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East Dunbartonshire Council

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East Dunbartonshire Council Road Inspection and Maintenance Plan 2024 to 2027

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1. Roads Management & Maintenance Policy Statement

1.1 Introduction

This Plan records how East Dunbartonshire Council (EDC) manages and maintains the Council's Road (and related) assets including carriageways, footways, bridges, structures, street lighting, drainage, street furniture, street signs, road markings and cycleways.

It contains details of important commitments and procedures used by the Council to maintain and operate the road (and related) assets and will be used as a reference by those tasked with their management.

EDC has a duty under the Roads (Scotland) Act 1984 to keep a register of all public roads within the Council boundary, and to maintain and manage them.

The Road Service must create value to the Council's stakeholders through long-term optimisation of the road infrastructure to support the delivery of the Council's Strategic Outcomes.

The Service aims to deliver a customer-focused road maintenance service that aligns funding to maximise the impact finite resources have on safety and condition of our roads. It monitors performance to improve service.

Asset owners take a strategic 'whole of life' approach to maintain and renew the roads infrastructure and make the best use of available resources for the long-term benefit of our road's infrastructure. The Service is committed to reducing the carbon impact of its operations and to contribute to the overall Council's 'Net Zero' ambitions.

1.2 Strategic Objectives of Road Maintenance

The aim of inspecting roads is to identify and take action to remove those hazards which present a potential risk to road users. Additionally, the process supports the development of programmes to maintain the assets and keep the roads in a serviceable condition. This is in line with the overall statutory duty of network safety, service reliability and sustainability.

Road safety and service inspections are undertaken to identify defects that are creating or likely to create a danger or serious inconvenience to users of the road network or the wider community. Such defects should include those that will require urgent attention as well as those with a reduced level of severity, where a longer period of response may be acceptable or may confirm that no response is needed.

Using asset data collected across the road network, in conjunction with regular inspections, reports and other information, maintenance programmes are developed. The strategic objectives of maintaining the road network are:

- to adopt a robust asset management approach to roads maintenance through which the Council will be able to compare and determine the best methods of achieving value for money, long-term maintenance needs, environmental best practice, and public safety.
- to adopt a framework of service levels and operational practices that are flexible and adaptable to changing needs, legislation, funding, available resources methods of service delivery and technologies.
- to move away from prescriptive national standards and adopt standards and service levels more suited to local needs and the environment of East Dunbartonshire.
- to continue our risk-based approach to operational decision-making.



1.3 Inspection and Maintenance Plan

This Inspection and Maintenance Plan 2024 to 2027 will be delivered through the operation of a coordinated end-to-end asset management system aligned with the Scottish Collaboration of Transportation Specialists (SCOTS) Road Asset Management Framework of Recommended Practice that:

- produces a Road Inspection and Maintenance Plan, objectives and performance targets that achieves balance across the organisational Local Outcome Improvement Plan Outcomes.
- considers the long-term need of our assets, to develop investment options that are sustainable, efficient, and based upon an optimised consideration of cost, risk, and benefit.
- develops a workforce utilising internal and external resource aligned with the requirements of the Road Asset Management and Maintenance Plan linked to the appropriate level of investment.
- ensures the efficient delivery of the service that meets local needs, requirements, and priorities.
- tracks the delivery of asset management objectives and targets, and reviews the benefits delivered against the industry outcomes.
- incorporates regular audits and formal management reviews designed to seek and implement continual improvement of the inspection, maintenance, and management practices.

East Dunbartonshire Council executive, employees, and suppliers shall comply with this policy statement and contribute towards the continuous improvement of inspection, maintenance, and management practice.

The Council will provide sufficient information, training, and resources to enable this to be achieved.



2. Introduction

East Dunbartonshire Council's Road Inspection and Management Plan has been developed with the primary aim of providing operational guidance to those officers responsible for managing the various road assets. This encourages a consistent approach by utilising a formalised system that outlines the statutory obligations placed on the Council as the local Roads Authority. The Plan covers the procedures and processes relating to the management of the following assets:

- Carriageways, footways and cycleways
- Road drainage systems
- Streetlighting
- Traffic and Pedestrian Signals
- Street furniture
- Bridges, barriers and structures (retaining walls)
- Flood defences

The Plan also includes Roads Construction Consent & Adoption, and Winter Maintenance.

The individual procedures outline and confirm frequency of inspections as well as the requirements for assessing, recording, and responding to defects in the relevant road asset.

All Scottish Councils recognise that they are currently facing delivering services within an environment of increasing fiscal austerity and recognise the benefits that can be achieved by adopting a common approach that follows the agreed inspection and maintenance principles.



2.1 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.”

For the purposes of this Plan, this refers to all carriageways, footways, structures, verges with associated assets that have been adopted by East Dunbartonshire Council.

In addition, when inspecting and maintaining road assets other appropriate legislation/guidance is considered, including the following:

- Health and Safety at Work etc. Act 1974
- Health and Safety legislation
- Construction (Design and Management) Regulations (CDM) 2015
- New Roads and Streetworks Act
- EDC Corporate Health and Safety Policy
- Safety at Street Works and Road Works – A Code of Practice
- Climate Action Plan for East Dunbartonshire
- Design Manual for Roads and Bridges

2.2 This Document



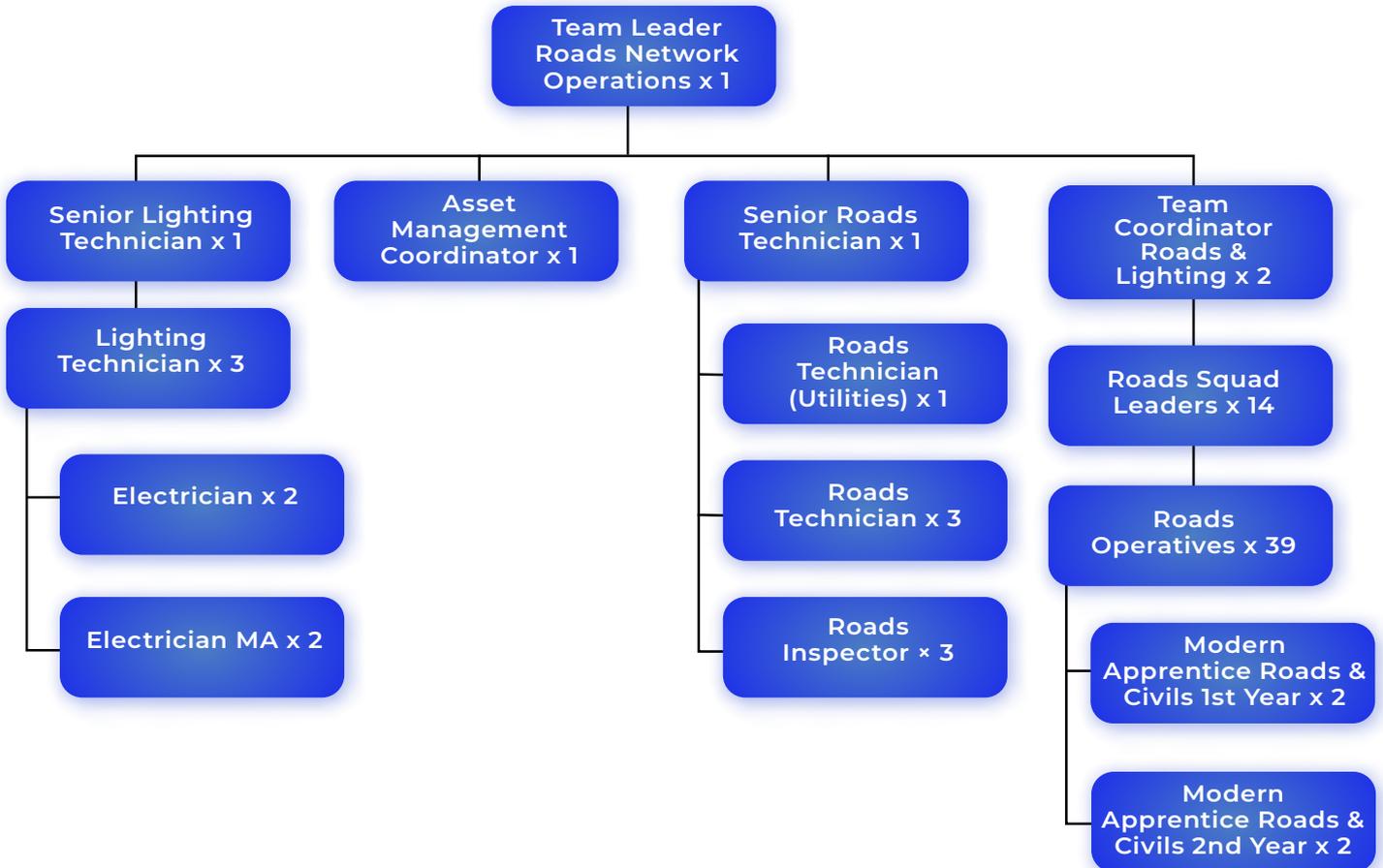
This Roads Inspection and Maintenance Plan sets out to ensure the safety of the East Dunbartonshire Road network via regular inspection and routine maintenance, as well as targeted capital investment decisions based on relevant data.

