
NORTH AYRSHIRE COUNCIL

24 September 2019

Cabinet

Title:	Road Asset Safety Inspections
Purpose:	To seek Cabinet approval of the proposed new Road Asset Safety Inspection Policy.
Recommendation:	Cabinet is asked to approve the new Road Asset Safety Inspection Policy attached at Appendix 1.

1. Executive Summary

- 1.1 The Roads (Scotland) Act 1984 states that a local roads authority shall manage and maintain all such roads in their area that are included in the list of public roads held by the authority. These are commonly referred to as “adopted roads” and the inspection policy referred to in this paper applies to these.
- 1.2 The ‘Well-Managed Highway Infrastructure: A Code of Practice’ recommends a risk-based approach to managing all aspects of the road network which includes inspection and repair.
- 1.3 The Council’s current road safety inspection policy was prepared in accordance with the previous guidance contained in “‘Well-Maintained Highways’ the Code of Practice for Highway Maintenance which has now been replaced by Well-Managed Highway Infrastructure: A Code of Practice.
- 1.4 A refreshed Road Asset Safety Inspection Policy, in accordance with the current guidance – “Well-Managed Highway Infrastructure: A Code of Practice”, has been prepared and is attached as Appendix 1 to this paper. The suggested Policy outlines proposed inspection arrangements, proposed frequencies of inspection and response times to address any identified road defects and if approved will be implemented from 1 October 2019.

2. Background

- 2.1 Following the introduction of the new Well-Managed Highway Infrastructure: A Code of Practice, the Society of Chief Officers of Transportation in Scotland (SCOTS) have developed inspection guidelines with the aim of achieving a consistent approach to road inspections across Scotland. Recommendation 6 within the Code of Practice refers to Consistency with Other Authorities. Officers have reviewed the SCOTS guidance and

have developed a new Road Asset Safety Inspection Policy for adoption in North Ayrshire and this is attached in Appendix 1.

- 2.2 The 'Well-Managed Highway Infrastructure: A Code of Practice' recommends that roads authorities adopt a risk-based approach to all aspects of road maintenance. The Road Asset Safety Inspection Policy (Appendix 1) specifically relates to a risk-based procedure for conducting road safety inspections - the area of service that results in our greatest number of claims.
- 2.3 A Risk Based Approach is also recommended by the Institute of Highway Engineers in their guidance on managing risk and liability, 'Well Managed Highway Liability Risk'.
- 2.4 North Ayrshire's existing "Guidance Document for Road Safety Inspections and Defect Categorisation" currently follows a risk-based approach for categorisation of safety defects. Adopting the SCOTS inspection guidelines, allows the Council to demonstrate a reasonable approach in fulfilling our legal responsibilities with regard to inspection and maintenance of our adopted roads.
- 2.5 Road Safety Inspections are designed to identify and repair defects to minimise, as far as reasonably practicable, the exposure to danger or serious inconvenience to users of the road network or the wider community. Such defects include those that require immediate attention, as well as those where the defect locations and nature are such that longer periods of response are possible. Having a robust process for prioritising responses to identified defects is therefore crucial.
- 2.6 The Council has finite resources for managing and maintaining the road network. As well as its critical safeguarding purpose, the implementation of this risk-based approach will improve efficiency and provide greater value for money through more appropriate categorisation of defects and responses based on risk to road users that is likely to lead to a reduction in the number of temporary repairs and an increase in permanent programmed work. As well as being more cost effective, this policy should have a positive impact on network road condition in the longer term.
- 2.7 The Road Authority must ensure that all Road Asset Safety Inspectors are competent in carrying out safety defect inspections. The policy adopts the SCOTS Risk-based Approach to Safety Defect Inspections Training and Assessment provision for this purpose. In order to facilitate the training, it is proposed to introduce the new Road Asset Safety Inspection Policy from 1 October 2019.
- 2.8 Currently, the Council has an adopted road length of 1036km and over 1,000km of footways / footpaths / cycleways and cycle paths.
- 2.9 An effective inspection regime requires having an appropriate hierarchy to which the local network assets are categorised. Guidance on the appropriate hierarchy for carriageways, footways and cycleways / cycle tracks is given in the Code of Practice which the proposed policy adopts. Inspection frequencies are then set for each level of the hierarchy and, as a result, a programme of inspections is developed for the stated asset types.
- 2.10 There are minor departures from the SCOTS guidance in relation to response times to defects. It is proposed that North Ayrshire will continue to respond to Category 1 defects within 4 hours rather than the recommended 24 hours on both the Mainland and the

Island of Arran as this is current practice and is supported by standby arrangements. For Category 1 defects identified on the Island of Cumbrae, it is proposed that the SCOTS recommended response time of 24 hours will be adopted to establish a realistic response time considering location and available resources.

