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Road Asset Inspections: A Risk Based Approach

Road Asset Safety Inspection Strategy

Version: x.x

Date:

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Document Information

Title	Road Asset Inspections: A Risk Based Approach Road Safety Inspection Strategy
Author	Atkins/SCOTS
Description	This document provides a template Road Safety Inspections Strategy document for authorities to use, outlining the SCOTS recommended methodology that complies with the code of practice requirement for a risk based approach. It can be amended to accommodate local context where appropriate.

Document History

Version	Status	Date	Author	Changes from Previous Version
1.0	Final	Sept 2018	Atkins/SCOTS	n/a
1.1	Revision	Nov 2018	SCOTS	Following Authority feedback, revision to Likelihood Table 8: removal of % descriptor and amendment to timeframe column values

Document Control

Version	Date Authorised (SCOTS RAMP Steering Committee)
1.0	13/09/18
1.1	At Steering Group meeting, 19/11/18

How to Use the Template

This is a template document. It is expected that authorities will edit it to create their own strategy document. In doing so **this page,** and the **instructional text** within the document that is highlighted in yellow, **should be removed** on completion.

Sections that have an orange background are content prompts/suggested text that can be **amended or replaced** to reflect local requirements where appropriate. On completion **remove the background colour**.

Finally, once your local strategy document is ready, update the Table of Contents.

Document Information

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Author	
Description	

Document Control

Version	SCOTS Template Version	Date	Author	Changes from Previous Version

Table of Contents

SCOTS
ASSET MANAGEMENT FRAMEWORK

Introduction

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

The document is one of a suite of Risk Based Approach documents, a description of which can be found in the overview document held in the Asset Management Khub: "SCOTS Risk Based Approach Overview.doc"

'Well-Managed Highway Infrastructure: A Code of Practice'[1] has specific recommendations regarding inspections of all road elements. This Strategy 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 Safety Inspection Strategy 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 benefits that can be achieved by adopting a common approach which follows the principles of 'Well-Managed Highway Infrastructure'.

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

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

Adoption of this strategy 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."

Paragraph A4.3.16 of the code states "The footway hierarchy should have regard to any network of 'housing footway', serving housing estates or related development, which may be unadopted as public highways but have established public rights of access and may be maintained by the housing authority. Users will make no distinction and will consider the footway network as a whole."

Therefore, Councils may choose to add a comment here with regard to other assets which are not on the list of roads but where the Roads Service has responsibility or interest in the maintenance of these assets. These may include the following: Housing Courts/ Roads, Lanes. Car Parks.

This Document

This Road Safety Inspection Strategy contains guidance to assist road authorities in managing safety inspections on public roads on the roads authority network including the nature and priority of response to defects encountered.

