	Annual

The above map illustrates the Aberdeen City Council Road network with roads coloured by hierarchy.
This map is not current and is for illustrative purposes only.

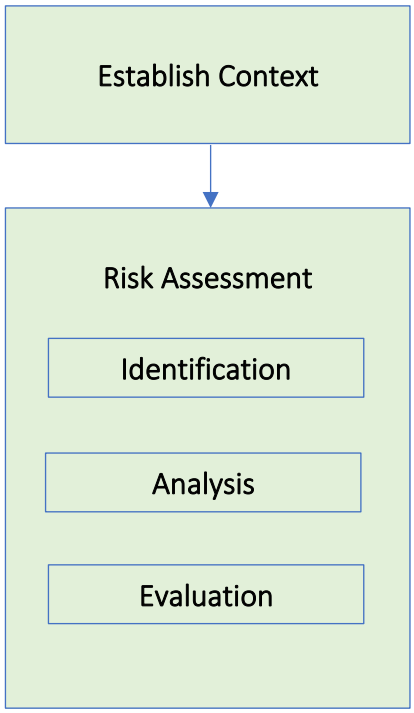
Hierarchy: 2 3a 3b 4a 4b

Defect Identification and Risk Assessment Process

Inspectors undertaking safety inspections or responding to reported incidents are required to use judgement in assessing the risk posed by reported defects. 'Well-Managed Highway Infrastructure: A Code of Practice' recommends that roads authorities adopt a system of defect risk assessment for determining the response categories to road defects.

The risk-based approach of the current code of practice removed the defined intervention levels that had been present in the previous code. The rationale for removing these is that the same defect will represent a different level of risk in a different context.

Aberdeen City Council have adopted the SCOTS recommended procedure for risk assessment based on the ISO31000 Risk Management Process. In undertaking assessment of safety defects, the steps shown below are applicable.



Establishing Context

Establishing context requires the inspector to utilise experience and knowledge during the inspection to assess road characteristics, such as giving consideration to environment (speed limit, width, rural/urban, road hierarchy, visibility, bend, hill - incline/decline, road camber/crossfall, etc.), relevant road user types (pedestrians, cyclists, horse riders, cars, LGV's, HGV's, PSV's, etc.), traffic volumes, maintenance history, historical incidents/claims/complaints (e.g. experience/knowledge of similar hazards being a contributory

factor to incidents/claims within the authority or a neighbouring authority), demographics and key local amenities (proximity to doctors surgery, hospitals, shopping areas, schools, etc.).

Risk Assessment

Hazard Identification

The Risk Identification stage involves the inspector identifying road asset defects (hazards) which might pose a risk to road users i.e. lead to a negative consequence. The following are lists of examples of hazards that inspectors should consider risk assessing during the inspections, however it should be noted that the list is not exhaustive and the inspector is expected to identify all relevant hazards. Inspectors must utilise experience and judgement, the intention is not to limit identification of hazards to those on this list. Only hazards that can be seen at the time of inspection are assessed and inspectors are unable to move static objects such as bins, parked vehicles, skips etc, which could hide potential defects

Carriageway

- Carriageway surface defects
- Abrupt level differences in running surface
- Edge deterioration of the running surface
- Excessive standing water, water discharging onto or flowing over the road (as covered by the Roads (Scotland) Act, 1984.)
- Blocked gullies and obstructed drainage channels which could lead to ponding or flooding
- Debris and/or spillages likely to present a hazard
- Missing road studs
- Badly worn “Stop”, “Give Way”, double continuous white lines, or markings associated with Traffic Road Orders (TROs)
- Missing or significantly damaged ironworks/utility covers

Footway and Cycle path

- Footway surface defects
- Excessive standing water and water discharging onto, or flowing across the footway/cycle path
- Dangerous rocking paving slabs
- Large cracks of gaps between paving slabs
- Missing or significantly damaged ironworks/utility covers
- Debris and/or spillages likely to present a hazard
- Damaged kerbs

Street Furniture

- Damaged vehicle restraint systems, parapets, handrails or guardrails
- Damaged boundary fences which could allow children or animals to gain access
- Damaged, missing or faded signs, particularly those instructing traffic behaviour such as “Give Way”, “Stop” and speed limit signs
- Damaged lighting columns, cabinets, control pillars or wall mountings
- Exposed live electrical apparatus