- 2.11 There are also changes to the response times established in the current Guidance Document for Road Safety Inspections and Defect Categorisation. The response times for Category 2 defects will be reduced from 7 working days to repair within 5 working days as established in the SCOTS guidance document. This will provide an improved response to those defects considered to represent a high risk to road users. The response time to Category 3 defects will be increased from 30 days to repair within 60 days. Although this is a significant increase in response time to Category 3 defects, currently, less than half of Category 3 defects are responded to within 30 days, with some work instructions taking over 100 days to complete. The adoption of the SCOTS recommended response times for these defects shall enable resources to be allocated and works to be programmed to support our aim to undertake first time permanent repairs. It is also anticipated that a significant number of defects considered to be Category 3 under the current risk matrix will be re-prioritised as Category 4 under the new SCOTS risk matrix, enabling low risk defects to be addressed through planned maintenance rather than a reactive response.

3. Proposals

- 3.1 Cabinet is asked to note that the proposed Road Asset Safety Inspection Policy has been developed based on the SCOTS Road Asset Safety Inspection Strategy template with the aim of achieving a consistent approach to road inspections across Scotland.
- 3.2 Cabinet are asked to approve the proposed Road Asset Safety Inspection Policy and to agree it will be introduced from the 1 October 2019 to enable the SCOTS Risk-based Approach to Safety Defect Inspections training to be completed prior to implementation.

4. Implications/Socio-economic Duty

Financial

- 4.1 The implementation of this new policy should provide greater value for money through more appropriate categorisation of defects and responses based on risk to road users. This may lead to a reduction in the number of temporary repairs and an increase in permanent programmed work. As well as being more cost effective, this policy should have a positive impact on network road condition.

Human Resources

- 4.2 Staff training in the SCOTS risk-based approach has already been completed, with 2 members of staff within the Asset Management team assessed as competent in its delivery. This enables training and assessment of inspector competency to be carried out with internal resources.

Legal

- 4.3 The Council have a statutory duty under section 1 of the Roads (Scotland) Act 1984 “to manage and maintain all such roads in their area that are included in the list of public roads held by the authority”

Equality/Socio-economic

- 4.4 None.

Environmental and Sustainability

- 4.5 None.

Key Priorities

- 4.6 The Road Asset Safety Inspection Policy supports the following Council Plan priorities:
- Effective infrastructure and digital connectivity
 - Vibrant, welcoming and attractive places

Community Wealth Building

- 4.7 None.

5. Consultation

- 5.1 The Risk and Insurance Team have been consulted in respect of the new Road Asset Safety Inspection Policy.
- 5.2 The Council’s Insurers (Zurich Municipal) have been consulted in respect of the new Road Asset Safety Inspection Policy.
- 5.3 The proposed Road Asset Safety Inspection Policy was considered by the Policy Advisory Panel on 05 September 2019.

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Background Papers

Well-Managed Highway Infrastructure – A Code of Practice



North Ayrshire Council
Comhairle Siorrachd Àir a Tuath

ROAD ASSET SAFETY INSPECTION POLICY

Version 1.0

July 2019

Document Information

Title	Road Asset Safety Inspection Policy
Author	Susan Macfadyen, Team Manager Network
Description	This document sets out North Ayrshire Council's policies and procedures for road safety inspection based on guidance provided by the Society of Chief Officers of Transportation in Scotland (SCOTS)

Document Control

Version	SCOTS Template Version	Date	Author	Changes from Previous Version
1.0	1.1	July 2019	S Macfadyen	

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Introduction

This Road Safety Inspection Policy has been developed with the primary aim of providing operational guidance to those officers responsible for managing road asset safety inspections. This is in order to encourage a consistent approach by utilising a formalised system that recommends the frequency of inspections as well as the method of assessing, recording and responding to defects in the road asset.

This Policy is based on the SCOTS Risk Based Approach (RBA) guidance and compiled using their Road Safety Inspection Strategy template.

'Well-Managed Highway Infrastructure: A Code of Practice'¹ has specific recommendations regarding inspections of all road elements. This Policy document specifically relates to the procedure for carrying out road safety inspections. Recommendation 7 of the code of practice is that Road Authorities should adopt a Risk Based Approach to all aspects of road maintenance.

A Risk Based Approach is also recommended by the Institute of Highway Engineers in their guidance on managing risk and liability, 'Well Managed Highway Liability Risk'².

The establishment of an effective regime of safety inspections is a crucial component of road maintenance in accordance with the Code of Practice, The Society of Chief Officers of Transportation in Scotland (SCOTS) seeks to encourage the benefits that will be gained by harmonising such procedures across Scotland. Recommendation 6 within the Code of Practice refers to Consistency with Other Authorities and is stated below:

"To ensure that users' reasonable expectations for consistency are taken into account, the approach of other local and strategic highway and transport authorities, especially those with integrated or adjoining networks, should be considered when developing highway infrastructure maintenance policies."