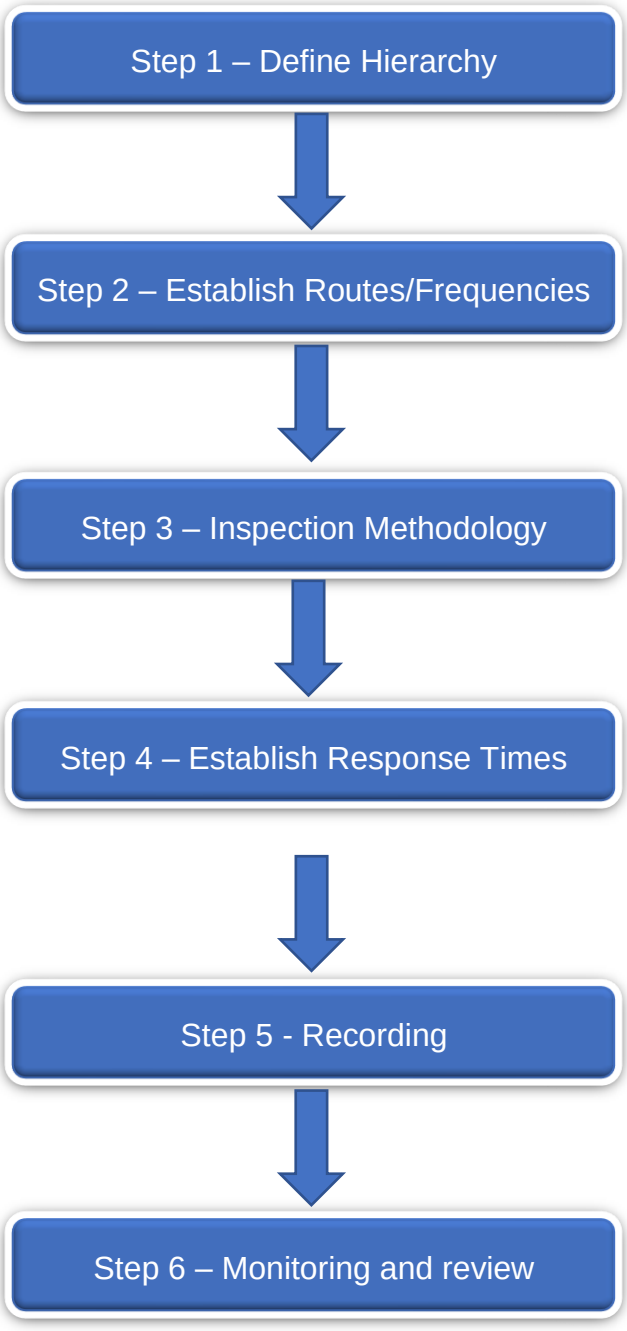
SCOTS formed a focus group to develop this Risk Based Approach documentation. The rationale for producing it and the approach taken to key content is contained in the following document held within the SCOTS Road Asset Management Knowledge Hub (Khub):

'SCOTS Rationale for Risk Based Approach to RAM Guidance.doc'

The Training, Competency and Experience of all persons involved in developing the SCOTS risk based approach guidance documentation is also detailed in the rationale document.

Overview

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



Road hierarchy forms the foundation of a risk based maintenance strategy; crucial for establishing service levels and network management

Define the physical routes of inspection, the standard frequencies and modes of inspection

A methodology inspectors can follow to assess defects to determine the level of risk and priority of response

Assign an appropriate safety level of response (time and type) to each prioritised category of risk. e.g. Priority 2 (High Risk): Repair within 5 working days.

Establish procedures for documenting safety Inspections and other key information such as inspector training and competency records

Regularly monitor and review the Safety Inspection strategy and its operation

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, replicated in the tables below, are adopted as described. These are:

Table 1 Carriageway Hierarchy

Table 2 Footway Hierarchy

Table 3 Cycle Route Hierarchy

If not adopting the following Code of Practice Hierarchies, remove the above statement and replace these tables with your revised versions, together with rationale justifying non-adoption.

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.

Category	Hierarchy	Description
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.
6	Minor Road	Locally defined roads.

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 Walking Zones	Very busy areas of town centres with high public space and Streetscene contribution.
2	Primary Walking Routes	Busy urban shopping and business areas and main pedestrian routes, including links to significant public transport locations.
3	Secondary Walking Routes	Medium usage routes through local areas feeding into primary routes, local shopping centres etc.
4	Link Footways / Footpaths	Linking local access footways through urban areas and busy rural footways.
5	Local Access Footways / Footpaths	Footways associated with low usage, short estate roads to the main routes and cul-de-sacs.
6	Minor Footways	Little used footways serving very limited numbers of properties.

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, remote from carriageway or footway / path where on the list of public roads.