Other assets

- Trees / vegetation will be inspected for issues such as
    - Encroachment
    - Visibility obstruction
    - Neighbouring property damage to adopted assets
    - Creation of trip hazards

  Where necessary, notices may be issued under Section 91, of the Roads (Scotland) Act 1984 where hedges, trees or shrubs are growing on adjacent land to adopted road and are causing safety defects by overhanging the carriageway or footway. Safety Inspectors receive some basic arboricultural guidance but a qualified arboricultural advisor carries out an inspection when specialist knowledge is required. Their advice is also sought before any work is carried out on tree roots causing a problem to a footway surface. Qualified tree surgeons will be used when conducting tree maintenance work for ACC.
- Embankment slippage leading to the creation of a hazard or where the movement of materials undermines road construction and may lead to localised collapse
- Rocks or rock faces which constitute hazards to road users
- Damaged road structures such as bridges, retaining walls etc may require to be passed to the structures team for specialist assessment

Historical Features

Many roads have been adopted with historic features that would not be acceptable in a current road design. This might include surfaces (such as cobbles), steps, cellar openings or drainage arrangements that could present potential trip situations or could be viewed as posing elevated risk. These should not be recorded as defects, as in law the road has been adopted with these encumbrances and the public must take appropriate care around them.

Risk Analysis

When assessing risk, it is vital that outcomes are not pre-judged and that assessments are objective. To aid this process, consideration is given to both a risks’ likelihood and its consequences.

Assessing Risk Likelihood

The table below should be used to assess a risks likelihood. It contains descriptions of the possible likelihood of encountering the hazard, quantified on a scale of 'remote' to 'almost certain'.

The information ascertained in the previous step of the process – Establishing Context – should inform the inspector's judgement in assessing the likelihood of a road user encountering the hazard.

Risk Likelihood Table

Likelihood/Probability	Likelihood Description
Almost Certain	Will undoubtedly happen, quite possibly daily
Likely	Will probably happen given time, but not be a persistent issue
Possible	May occasionally happen, but with a long potential recurrence period
Unlikely	Not expected to happen, but remains possible
Remote	Improbable, though not impossible

Assessing Risk Consequence (Impact/Severity)

The table of consequences below should be used to assess the **most probable** (not worst possible) consequence of a road user encountering the hazard. Consequences should be framed in the context of what is "reasonably foreseeable" in terms of the extent of the impact on service objectives, finance, people, and reputation. The table contains descriptions of the possible consequences of encountering the hazard, quantified on a scale ranging from 'negligible' to 'catastrophic'.

Risk Consequence (Impact/Severity) Table

Consequence (Impact/Severity)	Description			
	Impact on Service Objectives	Financial Impact	Impact on People	Reputational Impact
Catastrophic	Unable to function – inability to fulfil obligations	Severe financial loss	Death	Highly damaging -
Major	Significant impact on service provision	Major financial loss	Severe injury, major or permanent harm	Major adverse publicity and major loss of confidence
Moderate	Service objectives partially effected	Significant financial loss	Medical treatment required, semi-permanent harm up to one year	Some adverse publicity and legal implications
Minor	Minor impact on service objectives	Moderate financial loss	First aid treatment, non-permanent harm up to one month	Some public embarrassment, no damage to reputation
Negligible	Minimal impact and no service disruption	Minimal financial loss	No obvious ham/injury	No interest to the press, internal interest only

All hazards identified must be assessed against each of the four consequence categories (Impact on service objectives, financial impact, impact on people and reputational impact) contained in table above; the consequences with the **highest severity** of the four categories should be considered in the risk analysis.

It should be noted that Inspectors are not required to record their reasons for selecting a particular category of likelihood and impact, only the result of this assessment. The rationale for this is that to do so would slow down the inspection process and make it impractical to carry out with the current level of available resource.

Risk Evaluation

The outcomes from the likelihood and consequence assessments (detailed above) are used to determine the risk category, and therefore the appropriate response, using the risk matrix table, below.