This Road Asset Safety Inspection Policy has been developed in partnership with the roads authorities associated through SCOTS to focus on safety inspections and categorisations and is now being made available for all Scottish roads authorities to consider adopting for their network.

Officers across all Scottish Local Authorities recognise that Councils are currently faced with delivering services within an environment of increasing fiscal austerity and are aware of the

¹ 'Well-Managed Highway Infrastructure: A Code of Practice', UKRLG, October 2016

² 'Well Managed Highway Liability Risk', IHE, March 2017

benefits that can be achieved by adopting a common approach which follows the principles of 'Well-Managed Highway Infrastructure'.

Adoption of this policy will provide a consistent methodology for the management of the road network, while focusing on delivering a proactive programme of permanent repairs. It is intended that its implementation will also allow performance to be monitored and reviewed, implementing any necessary improvements identified through its use.

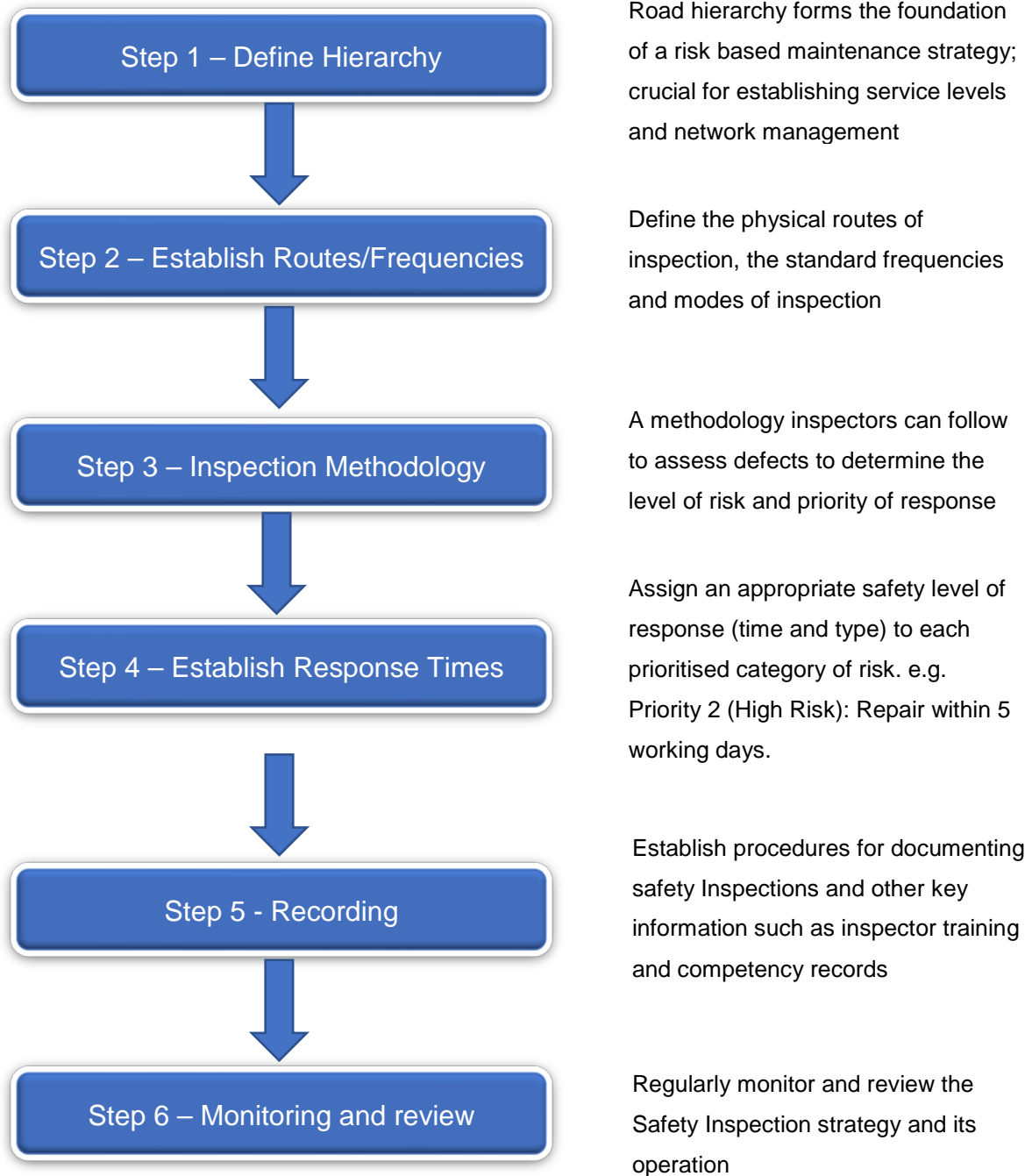
Legislative Requirements

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."