Road Network Assessment

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

SCOTS recommends that roads authorities use a focus group of local expert stakeholders, who have been assessed as appropriately experienced and competent, to assist with review of the road network against the hierarchy categories. Examples of such stakeholders are:

- Inspectors
- Asset Manager
- Claims Manager
- Network Manager
- NSRWA Manager
- Winter Maintenance Manager
- Risk Manager & Emergency Planning Officer
- Section 38 Manager
- Road Safety Officer

Where a local road network has not yet been categorised using the defined road hierarchy, an existing winter maintenance and resilient network hierarchy may be referred to as a starting point as there is likely to be common considerations at play.

Built on top of this foundation hierarchy, the focus group should consider the National Street Gazetteer (NSG) and related information such as traffic sensitivity, special engineering difficulties, etc.

Local authorities should finally consider additional information relevant for each asset functional hierarchy; example data that can be utilised is:

- Traffic levels (e.g. vehicles, vehicle types, footfall, cyclists, etc)
- Environment (Urban or Rural)
- Major shopping areas
- Industrial estates/Business Parks
- Transportation hubs & depots (e.g. Bus/train stations, Bus/train depots, airports, ports, etc)
- Military bases
- Emergency Service stations
- User type (e.g. vulnerable users)
- Claims
- Defects
- Customer Service Requests
- Flooding

The above list is not exhaustive and are examples only; road authorities must consider their local needs, requirements and priorities.

The competency of those involved in establishing network categories and the discussion and reasons for key decisions **must** be documented. This information can be recorded within this strategy document, or as an appendix, or elsewhere (if so, cross reference the document).

The following process was adopted by [Council] for assessing the road network categories *(detail process and considerations applied)*

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

Name/Role	Experience	Qualifications/Training

Documents in relation to the above (e.g. meeting agendas, minutes, correspondence) detailing the discussion, assumptions or reasons for key decisions are held …….(place)

Review of Road Network Categories

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

Review Frequency

It is recommended that authorities undertake an annual review for any major developments within the network, such as a major new development, decommissioning of a site or change to functionality of a location (e.g. industrial estate that is being redeveloped into residential properties).

Additionally, it is recommended that a more detailed review of functional hierarchies should be undertaken every 3 years.

Specify your own council arrangements for review……

Date when next hierarchy review due:

As in the case of establishing road network categories using a focus group, the road authority should document the review, including who was involved, their competency and detail of discussion/decisions.

Continuity of safety and serviceability with neighbouring Highway 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

[Council name] is adopting the 'Well-Managed Highway Infrastructure: A Code of Practice' Frequencies for safety inspections as follows:

Table 5 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
6	Minor Road	Annually

Table 6 Frequency of Inspection – Footways & Footpaths

Category	Category Name	Frequency
1	Prestige Walking Zones	Monthly
2	Primary Walking Routes	Monthly
3	Secondary Walking Routes	Quarterly
4	Link Footways / Footpaths	Six Monthly
5	Local Access Footways / Footpaths	Annually
6	Minor Footways	Annually

Table 7 Frequency of Inspections – Cycleways

Category	Frequency
1	As for adjacent road
2	Six Monthly
3	Annually

The frequency of inspections contained within Tables 5 to 7 above represents guidance as a starting point for authorities. You should use the considerations below based on risk assessment to determine where any deviations are proposed for individual sections of the road network:

- category within the network hierarchy,
- type of asset, e.g. carriageway, footway, embankment, cutting, structure, electrical apparatus, etc,
- critical assets
- consequence of failure
- network resilience

- use, characteristics and trends
- incident and inspection history
- characteristics of adjoining networks elements
- the approach of adjoining roads authorities
- wider policy or operational considerations

Specify any exceptions to above standard frequencies and include reasons.
If records of exceptions are held elsewhere, cross reference.

Safety Inspection Routes

Safety inspection routes need to be determined. This can be either manually done, or using an optimisation tool.

State how your routes are compiled; manual process or route optimisation software, and the basis for the routes e.g based on maintenance hierarchy and required frequency, geographical proximity, length which an inspector can drive/walk etc in a day, whether the route is walked or driven or any other relevant factors.