Consequence / Likelihood	Negligible	Minor	Moderate	Major	Catastrophic
Remote	NR	NR	P4	P3	P1
Unlikely	NR	NR	P4	P3	P1
Possible	NR	P4	P3	P2	P1
Likely	NR	P3	P2	P2	P1
Almost Certain	NR	P2	P2	P1	P1

Risk Category and Response Priority

Risk Category	Response Priority
Critical Risk	Priority 1 response
High Risk	Priority 2 response
Medium Risk	Priority 3 response
Low Risk	Priority 4 response
Negligible Risk	No response*

When carrying out risk analysis, inspectors should always follow the risk assessment process which will produce an objective risk rating and not be influenced by response times. It is important that inspection remain objective and consider what is most likely to happen, as opposed to what the worst-case scenario would be.

* Defects which are not actionable safety defects may be noted for future monitoring or put forward for consideration as part of a programme of planned works.

Intersections and Multiple Road User Types

The hazard context considers the location and the types of road users who could be impacted by a defect. Inspectors should consider the different impacts and consequences for each road user type – pedestrians, cyclists, vehicle drivers and so on. Where there are intersections between routes, the hierarchy of each should be considered and responses should be based upon the outcome of the risk assessment of the defect assuming the higher of the two hierarchies. For example, a defect in a junction between a category 3b road and 4a road should be assessed as a 3b as this is the higher of the two categories.

Inspection Records

Each inspection carried out – routine or ad-hoc – is recorded in the Aberdeen City Council roads asset management system. This records the date and time of the inspection as well as whether any actionable safety defects were found during the location. Defects which are not found to require a response will not be recorded during inspections as doing so would unnecessarily slow the inspection process and jeopardise the services ability to complete all required inspections with the available resources.

Response Priority Table

Response Priority	Response Timescale
Priority 1 response	Immediate action – defect should not be left unattended
Priority 2 response	Within 2 working days
Priority 3 response	Within 7 working days
Priority 4 response	Within 28 working days

Where works are deemed not to require a priority response, the inspector may note observations about an asset which can be considered when the programme of capital works is drawn up. Such defects may be condition related, but not effect the safety of the asset.

Health and Safety

When conducting inspections, the health and safety of the public and Council workforce is of utmost importance. The degree of risk involved in completing an inspection can vary significantly depending on the nature of the road being inspected. For example, when inspecting a national speed limit dual-carriageway, the presence of high moving vehicles may necessitate the use of measures such as inspection from a crash cushion travelling at relatively low speed.

Generally, inspections are carried out from slow moving vehicle or on foot with the chosen method being dependant on what is safe and appropriate for the location being inspected. Where an inspector is alone they must always adhere to the Councils lone working policy and procedures.

Inspectors must always wear appropriate PPE for the task and location where they are working. Full details of PPE requirements are found in the Safe System of Work, section 319 – Use of Personal Protective Equipment.

Inspectors will be equipped with a mobile device capable of calls and text messaging. These must never be used while driving unless to make an emergency call to 999 or 112 where it is unsafe or impractical to stop.

When parking, inspectors should try to park off the live carriageway wherever possible. If this cannot be achieved, vehicles should be parked in such manner as to maintain clear visibility in both directions. Roof mounted beacons should be switched on. Traffic must never be forced across continuously solid white lines as a result of the inspector's vehicle.

Category 1 defects

If a defect is assessed as a serious hazard (Critical Risk - Priority 1 response) to road users, the inspector should remain at the hazard site until the risk has been made safe. Where possible, a cordon should be placed around the defect.

Equipment

All inspection vehicles should carry at least three 750mm traffic cones which should be in good, clean condition.

Cold form tar should be carried in the inspector's vehicle and should be replaced as and when necessary; this material will solidify in its packaging if stored for a prolonged period.

Inspectors should carry a device capable of taking images – this can be a phone or tablet and does not need to be a camera.

A device with GPS to accurately located defects with access to the Council asset management system is required.

Inspectors should carry in their vehicles a copy of:

- This guidance document
- New Roads & Street Works Act 1991 – Code of Practice for Inspections
- Safety at Street Works and Road Works, A Code of Practice