North Ayrshire Council has a statutory duty to manage and maintain public roads within its boundary. The Council's list of public roads represents 1036km of carriageways and nearly 1000km of footways and footpaths (April 2019).

Overview

The safety inspection policy requires several key steps, explained in detail within this document. They are:



Hierarchy

“Well-Managed Highways Infrastructure – Code of Practice” (WMHI CoP) indicates that a network hierarchy is the foundation of a risk based maintenance strategy; crucial for establishing service levels and network management.

The hierarchies contained within the WMHI Code of Practice are adopted as described in Tables 1 to 3 below.

Carriageways

Table 1 below provides descriptions for carriageway categories based on those in ‘Well-Managed Highway Infrastructure: A Code of Practice’.

Table 1 **Carriageway Hierarchy**

Category	Hierarchy	Description
1	Strategic Route	Routes for fast moving long distance traffic with little frontage access or pedestrian traffic. Speed limits generally in excess of 40mph with few junctions. Parked vehicles are generally not encountered out with urban areas.
2	Main Distributor	Routes between strategic routes and linking urban centres to the strategic network with limited frontage access. In urban areas speed limits are usually 40mph or less.
3	Secondary Distributor	In residential and other built up areas these roads have 20 or 30 mph speed limits and very high levels of pedestrian activity with some crossing facilities including zebra crossings. On- street parking is generally unrestricted except for safety reasons. In rural areas these roads link the larger villages, bus routes and HGV generators to the Strategic and Main Distributor Network.
4	Link Road	In urban areas these are residential or industrial interconnecting roads with 20 or 30 mph speed limits, random pedestrian movements and uncontrolled parking. In rural areas these roads link the smaller villages to the distributor roads. They are of varying width and not always capable of carrying two-way traffic.
5	Local Access Road	In rural areas these roads serve small settlements and provide access to individual properties and land. They are often only single lane width and unsuitable for HGVs. In urban areas they are often residential loop roads or cul-de-sacs.

Footways

Table 2 below is based on the recommendations of 'Well-Managed Highway Infrastructure: A Code of Practice' and should be used as a starting point when allocating a footway / footpath to a particular category.

The following should also be taken into consideration:

- pedestrian volume,
- designation as a traffic sensitive pedestrian route,
- current usage and proposed usage,
- contribution to the quality of public space and streetscene,
- age and distribution of the population, proximity of schools or other establishments attracting higher than normal numbers or specific groups of pedestrians,
- accidents and other risk assessments and
- character and traffic use of adjoining carriageway.

Table 2 **Footway Hierarchy**

Category	Category Name	Description
1	Prestige & Primary Walking Routes	Very busy areas of town centres with high public space and Streetscene contribution. Busy urban shopping and business areas and main pedestrian routes, including links to significant public transport locations.
2	Other Footway/Footpath Routes	Footways/Footpaths that are inspected at the same time as the adjacent carriageway. Includes medium usage routes through local areas feeding into primary routes, local shopping centres etc. and linking local access footways/footpaths through urban areas and busy rural footways.
3	Footpaths	Remote footpaths

Cycle Routes

Cycle routes are categorised by location and a proposed hierarchy is shown in Table 3 below.

Table 3 **Cycle Route Hierarchy**

Category	Description
1	Cycle lane forming part of the carriageway, commonly a strip adjacent to the nearside kerb. Cycle gaps at road closure point (no entry to traffic, but allowing cycle access).
2	Cycle track - a designated 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.
3	Cycle trails, leisure routes through open spaces

Road Network Assessment

It is important that the road network categorisation reflects the needs, priorities and actual use of the network and infrastructure assets.

The carriageway and footway networks have been assessed by experienced roads officers and categorised in accordance with the hierarchy definitions in the Code of Practice utilising local knowledge taking into account local use, links to schools, public transport routes, access to leisure facilities and proximity to sheltered housing and medical centres.

Cycle routes have not yet been categorised but work is underway to complete initial condition assessments prior to establishing an inspection hierarchy for the National Cycle Network.

The following personnel were involved in establishing/reviewing the road network categories:

Name/Role	Experience	Qualifications/Training
Team Manager Network	Over 25 years experience in a roads environment	MSc Traffic Engineering & Transportation, MCIHT
Team Leader Asset Management	Over 10 years experience in Roads asset management	HNC Civil Engineering
Asset Inspector	Experience in roads operational environment, up to 3 years experience as road inspectors	IHE accredited Inspector Training
Road Inspectors		

The hierarchy review was completed in April 2019, maps utilised to establish hierarchies are retained within the Asset Management Section.