Provide details of where records are held and how often they are reviewed. Review of routes will probably coincide with any review of the road network categorisation.

In addition to the physical route details the route record should detail dates of creation and/or review; required inspection frequency; due dates of inspection, whether routes walked, driven or cycled.

Driven in a slow moving vehicle is the default inspection mode. State the rationale for other modes of inspection specified for a route. In heavily used urban areas, particularly when inspecting footways, walked inspections may be required. It may also be appropriate to inspect cycle routes and / or footways on a bicycle. The method of undertaking each inspection is subject to a risk based approach considering traffic type, accessibility and footfall.

Document how your routes have been formulated and where they are held, as per guidance above.

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 4, as follows:

Table 4 Inspection Tolerances

Frequency of Inspection	Inspection Tolerances
Monthly	± 5 working days of the Due Date
Quarterly	± 10 working days of the Due Date
Six Monthly	± 15 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 - Six Monthly** indicates that two regular spaced inspections will be carried out per year.
- **Frequency of Inspection - Annual** 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 a monthly inspection is more than 2 weeks late due then the programmed inspection will be missed and the cycle resumed at the next due inspection date.

- Where substantial unavoidable delays are incurred to other inspection frequencies the manager may assess the impact and adjust the programme.
- A record must be kept of change decisions and reasons for them.

Inspection Methodology

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 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.

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 TRO's
- 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

Road Lighting

- Damaged column, cabinet, control pillar, wall mounting
- Exposed, live electrical equipment

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. However, it represents a step change in the way that defects are assessed. 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 removing these is that the same defect will represent a different level of risk in a different context. In the past this has led to inappropriate and often unnecessary, costly, temporary repairs. Instead, by using a risk based approach, councils can reduce such 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.

So while not providing any minimum or default standards, the code of practice does support 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 the 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
Likely	Will probably happen, but not a persistent issue	Monthly
Possible	May happen occasionally	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, sever 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	Significant financial loss	Medical treatment required, semi-permanent harm up to 1 year	Some adverse publicity, legal implications
Minor	Minor impact on service objectives	Moderate 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 factor for a particular risk is the product of the risk impact and risk. 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 factor as shown in the risk matrix, table 10:

Table 10 Risk Matrix

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

Defects identified may be due to the activities of the utility companies, which are governed and managed by the requirements of NRSWA[3]. However, the road authority still retains duty of care responsibility.

Insert the local procedure for dealing with such defects:

Such defects will be recorded by the Road Safety Inspectors and then reported to the owning utility company.

In the case of urgent attention being required, the following process applies:

Inspection Records

Insert local procedure for how inspection records are captured and stored.

Local procedure…

[3] New Roads and Street Works Act 1991

Priority Response Times

Safety Levels

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

Table 12 SAFETY LEVELS - Defect Priority and Response Times

Defect Priority	1	2	3	4	NR
Standard Response Time	24 Hours	5 Working Days	60 Working Days	Programmed work	No Action required
Islands or Remote Locations Response Times	Insert Practical Alternative response time or n/a				

Table 12 (above) contains the SCOTS recommended SAFETY LEVEL defect priority and response times. They have been set at a realistic level and authorities are **strongly encouraged** to adopt them for consistency reasons.

Where appropriate, such as in Island authorities, or within remote locations, an alternative Priority 1 safety level response time can be set. Where this applies, amend the Priority 1 description below giving appropriate explanation of local context/constraints and how you determined the alternative response time for Category 1.

Priority 1: Make safe within 24 Hours

Insert rationale for alternative to make safe within 24hrs timeframe, where this applies

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

Priority 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 Priority 1 defects, but are more likely to have serviceability or sustainability implications.

Priority 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.

Priority 4: **Consider for Planned Works Programme**

The defect is considered to be of low risk; no immediate response is required. Defects in Priority 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

Service Levels

SCOTS recognises that authorities may choose to have higher Service Levels than the Safety Levels specified by SCOTS in Table 12; in these cases, Table 13 should be used by the authority to state the authorities Service Levels and explanatory notes added as appropriate.