The Plan focusses on the inspection and maintenance of carriageways and footways but this will apply equally to other road-related assets. For the other assets, including street lighting, structures, drainage etc separate appendices have been included to provide specific information relating to them.

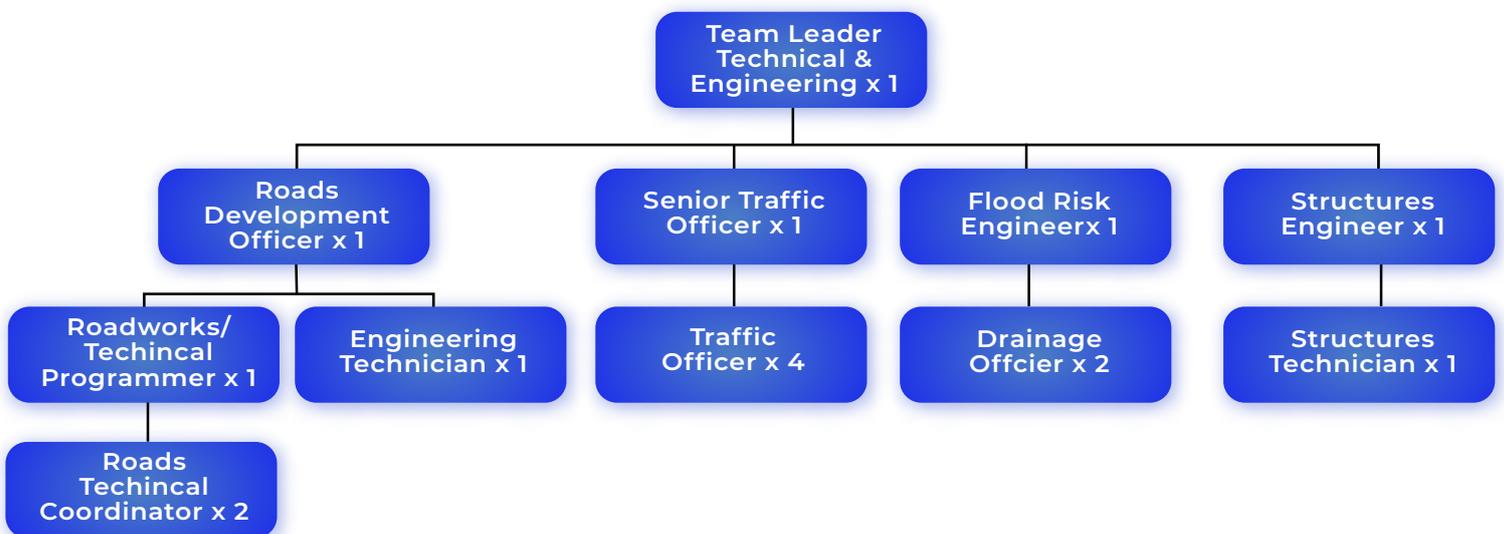
3. Roads Management Structure

The Roads Service is split into two teams as shown below:

Roads Network Operations Team



Roads Technical & Engineering Team



4. Hierarchy

The “Well-Managed Highways Infrastructure – Code of Practice” (WMHI - CoP) indicates that the formation of an agreed road network hierarchy is the foundation of a risk-based maintenance approach which is crucial for establishing service levels and network management.

The hierarchies contained within the WMHI - CoP have been adopted to ensure there is a consistent approach being taken within East Dunbartonshire that mirrors that of other Local Authorities and is recommended by SCOTS. Assignment of a carriageway to a particular category is a matter for the Council’s discretion. However, the following issues are taken into consideration:

- Character and volume of traffic
- Current usage and proposed usage
- Routes to important local facilities and to the strategic (trunk) road network (if applicable)
- Traffic volumes and speed limits
- Accident and other risk assessment
- Potential for use as a diversion route
- Special characteristic of certain assets, e.g., historic structures
- Access to schools, medical centres, and other important community facilities
- Vulnerable users or people with special needs, elderly people’s homes etc.
- Ceremonial routes and special events



4.1 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
2	Strategic Route	<p>Routes for fast-moving long-distance traffic with little frontage access or pedestrian traffic. Speed limits generally in excess of 40mph with few junctions.</p> <p>Parked vehicles are generally not encountered outwith urban areas.</p>
3a	Main Distributor	<p>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.</p>
3b	Secondary Distributor	<p>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. On-street parking is generally unrestricted except for safety reasons.</p> <p>In rural areas these roads link the villages, bus routes and HGV generators to the Strategic and Main Distributor Network.</p>
4a	Link Road	<p>In urban areas these are residential or industrial interconnecting roads with 20 or 30 mph speed limits, random pedestrian movements and uncontrolled parking.</p> <p>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.</p>
4b	Local Access Road	<p>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.</p> <p>In urban areas they are often residential loop roads or cul-de-sacs.</p>
4b	Minor Road	Locally defined roads.

4.2 Footways

Table 2 below is based on the recommendations of WMHI CoP and is used as a starting point when allocating a footway / footpath to a particular category.

The following key factors are also taken into consideration:

- pedestrian volume, traffic volume and speed limits on adjacent carriageways affect pedestrian crossing routes.
- 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.

Table 2 - Footway Hierarchy

Category	Category Name	Description
1	Primary Walking Routes	Busy urban shopping and business areas and main pedestrian routes, including links to significant public transport locations.
1a	Prestige Walking Zones	Very busy areas of town centres with high public space and Streetscene contribution.
2	Secondary Walking Routes	Medium usage routes through local areas feeding into primary routes, local shopping centres etc.
3	Link Footways / Footpaths	Linking local access footways through urban areas and busy rural footways.
4	Local Access Footways / Footpaths	Footways associated with low usage, short estate roads to the main routes and cul-de-sacs.
4	Minor Footways	Little used footways serving very limited numbers of properties.