Review of Road Network Categories

Road networks are dynamic, therefore network categories will be regularly reviewed, considering any changes in the network as it evolves, to ensure that assigned categories remain relevant.

Review Frequency

The hierarchy will be reviewed every 3 years or when any significant changes are made to the road network, if earlier.

Continuity of safety and serviceability with neighbouring Roads Authorities

The adoption of the WMHI code of practice hierarchy and common SCOTS safety inspection methodology should, while allowing for management of hierarchies with regard to local circumstances, enable a high degree of continuity of safety and serviceability across neighbouring authorities.

Inspection Frequencies

North Ayrshire Council has adopted inspection frequencies based on the the 'Well-Managed Highway Infrastructure: A Code of Practice' Frequencies for safety inspections as follows:

Table 4 Frequency of Inspection – Carriageways

Category	Hierarchy Description	Frequency
1	Strategic Route	Monthly
2	Main Distributor	Monthly
3	Secondary Distributor	Monthly
4	Link Road	Quarterly
5	Local Access Road	Annually

Table 5 Frequency of Inspection – Footways & Footpaths

Category	Category Name	Frequency
1	Prestige and Primary Walking Routes	Monthly – With adjacent carriageways
2	Other Footway/Footpath Routes	With adjacent carriageways
3	Footpaths	Annually

Table 6 Frequency of Inspections – Cycleways

Category	Frequency
1	As adjacent carriageway
2	Shared footway/cycleways – as footway Other cycle tracks – Reactive
3	Reactive

The frequencies for inspections of cycle routes are based on adjacent carriageway and footway inspection frequencies. Work to establish an inspection schedule for the National Cycle Network is expected to be completed by March 2020. Inspections of other cycle tracks and leisure routes will be reactive in response to service requests or customer enquiries.

Safety Inspection Routes

Safety inspection routes are determined and managed within the council's road management system.

Inspection routes are based on geographical localities and are manually created based on maintenance hierarchy and inspection frequency required. Records are held within the road management system. Inspection routes are reviewed when network length alters due to adoption of new assets or inspection frequencies change due to hierarchy review.

Safety inspections on carriageways in rural locations and on high speed roads are undertaken in a slow moving vehicle with two personnel, one driving and the other inspecting. Within residential areas and heavily trafficked urban areas, walked inspections are required. Footway inspections are carried out at the same time as the associated carriageways. Shared footway/cycleways are inspected as footways. Bicycles are now provided to road inspectors to enable footpaths and remote cycleways to be inspected by bicycle, rather than on foot, where the road inspector chooses to do so. Urban inspections may also be carried out by bicycle subject to risk assessments being undertaken considering safety of both inspection personnel and other road users including pedestrians.

Inspection Tolerances

All road safety inspections will be carried out to the SCOTS recommended frequencies detailed in the following tables and should be completed within the tolerances shown in Table 7, as follows:

Table 7 **Inspection Tolerances**

Frequency of Inspection	Inspection Tolerances
Monthly	± 5 working days of the Due Date
Quarterly	± 10 working days of the Due Date
Annual	± 20 working days of the Due Date

Definition of above terms

- **Frequency of Inspection - Monthly** indicates that twelve regular spaced inspections will be carried out per year.
- **Frequency of Inspection - Quarterly** indicates that four regular spaced inspections will be carried out per year.
- **Frequency of Inspection - Annually** indicates that one regular spaced inspection will be carried out per year.
- **Due Date** is the programmed date of an inspection.

Staff Contingency and Alterations to the Inspection Programme

- Due to the nature of the weather in Scotland it is probable that the road surface will be wet with some elements of standing or running water whilst an inspection is in progress. However if the quantity of water is excessive or across the full width of the carriageway then the inspection should be abandoned and an entry should be made to document the circumstances.
- If an inspection Due Date falls during an extended period of absence e.g. inspector holiday or illness, then the inspection should be allocated to another suitably experienced member of staff who has the capacity to undertake the inspection.
- If and for reasons beyond the control of the roads authority (e.g. substantial snow fall), any inspection cannot be carried out in compliance with Table 4 the roads authority will decide on the viability of a safety survey being undertaken, taking into account the availability of staff and the prevailing weather conditions.
- As soon as reasonably practicable following the above events a deferred programmed safety inspection should be carried out on the affected length of road.
 - Where substantial unavoidable delays are incurred to other inspection frequencies the Asset Team Leader may assess the impact and adjust the programme.
 - A record must be kept of change decisions and reasons for them.

Safety Inspections

Road Safety Inspections are designed to identify defects likely to cause a hazard 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.

Planned Cyclic Safety Inspections

The Safety Inspection regime forms a key aspect of the road authority's strategy for managing liability and risk. Planned, cyclic safety inspections are carried out to identify defects which are hazardous (to any user of the road including drivers, pedestrians, equestrians and cyclists) so that an effective repair can be carried out within a predetermined response time.