Table 13 **[Council] SERVICE LEVELS - Defect Priority and Response Times**

Defect Priority	1	2	3	4	NR
Response Time	X	XX	XXX	Programmed work	No Action required

[Council] road authority has also set the above Service level response times that are higher than the Safety levels.

(Add any explanatory notes as required).

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.

Add any local procedure to be followed in the event of delays caused by exceptional circumstances as mentioned above.

The appropriate response time commences from the time that the defect was identified and categorised. For a programmed inspection this will be from the time that the defect was inspected.

Performance Monitoring

The authority should have a regime in place for conducting and recording regular monitoring of safety inspections. This would include aspects such as whether they are being carried out by due dates; a process for periodic or random checking of inspections completed to confirm they are being accurately assessed; comparison of inspection results by different inspectors (e.g. are there any patterns of high or low priority results?); are inspection recording procedures being followed? Are Health and Safety requirements being adhered to?

Detail local performance monitoring processes..

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.

To achieve this, SCOTS recommend that as a minimum standard, all inspectors complete the SCOTS Risk-based Approach to Safety Defect Inspections training and achieve a pass grade on the course assessment.

A Trainers toolkit containing: a Trainers Guide; presentation slides; assessment papers and marking schemes for local training of inspectors is available on the SCOTS Asset Management Khub. It is recommended that those delivering local training attend the SCOTS ‘Train the Trainer’ training on a Risk Based Approach to road safety defects and successfully complete the assessment. SCOTS will run periodic Train the Trainer sessions as part of the SCOTS RAM Project, depending on requirements. For more information, please contact the SCOTS RAMP Project Manager.

Safety Inspectors within [Council] will undergo 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 will be delivered by [local role e.g. the appropriate Team Leader] utilising the SCOTS training toolkit. The person delivering the training will be required to have been trained and assessed as competent, either through SCOTS or [insert other appropriate recognised training provision you intend to use, if applicable].

Training Plans

Courts accept 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, [designated role] 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.

Training Plans should be as simple, clear and concise; containing, but not limited to, information such as:

- Training (e.g. undertake a course, shadowing another inspector, audit of inspections by colleague, etc)
- Expected Completion Date
- Review Date
- Review comments

Upon completion of the plan, it should be signed and dated as complete by a competent person.

Review of inspector training plans will be conducted at regular intervals to ensure the plan is progressing as anticipated, to sign off key areas completed and to amend the plan, if required.

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

Training and Competency Records

Road Authorities must maintain "Training and Competency" records and these should be regularly reviewed 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.

A template: 'Inspectors RBA Training and Competency Log.xls' is available within the Trainer's toolkit for recording inspector training, assessment, and training plan details.

Inspector training and competency records will be maintained and reviewed [insert period e.g. 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.

The Training and competency records are held [place].

The purpose of this document is to provide operational guidance to those officers responsible for managing road asset safety inspections. The following short section covers details that should be determined for other inspection types. Authorities can decide whether they wish to include this content if it is not already covered elsewhere – or cross reference.

Other Inspections

For all of the following inspection types, insert the local processes or reference the appropriate procedural document that defines: how risk is determined; the criteria for deeming that a safety inspection is required (where applicable); inspection prioritisation and allocation process.

Also include required recording procedures.

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:

Insert local procedures

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 of assets may also be undertaken with SCOTS guidance.

Insert local procedures

Utility Company Apparatus

Undertaken in accordance with the requirements of the New Roads and Street Works Act 1991. Where identified, defects will be notified to the relevant Statutory Undertaker.

Insert local procedures

Service Inspections

These are detailed inspections to ensure that particular road assets meet serviceability requirements. An example would be a General Inspection of a road bridge. Such inspections are not covered in this document.

Insert local procedures