4.3 Cycle Routes

Cycle routes are categorised by location and 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 unsegregated.
3	Cycle trails, leisure routes through open spaces, remote from carriageway or footway / path where on the list of public roads.



4.4 Road Network Assessments

It is important that the road network categorisation reflect 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.

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

Consideration is also given to 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)
- Shopping areas (Major, Urban, Rural)
- Industrial estates/Business Parks
- Transportation hubs & depots (e.g., bus/train stations, bus/train depots etc)
- Emergency Service stations
- User type (e.g., vulnerable users)
- Claims
- Defects
- Customer Service Requests
- Flooding

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



- Roads Network Operations Team Leader
- Roads Network Operations Senior Roads Technician
- Roads Technical & Engineering Team Leader
- Roads Technical & Engineering Senior Traffic Officer
- Roads Technical & Engineering Roads Development Officer
- Roads Asset Management Coordinator

5. Review of Road Network Categories

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

The roads network hierarchy will be reviewed in line with the WMHI CoP to ensure that any major developments within the network, such as a major new housing development, decommissioning of a site or change to functionality of a location (e.g., industrial estate that is being redeveloped into residential properties) are being recorded.

Additionally, a detailed review of functional hierarchies should be undertaken in line with the review of the overarching Roads Inspection and Maintenance Plan at least every three years.

The review will be coordinated by the Roads Asset Management Coordinator and should include the Roads Network Operations and Roads Technical & Engineering Team Leaders as well as any relevant members of those teams.

The outcomes of the review should be recorded and retained on the Roads Asset Management System by the Roads Asset Management Coordinator.



5.1 Continuity of Safety and Serviceability with Neighbouring Road Authorities

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

5.2 Inspection Frequencies

East Dunbartonshire Council is adopting the 'Well-Managed Highway Infrastructure: A Code of Practice' Frequencies for safety inspections as follows in Table 4:

Table 4 – Assets, Hierarchy Descriptions, Categories, and Inspection Frequencies

Asset	Hierarchy Description (as per COP)	Category (as per COP)	Inspection frequency
 Roads	Strategic Routes	2	Monthly (Min 12/year)
	Main Distributor	3a	Monthly (Min 12/year)
	Secondary Distributor	3b	Monthly (Min 12/year)
	Link Road	4a	Every 3 months
	Local Access	4b	Annually
	All other locations	4b	Annually
 Footways	Primary Walking Zones	1a	Monthly (Min 12/year)
	Prestige Walking Routes	1a	Monthly (Min 12/year)
	Secondary Walking Routes	2	Monthly (Min 12/year)
	Link Footway	3	Every 3 months
	Local Access Footways	4	Annually
 Cycle Route	Part of Carriageway	1	As per associated road
	Remote from Carriageway	2	N/A (every six months)
	Cycle Trails	3	Annually

The frequency of inspections contained within the table above represents guidance as a starting point for Senior Roads Technician, Roads Technicians and Roads Inspectors.

If any deviation from the aforementioned inspection frequencies is proposed for an individual or specific section of the road network, then the undernoted considerations should be considered when risk assessing:

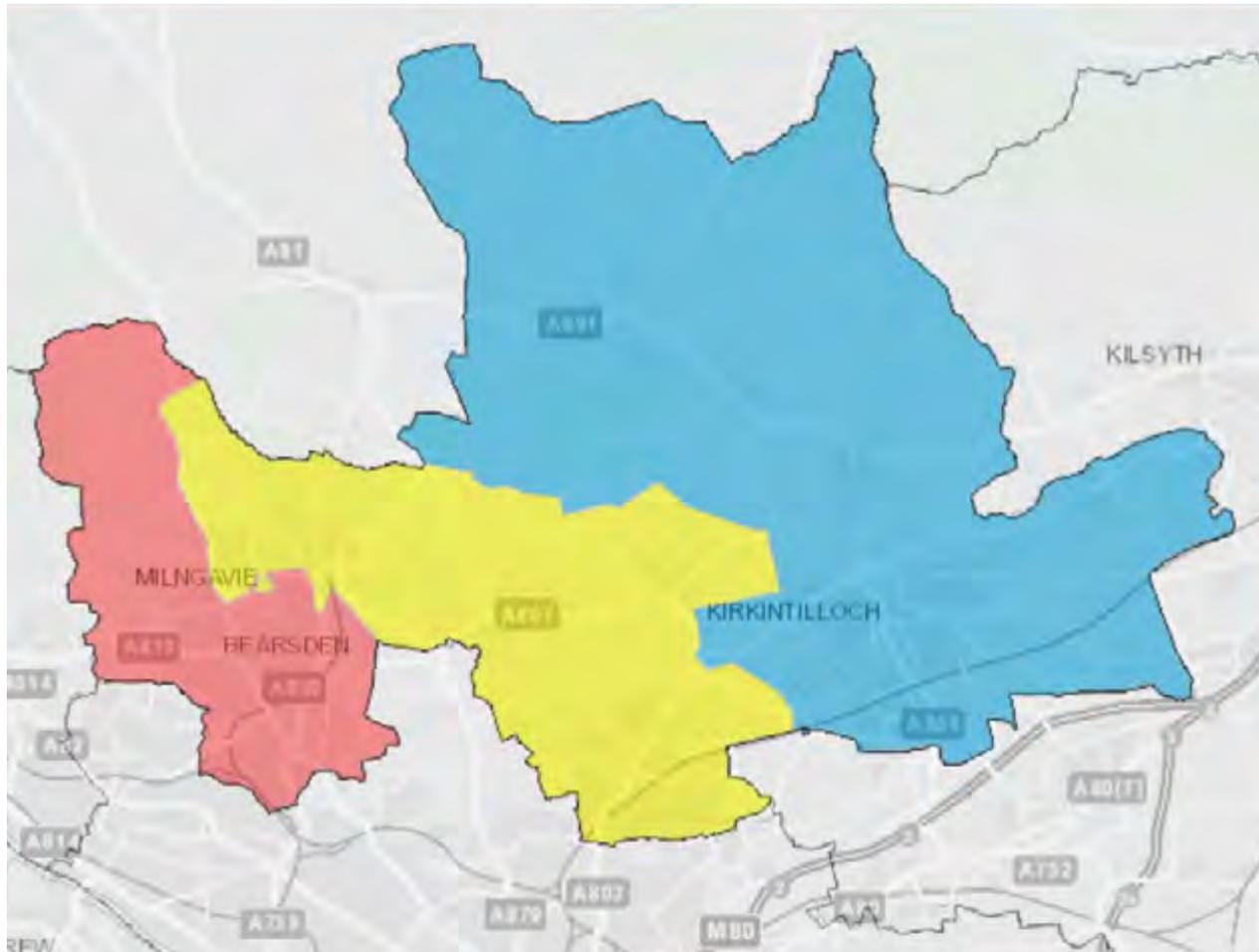
- category within the network hierarchy
- type of asset, e.g., carriageway, footway, embankment, cutting, structure, electrical apparatus, etc.
- critical assets
- consequence of failure
- network resilience
- use, characteristics, and trends
- incident and inspection history
- characteristics of adjoining networks elements
- the approach of adjoining roads authorities
- wider policy or operational considerations

Any deviation from the agreed frequencies should be recorded on the Road Asset Management System by the Roads Asset Management Coordinator.