The specified frequency of these inspections is dependent upon the **hierarchy category** of each section of road but may be varied after a documented risk assessment.

During safety inspections, observed defects that provide any foreseeable degree of risk to users will be recorded and processed for repair as appropriate following the methodology detailed in the 'Defect Risk Assessment' section of this document. 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 particular 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 usage of the road or footway.

The objectives of safety inspection activity are to:

- Minimise the risk of injury/harm and disruption to road users as far as is reasonably practicable,
- Provide a regular, structured inspection of the public road network, within available resources,
- Deliver a consistent, reliable response to identified defects, within available resources,
- Maintain accurate and comprehensive records of inspections and response and
- Provide a clear, accurate and comprehensive response to claims and Freedom of Information requests.

Items for Inspection

The following are examples of the types of defect which, when identified, should be assessed and an instruction for repair issued with an appropriate response time specified. The list identified below is not exhaustive.

Carriageways

- Surface defects
- Abrupt level differences in running surface
- Edge deterioration of the running surface
- Excessive standing water, water discharging onto and / or flowing across the road
- Blocked gullies and obstructed drainage channels or grips which could lead to ponding or flooding
- Debris and/or spillages likely to be a hazard
- Missing road studs
- Badly worn Stop, Give Way, double continuous white line or markings associated with Traffic Regulation Orders
- Missing or significantly damaged covers

Footways, Footpaths and Cycleways

- Surface defects
- Excessive standing water and water discharging onto and or flowing across the foot/cycleway
- Dangerous rocking paving slabs
- Large cracks or gaps between paving slabs
- Missing or significantly damaged covers
- Debris and / or spillages likely to be a hazard
- Damaged kerbs

Street Furniture

- Damaged vehicle restraint systems, parapets, handrails or guardrails
- Damaged boundary fence where animals or children could gain access
- Damaged or missing signs, such as Give Way, Stop, Speed Limit

Others

- Overhead wires in dangerous condition
- Sight-lines obstructed by trees and other vegetation,
- Trees in a dangerous condition
- Earthslips where debris has encroached or is likely to encroach the road or causing the road to fall away

- Rocks or rock faces constituting a hazard to road users
- Damaged road structures

Risk Management Process

Inspectors undertaking safety inspections or responding to reported incidents require to use judgement in determining likelihood and consequences of the observed or reported defects. This approach is consistent with 'Well-Managed Highway Infrastructure: A Code of Practice' recommendation that roads authorities adopt a system of defect risk assessment for determining the response categories to road defects. Taking a risk based approach, as per the above code of practice, means that there are NO prescriptive investigation or intervention levels to apply. The rationale for this is that the same defect will represent a different level of risk in a different context. By using a risk based approach, councils can reduce unnecessary reactive interventions and target more of their scarce resources towards programmed work that in the longer term will lead to an overall improvement of road condition.

By not providing any minimum or default standards, the code of practice supports the development of local levels of service in accordance with local needs, priorities and affordability.

Establishing Context

Establishing context requires the inspector to utilise experience and knowledge during inspections to assess the 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

Taking the context into consideration, Risk Assessment is a three step process:

1. Hazard Identification

An inspection item for which the inspector identifies road asset defects which may pose a risk to road users i.e. lead to a negative consequence. The types of asset to

be inspected and the potential associated hazards from defects are detailed in the Inspectors Operations Manual.

2. Risk Analysis

All risks identified through this process must be evaluated in terms of their significance which means assessing the **likelihood** of encountering the hazard and the **most probable** (not worst possible) **consequence** should this occur.

The procedure is designed to mitigate 'worst scenario' thinking and ensure an objective assessment is carried out. It is important therefore that the analysis is carried out in this defined step sequence to determine the appropriate level of risk and corresponding priority response.

Risk Likelihood

The risk likelihood is assessed with regard to how many users are likely to pass by or over the defect, consequently the network hierarchy and defect location are important considerations in the assessment.

The likelihood of encountering a hazard, within the established context, will be quantified on a scale of Remote to Almost Certain as follows:

Table 8 Risk Likelihood

Likelihood / Probability	Likelihood Description	
Almost Certain	Will undoubtedly happen	Daily/Weekly
Likely	Will probably happen, but not a persistent issue	Monthly/ 3 Monthly
Possible	May happen occasionally	6 Monthly/ Annually
Unlikely	Not expected to happen, but it is possible	10 Years
Remote	Improbable	20 Years

Risk Consequence

The risk consequence is assessed by considering the most probable (NOT worst possible) outcome (impact) should the risk occur and will be quantified on a scale of Negligible to Catastrophic as follows:

Table 9 Consequence (Impact/Severity) Score

Consequence (Impact/Severity)	Description			
	Impact on Service Objectives	Financial Impact	Impact on people	Impact on Reputation
Catastrophic	Unable to function, inability to fulfil obligations	Severe financial loss	Death	Highly damaging, severe loss of public confidence
Major	Significant impact on services provision	Major financial loss	Extensive injury, major permanent harm	Major adverse publicity, major loss of confidence
Moderate	Service objectives partially achievable	Moderate financial loss	Medical treatment required, semi-permanent harm up to 1 year	Some adverse publicity, legal implications
Minor	Minor impact on service objectives	Minor financial loss	First aid treatment, non-permanent harm up to 1 month	Some public embarrassment, no damage to reputation
Negligible	Minimal impact, no service disruption	Minimal financial loss	No obvious harm/injury	No interest to the press, internal only

3. Risk Evaluation

The risk category for a particular risk is the product of the risk impact and risk likelihood. It is this factor that identifies the overall seriousness of the risk and consequently therefore the appropriateness of the speed of response to remedy the defect. Accordingly, the priority response time for dealing with a defect can be determined by correlation with the risk category as shown in the risk matrix, Table 10:

Table 10 Risk Matrix

Consequence	Negligible	Minor	Moderate	Major	Catastrophic
Likelihood					
Remote (20 Years)	NR	NR	NR	NR	P3
Unlikely (10 Years)	NR	NR	P4	P4	P3
Possible (6 Monthly/ Annually)	NR	P4	P4	P3	P2
Likely (Monthly/3 Monthly)	NR	P4	P3	P2	P1
Almost Certain (Daily/Weekly)	NR	P3	P2	P1	P1

Risk Management Response

Having identified a particular risk, assessed the likelihood of it occurring and most probable consequence (impact/severity) and thus calculated the risk category, the appropriate response is identified in the form of a risk management (response) matrix, Table 11.

Table 11 Risk Management Matrix

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

Intersections and Multiple Road Users Types

The hazard context considers the location and the types of road users which could be impacted by the defect. Inspectors should consider the different impacts and consequences for each road user type (e.g. pedestrians, cyclists, vehicle drivers, etc.) and at intersections, consider the hierarchy of each route. Inspectors **must therefore assess the likelihood and consequence for each road user type and/or route hierarchy**. The priority of the response is based on the highest priority determined from the risk matrix (Table 10).

Utility Company Defects

Section 140 of the New Roads and Street Works Act 1991 places a duty on undertakers (utilities) to maintain their apparatus to the reasonable satisfaction of the Roads Authority who retain duty of care responsibility.

If a defective utility apparatus or works cause a hazard, the inspector will record this within the road management system and contact the appropriate utility company to report the defect to enable the undertaker to arrange repairs or to make safe the defect within appropriate timescales. In the case of Category 1 defects (those classed as dangerous requiring a 2 hour response from utilities) the road inspector will make safe if practicable. If a utility company cannot be identified or cannot attend within required timescales, the inspector will arrange for works to be carried out by the Council. The Council will seek to recover reasonable costs for such works from statutory undertakers.

Inspection Records

Information from safety inspections is recorded in the road management system. The data is recorded on site using electronic devices and downloaded to the system on return to the office. Inspection records include the date and time of the inspection, the name of the person carrying out the inspection and any defects identified.

Priority Response Times

Safety Levels

The Priority Response Times for each Defect Category are shown in Table 12 below.

Table 12 SAFETY LEVELS - Defect Categories and Priority Response Times

Defect Category	1	2	3	4	NR
Standard Response Time	4 Hours	5 Working Days	60 Working Days	Programmed work	No Action Required
Island of Cumbrae Response Times	24 Hours				

Category 1: Make safe within 4 Hours

North Ayrshire Council currently have both a winter and summer standby in place to ensure that resources can respond immediately to emergency situations. Category 1 defects represent a critical risk to road users and shall continue to be responded to within established timescales as the present standby arrangements allow. There are no standby arrangements on the Island of Cumbrae, therefore the SCOTS recommended response time of within 24 hours shall be adopted for the island to establish a realistic response time considering location and available resources.

Category 1 represents a critical risk to road users and should be corrected or made safe at the time of inspection, if reasonably practicable. In this context, making safe may constitute displaying warning signs and / or coning off to protect the public from the defect. Where reasonably practicable, safety defects of this Priority should not be left unattended until made safe or, a temporary or permanent repair has been carried out.

When a Category 1 defect is identified within a larger group / area of defects, only that particular element shall be treated as a Category 1 defect. The remaining defects shall be categorised accordingly.

Category 2: Repair within 5 Working Days.

This allows a more proactive approach to be adopted for those defects that represent a high risk to road users or because there is a risk of short-term structural deterioration. Such

defects may have safety implications, although of a lesser significance than Category 1 defects, but are more likely to have serviceability or sustainability implications.

Category 3: Action within 60 Working Days.

Defects that require attention although they represent a medium risk to road users. This allows defects of this nature to be included in medium term programmes of work.

Category 4: Consider for Planned Works Programme

The defect is considered to be of low risk; no immediate response is required. Defects considered to be Category 4 are not classed as safety defects and are collected to assist the development and prioritisation of Planned Maintenance Works Programmes.

NR: NO Action Required

The defect is considered to be of negligible risk, no intervention is required and monitoring will continue as per the inspection regime

Meeting Target Response Times

It may not be possible, particularly at certain times of year, to meet target response times, due to pressure on resources. This could, but not exclusively, be due to the high number of defects that can arise in a short period of time after periods of adverse weather, such as prolonged spells of heavy rain or snow, or freeze / thaw conditions. Prolonged periods of adverse weather may also prevent remedial measures being carried out.

The appropriate response time commences from the time that the defect is identified and categorised by the inspector.

Performance Monitoring

Assessment of inspections is carried out annually to ensure that timescales have been met, although any issues around meeting target inspection dates is brought to the attention of the appropriate Team Leader as soon as the issue arises to ensure that alternative arrangements can be put in place to meet inspection requirements.

Defect categorisation will be checked on a regular basis to ensure accurate assessments are being carried out and additional training provided where necessary.

Inspector Competency

For the purpose of this document, the term ‘Inspector’ is defined as ‘a person who the road authority has assessed and certified as competent to identify and undertake a risk assessment of a road asset defect and if required, determine the risk treatment’. Therefore, within this document, ‘inspector’ is not utilised exclusively for a person who mainly completes the routine road asset safety inspections, but can include technicians, engineers or other staff within the authority who have been assessed by the authority to achieve the authority’s required level of competency.

Training

Road Authorities must ensure that all Road Asset Safety Inspectors are competent in carrying out safety defect inspections.

As a minimum, inspectors shall complete the SCOTS Risk-based Approach to Safety Defect Inspections training and be required to achieve a pass grade on the course assessment to demonstrate competency in assessing risk. Training shall be delivered by Asset Management officers trained using the SCOTS training toolkit and assessed as competent through SCOTS.

In addition, inspectors shall undergo additional training equivalent to the Scottish Credit and Qualification Level 6 National Highway Safety Inspectors Training and Certification Scheme, operated by the Institute of Highway Engineers. New inspectors will initially be given in-house training provided by safety inspectors to ensure consistency in the identification of defects and the prioritisation of defect repairs.

Training Plans

It is accepted that there may be circumstances where an inspector is new to the role and will have to build up their experience, training and competency. In such cases, or where an existing inspector does not meet the required standard, the Network Team Leader shall work with the inspector to develop, document and implement a Training Plan to assist them to meet the necessary level of competency.

The Training Plan is evidence that the road authority is supporting the inspector, assisting them to achieve the level of competency required and ensuring consistency across the authority’s inspectors.

Review of inspector training plans shall be conducted at regular intervals to ensure progress is being achieved.

Records of the reviews and any actions shall be maintained and held against the inspector's Training and Competency record.

Training and Competency Records

Inspector training and competency records shall be maintained and reviewed annually for completeness and to identify when inspector re-assessment is due to ensure that they continue to meet the road authority's minimum competency requirements.

Training and competency records shall be held electronically.

Other Inspections

Service Request Inspections – Externally Reported Defects

Road authorities receive reports of defects from a number of different sources, such as the Police, Emergency Services, general public, public utilities and other agencies; these Service Request reports are managed as follows:

Reports of dangerous defects are responded to as Category 1 defects due to the risk associated with reports of this nature. All other reported defects are recorded as fault reports and shall be inspected within 5 working days with any identified defects prioritised in the same way as those defects identified through programmed inspections.

Road Condition Inspections (or Structural Condition Surveys)

Undertaken to consider the general condition of the individual roads and footways and the need for planned structural maintenance which can be programmed accordingly. Inspections for the carriageway asset are presently undertaken through the national Scottish Road Maintenance Condition Survey (SRMCS).

Visual condition surveys for both carriageways and footways/footpaths are undertaken annually and recorded in the council's road management system.

Safety Inspection of Highway Trees

Defective trees, hedges or shrubs likely to cause a danger to road users by encroachment, visibility obstruction, damage or trip hazard are recorded during road inspections. Under Section 83, or 91, of the Roads (Scotland) Act 1984, North Ayrshire Council deals, by consultation with land owners and, if required, a Notice, with hedges, trees and shrubs growing on adjacent land which are likely to cause a danger to road users.

Additional tree inspections are carried out by a qualified arboriculturalist.