5.3 Safety Inspection Routes

Safety inspection routes have been sequenced via a manual process. In doing so the Service has created a geographical based approach with one Roads Technician and one Roads Inspector for each of the three geographical areas. The fourth Roads Technician focuses on Utility Inspections and provides cover to the three geographical areas as and when required.



The current routes have been developed using these factors.

- Roads Network Hierarchy
- Agreed Frequency
- Area to be covered per day by Roads Inspector
- If routes can be covered by a vehicle or walking

The information collated is retained on file on the Roads Assets Management System. If the routes are to be driven, then the Roads Technicians and Roads Inspectors may work in pairs, one to drive with the other undertaking the inspection. Alternatively, a driver may be provided from the operational workforce to increase the efficiency of the inspections.

5.4 Safety 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 5, as follows:

Table 5 - 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 - Annual** indicates that one regular spaced inspection will be carried out per year.
- **Due Date** is the programmed date of an inspection.

5.5 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 and for reasons beyond the control of the road's authority (e.g., substantial snow fall), any inspection cannot be carried out in compliance with this Plan, the roads authority will decide on the viability of a safety survey being undertaken, considering the availability of staff and the prevailing weather conditions.

As soon as reasonably practicable following any interruption to the programmed inspection due to events outwith the control of the Service, a deferred programmed safety inspection should be carried out on the affected length of road as soon as is practical.

Where substantial unavoidable delays are incurred to other inspection frequencies, the manager may assess the impact and adjust the programme.

A record will be kept of change decisions and reasons for them.

6. Inspection Methodology

6.1 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. It is a stepped process:

Establish Routes and Frequencies

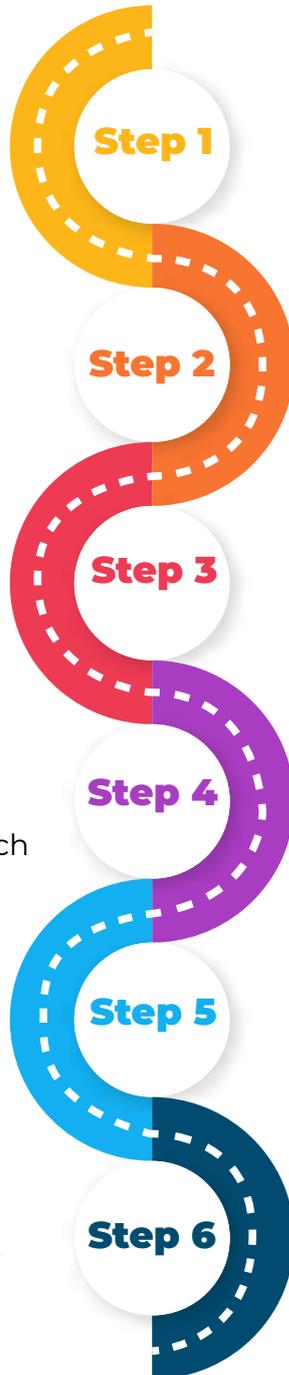
Define the physical routes of inspection, the standard frequencies, and modes of inspection (driven/walked etc.).

Establish Response Times

Assign an appropriate safety level of response (time and type) to each prioritised category of risk.

Monitoring and Review

Regularly monitor and review the Safety Inspection process



Define Hierarchy

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

Inspection Methodology

A methodology Roads Inspectors can follow to assess defects to determine the level of risk and priority of response.

Recording

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

6.2 Planned Cyclic Safety Inspections

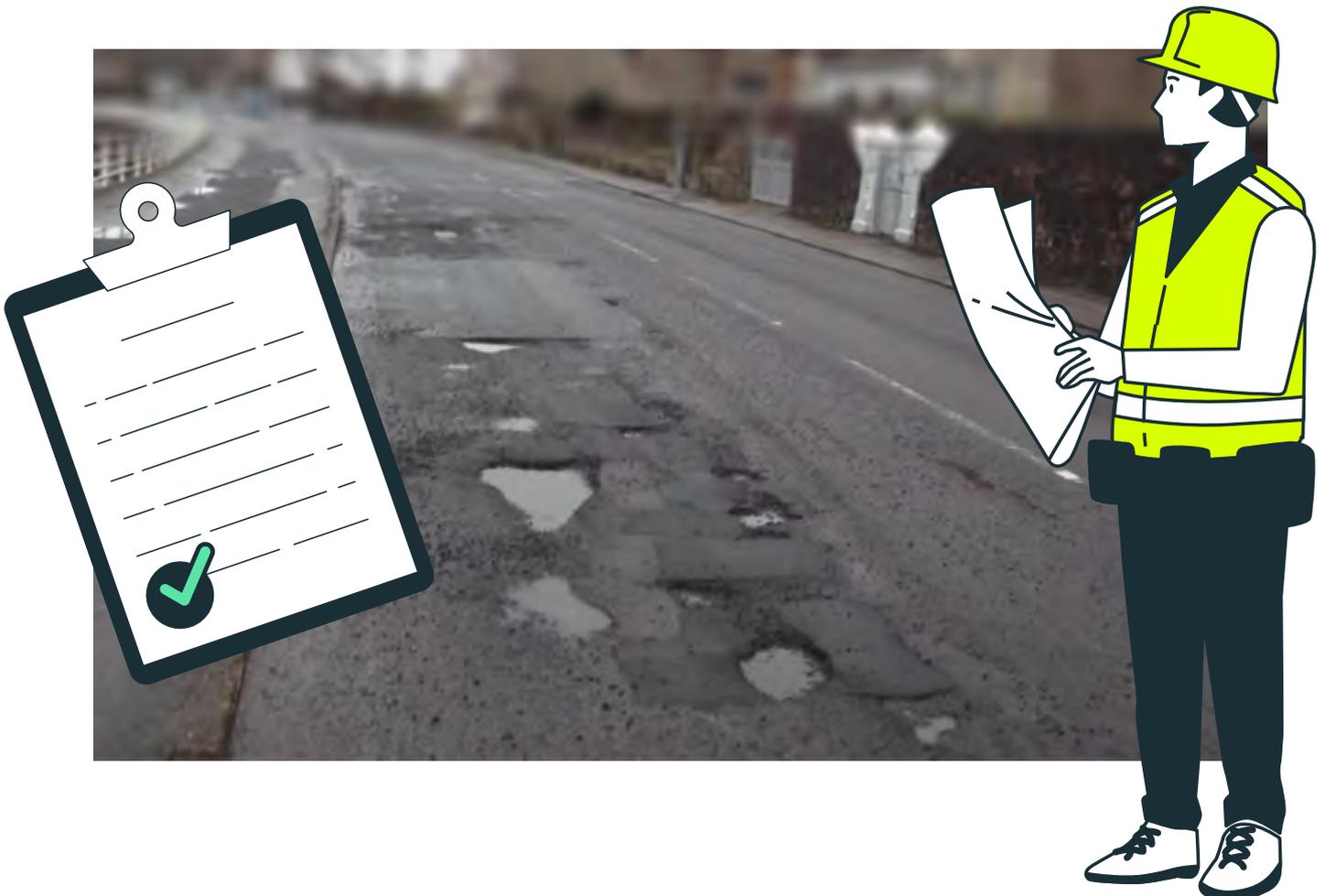
The Safety Inspection regime forms a key aspect of the road authority's strategy for managing liability and risk. Planned, cyclic safety inspections are carried out to identify defects which are hazardous (to any user of the road including drivers, pedestrians, equestrians, and cyclists) so that an effective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

The specified frequency of these inspections is dependent upon the aforementioned 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 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.



6.3 Items for Inspection

The following are examples of the types of defects which, when identified, should be assessed and an instruction for repair issued with an appropriate response time specified:

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 TRO markings
- Missing or significantly damaged covers

Footways 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

Street Lighting

- Damaged column, cabinet, control pillar, wall mounting
- Exposed, live electrical equipment or 'door off'

Others

- Overhead wires in dangerous condition
- Sightlines obstructed by trees and other vegetation, or trees in a dangerous condition
- Landslips 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

7. Risk Management Process

Road Inspectors undertaking safety inspections or responding to reported (ad-hoc) incidents require to use judgement in determining likelihood and consequences of the observed or reported defects. This approach is consistent with the WMHI CoP recommendation that road authorities adopt a system of defect risk assessment for determining the response categories to road defects.

It represents a continuation of the previous risk-based approach adopted in 2019 and a move from the previous long-established way that defects were assessed prior to 2019.

Taking a risk-based approach, 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 considering all relevant factors.

In the past this 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 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.



7.1 Establishing Context

Establishing context requires the inspector to utilise training, experience and knowledge during the inspections to assess the road characteristics, such as giving consideration to the following factors:

- Traffic volume and speed limit
- Carriageway width
- Rural, urban, or unclassified
- Road hierarchy
- Visibility including bends, hill - incline/decline, road camber/cross-fall, etc.)
- Relevant road user types (pedestrians, cyclists, horse riders, cars, LGV's, HGV's, PSV's, etc.)
- Recorded 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).



7.2 Defect Risk Assessment

Having considered the context, the Risk Assessment is a stepped process:

Hazard Identification

A Hazard is 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 assets to be inspected and the potential associated hazards from defects are detailed in the Internal Roads Inspectors Operations Training Manual

Risk Analysis

All risks identified through this process must be evaluated in terms of their significance that 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 regarding 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 6 - 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 7 - 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	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

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 8:

Table 8 - Risk Matrix

Consequence	Negligible	Minor	Moderate	Major	Catastrophic
Likelihood					
Remote	No Response	No Response	No Response	No Response	P3
Unlikely	No Response	No Response	P4	P4	P3
Possible	No Response	P4	P4	P3	P2
Likely	No Response	P4	P3	P2	P1
Almost Certain	No Response	P3	P2	P1	P1

7.3 Defect 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 9.

Table 9 - 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 User Types

The hazard context considers the location and the types of road users that could be impacted by the defect. Roads 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.

The Roads 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.

Defects identified that are outwith the Council's Responsibility

It should be noted that roads and footways often contain the assets and apparatus of other service providers i.e., utility providers sometimes referred to as Statutory Undertakers. While undertaking a routine inspection a Roads Technician and/or Roads Inspector may observe defects that are not the responsibility of the Council e.g., defects due to the activities of the utility companies that are governed and managed by the requirements of New Roads and Street Works Act (NRSWA).





Statutory Undertakers Defects

As the Road Authority representative, the Service/Officer retains duty of care responsibility to record and report the defect even if the asset is outwith Council ownership. The defect must be recorded and reported to the relevant statutory undertaker and recorded on the routine inspection document.

Defects that are the Responsibility of other Third Parties

If a defect is reported or recorded during a routine inspection that falls outwith the Road Authority's responsibility e.g., a private landowner adjacent to the road, the defect should be recorded and brought to the landowner's attention for action. The inspecting officer should refer to the Roads (Scotland) Act 1984 to identify the relevant section within the Act, as this should be referenced when communicating with the third party. The under noted are provided as possible hazards and the associated section from the Act:

- Prevention of danger to road users from nearby vegetation and fences etc. or from retaining walls being inadequate (Section 91)
- Deposit of mud from vehicles on road (Section 95)
- Control of flow of water etc. onto roads (Section 99)

If the third party does not take the required remedial action the Roads Authority may be able to undertake the remedial action to remove or correct the hazard given a suitable notice period and recover the expenses incurred by the Service in doing so.

Any action of this nature should be agreed in advance with the Roads Network Operations or Roads Technical & Engineering Team Leader.

7.4 Inspection Records

The Roads Asset Management System will ensure that all inspection records are issued, recorded and stored electronically. Currently the inspection information is issued to the relevant officers on a weekly basis with the results inputted directly into the latest version of the Roads Asset Management System.

All inspection records shall include the date, time and the name of the person conducting the inspection, as well as the method that the inspection was carried out (i.e., Walked or Driven).

8. Priority Response Times

8.1 Safety Levels

The Priority Response Times for each Defect Category are shown in Table 10 below and these are in line with SCOTS recommended SAFETY LEVEL defect priority and response times.

The Road Safety Inspection methodology allows the Roads Authority to demonstrate that statutory obligations concerning the inspection and maintenance of adopted roads are achieved.

This may not result in a reduction in the number of complaints or insurance claims made against the Council but will mean that the Council is in a better position to answer complaints and defend claims.

Table 10 Defect Priority, Response Timescales and Descriptions

Defect Priority	Repair Timescale	Description
1 (Extreme Risk)	Make safe within 24 Hours	Priority 1 represents a critical risk to road users and should be corrected or made safe at the time of inspection, if reasonably practicable to do so by the inspecting officer. 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 element shall be treated as a Priority 1 defect. The remaining defects shall be categorised accordingly.
2 (High Risk)	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.
3 (Medium Risk)	*Action within 30 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.
4 (Low Risk)	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 (Capital) Programmes.
5 (Very Low Risk)	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

* Whilst the SCOTS recommended standard is 60 days, EDC will aim to achieve a response within 30 working days

Failure to Achieve Response Times

Regrettably, 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.



9. Performance Monitoring

Maintenance General

Performance measurement is carried out under Task 4 of the SCOTS Roads Asset Management (RAM) Project utilising the APSE (Association for Public Service Excellence) and / SCOTS templates. The Roads Asset Co-ordinator is responsible for ensuring the completion of the Annual APSE/Scots template. The maintenance team reports on one SPI: the Road Condition Index (RCI). The RCI is derived from the Scottish Road Maintenance Condition Survey (SRMCS) and is reported each year. The lower the value of the index the better the condition of the Road. It colour-categorises (as below) for each classification of road, the percentage of the carriageway requiring treatment.

RCI Category	Description
Red	In poor condition and likely to require repairs within one year
Amber	Visibly deteriorating and should be investigated to determine the optimum time for planned maintenance treatment
Green	In good condition

Source - Scottish Road Maintenance Condition Survey Categories

Inspections

EDC have a regime in place for conducting and recording regular monitoring of safety inspections, including:

- Whether inspections are being carried out by due dates
- Comparison of inspection results by different Roads Inspectors (e.g., are there any patterns of high or low priority results?); are inspection recording procedures being followed?
- Is the Routine Safety Inspection Procedure being followed

Periodic random check inspections will be routinely undertaken by the Senior Roads Technician with details recorded and will assist in ensuring consistency with categorisation of inspections and highlight any training requirements.

The performance of the safety inspection regime is monitored using appropriate indicators that are benchmarked against similar authorities through the SCOTS/APSE benchmarking programme.

In-House Performance Management Indicators

To monitor in-house performance across the range of maintenance activities, the service uses the following to identify any areas for improvement/change required:

- Percentage of the carriageway network that should be considered for maintenance treatment (Annual).
- Number of public pothole reports received.
- Number of public reported carriageway potholes repaired.
- Number of third-party claims relating to carriageways received.
- Number of third-party claims relating to carriageways settled.
- Number of blocked gully reports.
- % of gully reports resolved within 60 working days.
- Number of personal injury claims received.
- Number of personal injury claims settled.
- % of Cat 1 defects made safe within response times.
- % of principal inspections (Structures) carried out on time.
- % of general inspections (Structures) carried out on time.
- % of Traffic Management faults rectified within target time.



10. Health and Safety

In general, road inspections are carried out from a slow-moving vehicle or on foot. The vehicle should be driven at an appropriate speed to allow any defects to be identified and recorded. Cycle routes may be inspected by bicycle or on foot.

Inspections are to be conducted in accordance with the Council's procedures for the health, safety and welfare of its employees and others.

As a minimum:

- All staff engaged in safety inspections must wear high visibility clothing to BS EN 471 class 3.
- All vehicles used to carry out mobile inspections shall be liveried up to an appropriate standard and all necessary vehicle checks shall be carried out prior to inspections being undertaken.
- Mobile Inspections should be undertaken by two people. The Council's Lone Working Procedures should be followed when an officer is undertaking other inspections on their own.
- Should it be necessary to stop the vehicle for more detailed investigation, it should be parked off the live carriageway wherever possible. If this cannot be achieved, then there must be clear visibility in both directions and the roof mounted beacon must be switched on. Traffic must not be forced across any continuous solid white centre line. If this cannot be achieved, advanced temporary traffic signing must be installed.

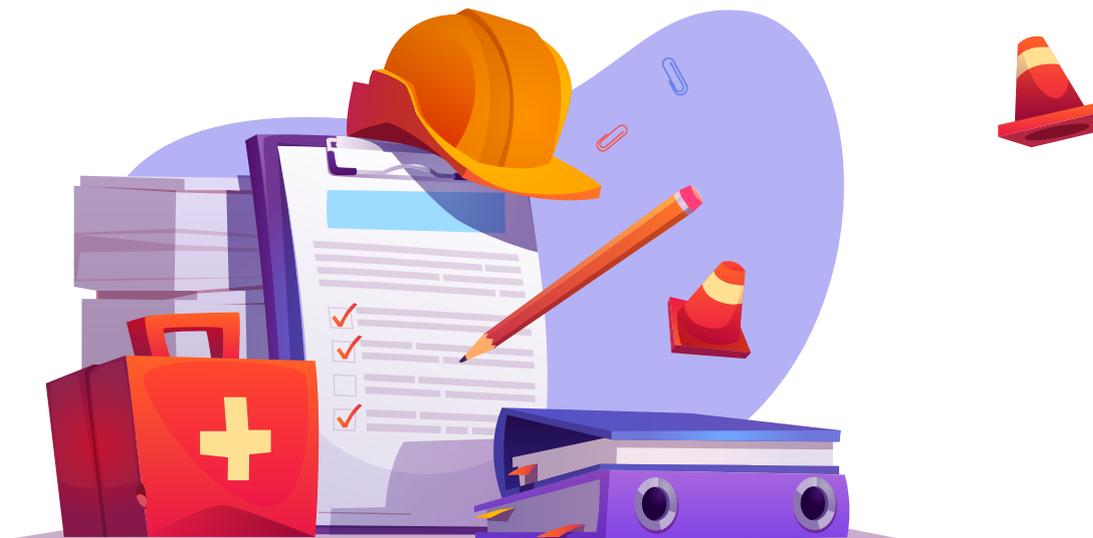
If a defect is a serious hazard to road users, full traffic management should be installed. If this is not practicable, the safety inspection vehicle should remain at the hazard until it is in place.

All inspection vehicles should carry a minimum of six 750mm traffic cones. The cones should be kept clean and should be inspected quarterly and replaced as necessary. A record of these inspections must be kept within the vehicle.

All inspecting staff should carry material for safely and clearly marking identified defects.

In addition to any other equipment, they consider necessary, Officers should record all defects on the Roads Asset Management System via their mobile handheld device when it is safe to do so. The mobile device should not be utilised whilst driving the vehicle.

Any roads inspection staff should also carry a copy of "Safety at Street Works and Road Works, A Code of Practice".



11. Inspector Competency

For this Plan, 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 Plan, 'inspector' is not utilised exclusively for a person who mainly completes the routine road asset safety inspections, but can include Team Leader, Engineer, Technicians, Team Coordinators or other staff within the authority who have been assessed by the authority to achieve the authority's required level of competency.

11.1 Safety Inspection Training

East Dunbartonshire Council as the Road Authority must ensure that all Road Technicians and Roads Inspectors are suitably trained and competent in carrying out safety defect inspections. To ensure a consistent approach across all Local Authorities those undertaking the inspections are encouraged to complete the SCOTS Risk-based Approach to Safety Defect Inspections training.

SCOTS provide 'Train the Trainer' training with a trainer's toolkit containing: a Trainers Guide; presentation slides; assessment papers and marking schemes for local training of Roads Inspectors. 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 run periodic Train the Trainer sessions as part of the SCOTS RAM Project, depending on requirements.

The Service has four officers who have completed the SCOTS 'Train the Trainer' training who can/will cascade the training to other members of their teams to ensure a consistent approach is being taken.

A Training Matrix is maintained to ensure training records are maintained for all relevant officers undertaking inspections on behalf of the Council.



11.2 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, the Roads Network Operations Team Leader and/or the Senior Roads Technician shall work with the inspector to mentor, develop, document, and implement a Training Plan to assist them to meet the necessary level of competency.

The Training Plan is evidence that East Dunbartonshire Council as the road authority is supporting the inspector, assisting them to achieve the level of competency required and ensuring consistency across the authority's Roads Inspectors.

The Training Plans are kept 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

Review of inspector training plans are conducted at regular intervals to ensure the plans are progressing as anticipated, to sign off key areas completed and to amend the plans, if required. Records of the reviews and any actions shall be maintained and held against the inspector's "Training and Competency" record.

11.3 Training and Competency Records

East Dunbartonshire Council maintains a "Training and Competency" record (Matrix) and this record should be regularly reviewed and updated 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.

Inspector training and competency records will be maintained and reviewed annually for completeness as part of the overall Council Performance Development Review (PDR) process 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 is held within the individual employee's personnel file within the Council's I-Trent System.

12. Other Inspections

12.1 Service Request Inspections – Externally Reported Defects

East Dunbartonshire Council as the Road Authority receive reports of defects from a number of different sources, such as Police Scotland, other Emergency Services, elected members, public, public utilities and other agencies; these Service Request reports are logged within the Service's Roads Management System (RMS) and inspected using the same risk-based approach previously described with remedial action identified and response priorities allocated. This information is then passed via RMS to the Roads Operations Team for appropriate remedial action.

12.2 Road condition inspections (or structural condition surveys)

Various asset condition surveys are undertaken by technicians/engineers/inspectors on a pre-planned basis, with results stored in the Roads Asset Management System. In addition, the SRMCS condition survey (including skid resistance) for carriageways is undertaken by an external contractor annually. These surveys are stored in the RMS and used as the core baseline information for the asset management system, to then develop immediate actions or longer-term investment programmes. Detail of the road condition survey procedure is shown in [Appendix 1](#).

12.3 Utility company apparatus

All organisations working on the Public Road, including EDC, must promote and record all works on the Scottish Road Works Register ([Scottish Road Works Register \(SRWR\) | Scottish Road Works Commissioner](#)). The New Roads and Street Works Act and associated Codes of Practice provide the guidance that both EDC, as the Roads Authority, and Statutory Undertakers (SU's) must adhere to.

Permissions and intentions to issue licences (Section 56 & 109 for other contractors wishing to undertake works on the Public Road Network) shall follow the process detailed within EDC guidance. The Permit process is shown in Appendix 2.

The list of traffic sensitive streets is managed within the Local Street Gazetteer and Associated Street Data. Associated Street Data provides extra information about a road, mostly to ensure safety and make sure road works are efficient. Special Designation Records exist to help define the special attributes of a road: -

- traffic sensitive streets (high traffic flows at particular times of the day or week)
- streets with special engineering difficulties (e.g., structures)
- speed limit data
- level crossing safety zones
- environmentally sensitive areas
- streets with special surfaces (eg town centres, natural stone materials etc)
- streets with priority lanes
- streets with special construction needs
- height, weight, and width restrictions
- direction restrictions

This data is maintained by the Road Asset Coordinator.

Service operational staff hold local coordination meetings with all utility companies with a working interest in the area on a quarterly basis (minimum). In addition, management meetings are held through Area Roads Authorities and Utilities Committee (Scotland) [RAUC(S)] [Roads Authorities & Utilities Committee \(Scotland\)](#) | [Scottish Road Works Commissioner](#) meetings three times per year. Further intervention is undertaken as required.

Performance is monitored and discussed at the local coordination meetings. Failure to address poor performance will lead to the issuing of Improvement Plans which will be highlighted to the Scottish Road Works Commissioner.

Reports of defects relating to utility company apparatus are logged within the Services' RMS and inspected using the same risk-based approach previously described with remedial action identified and response priorities allocated. This information is then passed via RMS to the Roads Operations Team who will contact the relevant utility company and agree the required remedial action.

12.4 Service Inspections

The service has responsibility for statutory condition inspections of the Council's bridges and other structures. This is managed and delivered as outlined in [Appendix 3](#).

The service also has responsibility for the inspection and reporting of drainage assets, including gullies, SUDS (Sustainable Urban Drainage Systems) features, and watercourses associated with the road network, (including the trash screens). This also includes flood defence assets. This is outlined in [Appendix 4](#).

The Service has responsibility for the inspection and maintenance of streetlighting, and this is detailed in [Appendix 5](#).

The Service has a responsibility for inspecting road safety assets such as traffic signals, traffic signs, road markings etc and this is detailed in [Appendix 6](#).

Finally, vehicle restraint systems (barriers) are inspected, assessed and repaired in accordance with [Appendix 7](#).

12.5 The Scottish Road Works Commissioner

The Scottish Road Works Commissioner is an independent public official established under section 16 of the Transport (Scotland) Act 2005 and is accountable to the Scottish Ministers and ultimately the Scottish Parliament. The Commissioner's aim is to improve the planning, co-ordination and quality of road works throughout Scotland.

The Commissioner monitors performance, promotes and encourages good practice across both utility companies and roads authorities. The Commissioner also has powers to impose financial penalties on roads authorities who systematically fail in their duty to co-ordinate and upon utility companies who systematically fail to co-operate when undertaking road works.

The responsibility for the day to day management and co-ordination of works undertaken on roads is set out below:

- Roads authorities have a duty to co-ordinate all road works carried out on any road for which they are responsible;
- The reinstatement of road surfaces remains the responsibility of the party undertaking the works. Road's authorities have powers to inspect road works to ensure that utility companies meet their obligations;
- Traffic management at road works (cones, signs and barriers) is the responsibility of the party undertaking the works; and
- Roads authorities are responsible for any decisions related to the repair and maintenance of their roads.

The SRWC actively monitor the performance of Roads Authorities and Utility providers undertaking works using their own Inspections Officers.

The SRWC also issue quarterly and annual reports to highlight performance and if there is a need for improvement or actions for the Roads Authority.

13. Public Liability Claims

All third party claims related information is managed by the Council's Risk & Insurance Section, and their external legal support.

On request following a claim, Road Maintenance staff provide Insurance Reports detailing relevant safety inspections, service requests, works instructions and reinstatements undertaken around the locus. This information is held within the RMS with a reporting function which has been developed to provide consistent output.

All communication with the applicant is undertaken by the Council's Risk & Insurance Section and target timescales for responses have been agreed.

14. Adoption, stopping up and disposal

14.1 Adoption

New Developments

If a development requires planning permission and is wholly within the existing publicly adopted roads area, then an application for Section 56 approval would be required along with subsequent inspections under Section 56 of the Roads (Scotland) Act 1984. If a development will extend the existing road in any way, or add new road to it, then an application for Road Construction Consent would be required, under Section 21 of the Roads (Scotland) Act 1984.

With the exception of industrial roads, asset acquisition/adoption for all of all roads is in accordance with the Roads Development Guide. The Roads Development Guide is used for industrial roads. In addition, there is specific guidance issued to developers in relation to the design of road drainage.

During the construction of roads, all sites are inspected by the Roads Development Officer/Technician to ensure the works are being undertaken in conformity with Council requirements and are constructed in accordance with the approval/consent. A minimum 12-month maintenance period will then apply from the date of the completion inspection. A satisfactory final/adoption inspection will be necessary at the end of the maintenance period to confirm that the road has not suffered unacceptable levels of deterioration during that period. This process is further detailed in [section 16](#) and [Appendix 8](#).

Existing Roads and Footways

Under Section 16 of the Roads (Scotland) Act 1984, EDC will, upon request, adopt a new road (and associated footway/verge) constructed in accordance with a construction consent and satisfactory inspections. Adopted roads shall be added to the List of Public Roads, in terms of Sections 16 and 18 of the Roads (Scotland) Act 1984, as appropriate.

Drainage

New drainage installations are generally carried out by developers during construction of new roads to serve new developments and are subsequently adopted by the Council assuming they meet the required standards. A Section 7 agreement has not yet been agreed between the Council and Scottish Water but would allow EDC and Scottish Water to add site specifics to a schedule of the agreement for the purpose of, for example, changing the ratio of responsibilities or defining other site specifics. A Section 7 schedule would then provide a document detailing responsibility for maintenance. This document would then include site plans showing areas to be maintained, planting details and an overall drainage design certificate.

EDC has an obligation under the Roads Scotland Act to ensure the road network is clear of flooding. This must be considered before identifying schemes for retrofitting SUDS within the existing road network and installing SUDS within new developments.

14.2 Stopping up and disposal

The removal of an asset from the List of Public Roads and from maintenance schedules is included under Section 16 of the Roads (Scotland) Act 1984.

15. Customer Engagement

The Road Service is very responsive to the needs of communities and those living, working, or visiting East Dunbartonshire. A number of complaints, service requests and other contact is received throughout the year and is managed through the Council's CRM (Customer Records Management) system. There are established links between the CRM system and the processes used by the Road Service to enable timeous and accurate communication.

Maintenance of the road assets is considered a critical frontline Council service and one which the customer will report directly to the Council, via website, email or phone, for effective repair when it becomes defective.

16. Road Development Control and Construction Consent

In accordance with Section 16 of the Roads (Scotland) Act 1984, the Roads Authority will, upon request, adopt – i.e., add to its list of public roads and maintain thereafter – any new road (including any associated footway, cycle track or verge) constructed in accordance with Construction Consent.

This Consent process is used for all new developments which require planning Consent.

The planning application is received and sent out to Roads Development Officer for comment. There may have been some pre-planning discussions with the developer, and these will have been reflected in the application.

Site inspection(s) and relevant local information will be considered. Comments are then returned from Roads, which may be preceded by direct discussions with the Planning Officer.

A meeting will be arranged with planning and the developer to seek agreement and to agree all required details.

If planning is agreed/granted in due course then the Roads Development Officer will continue to engage with the developer in advance of adoption to ensure that the carriageways, footways, drainage systems and street lighting are completed to the agreed standard as per the original planning conditions.

There will then be a final check on plans and any relevant documents before the Form CC1 is received from the developer.

If the CC1 is acceptable, Form CC4 and covering letter will be issued, and an invoice for inspection fees will be issued.

The agreed road bond will be requested from the developer and a copy passed to legal, to record in file.

Works will begin on site start, with regular inspections undertaken, and site photos recorded in site diary.

The bond may be reduced as works proceed.

Once the site is completed, there will be an inspection for readiness to go into a 1-year maintenance period.

A completed street lighting certificate will be required at this stage.

At the completion of the 1-year maintenance period (refer to Appendix 8), a final inspection will be carried out. If all work is to the required standard, the works will be adopted the remaining bond released.

17. Winter Service

The Council has a duty to prevent snow and ice endangering safe passage of pedestrians and vehicles over the public road. The Road Maintenance Winter Team sets out how winter maintenance services will be provided for East Dunbartonshire, with day-to-day operational decisions made by a team of winter controllers. All winter maintenance is carried out in accordance with the [EDC Winter Maintenance Plan \(WMP\)](#). The WMP is reviewed and updated annually and is not included as an appendix.



Appendix 1 – Roads Conditioning Survey Procedure and Scheme Prioritisation

1. Introduction

This procedure sets out the adopted recommended method for undertaking a visual carriageway and footway condition assessment, and then to assess relative priorities of schemes and treatments. It is designed to enable competent Roads employees to carry out the survey in conjunction with other inspection duties. East Dunbartonshire Council have chosen to adopt the recommended SCOTS approach to ensure continuity with other Local Authorities.

2. Purpose

The condition survey method described provides data that can be used to:

- Prioritise and programme renewals/resurfacing schemes
- Record and report condition (locally and nationally)
- Enable financial reporting requirements to be met (asset valuation)

3. Outputs

The survey results are ratings for lengths of carriageway and/or footway that would realistically be used in schemes. The results are summarised to record and report overall condition. Condition is reported by percentage in each of four condition categories for each hierarchy.

4. Road Carriageway Condition Inspections (or Structural Condition Surveys)

These are undertaken to consider the general condition of the individual roads and footways and the need for planned structural maintenance that can be programmed accordingly.

Inspections for the carriageway asset are presently undertaken through the national Scottish Road Maintenance Condition Survey (SRMCS). Upon receipt of the SRMC Survey report, the Roads Operations Team will organise a further visual condition survey of assets by the relevant Technician and/or Inspector to determine if the location should be included in the Service's Annual Resurfacing or Surface Treatment Programme.

This condition survey will be used to prioritise locations for inclusion in upcoming resurfacing programmes. Results will be recorded on RMS and will be updated regularly as work is completed or deterioration discovered. It does not report individual defects and does not replace the Roads Safety Inspections Procedure. Individual isolated defects that will be fixed by reactive repair should not influence the condition score. A record of the surveys and programmed works is retained within the Services Roads Asset Management System.

5. Carriageway Evaluation

The evaluation of the carriageway involves a visual carriageway condition assessment of the surface by competent employees together with a potential impact assessment (Matrix risk assessment).

The condition assessment takes into account of:

- Ironwork condition, surface water and drainage condition
- Surface irregularity/deformation
- Whole carriageway deterioration
- Matrix risk assessment of future deterioration and user risk
- Road hierarchy, speed and usage

The rating criteria is outlined below:

Surface	Structure	Rating	Visible Distress	Treatment	Comments
Good	Good	1	Little or no surface defects (<10% of surface)	Nil	New surfaces or other surfaces where no treatment is required
Fair	Good	2	Surface defects (raveling or bleeding) up to 30%, some localised structural distress may be present in small quantities (edge deterioration, potholes), occasional patching, generally in reasonable condition, road shape good.	Preventative maintenance	Preventative treatment design to prevent escalation of deterioration.
Poor	Fair	3	Rutting or alligator cracking up to 25%. Some localised structural distress may be present in small quantities, pavement out of shape, with some surface distortion.	Resurface; overlay/inlay	Replacement of the surface layer will restore to an acceptable condition.
Poor	Poor	4	Rutting and alligator cracking over 25%; pavement out of shape with significant surface distortion, Significant edge problems present, potholes, patches generally in poor condition.	Structural overlay or inlay	Structural overlay / inlay required to strengthen road, localised patching and repairs required prior to overlay or inlay.

6. Footway evaluation

The evaluation of the footway also involves a visual footway condition assessment of the surface by competent employees. The criteria used for footway assessment are as follows:

- Kerb upstand, kerb deterioration and alignment
- Footpath/footway deformation
- Footpath/footway deterioration and ironwork levelling issue caused by deterioration.
- Surface water
- Matrix risk assessment of future deterioration and user risk
- Footway hierarchy, speed and usage.

The rating criteria are those recommended by the Footway and Cycle track Management Group and used in the United Kingdom Pavement Management System (UKPMS) survey method. The UKPMS survey method is a standard for computer systems that support the management of scheduled maintenance through the monitoring of condition on UK local authority hard paved areas including roads, footpaths, and cycle tracks.

7. List of resurfacing schemes

Footway Condition Level		
1	Acceptable	As new
2	Safe, but of poor appearance	Aesthetically impaired
3	Minor Deterioration	Functionally impaired
4	Major Deterioration	Structurally impaired
K	Kerb Deterioration	Optional comment



The carriageway and footway condition assessment outcomes will be collated and recorded on the Roads Maintenance and Management System database. These assessments will be re-evaluated annually to consider any possible deterioration in condition as a result of use and adverse weather. This re-evaluation may take the form of a visual inspection, however where unexpected deterioration is identified the location will be re-assessed and the RMS database updated.

The methods used to optimise the capital investment programme have been developed from best practice methods found in “Well-Managed Highway Infrastructure – A Code of Practice”.

- **Highway Maintenance/Improvement Issues** – condition data available for each asset will be analysed to identify need for maintenance and/or improvement.
- **Network Hierarchy** - greater priority will be given to roads and key assets on roads that have the greatest usage or need.
- **Risk** – a higher priority will be given to schemes that pose a risk to public safety.
- **Value for Money** – the ‘right treatments at the right time’ approach will be taken, in order to produce cost effective solutions.
- **Network Management** - works will be programmed to minimise disruption to users and maximise benefits to the community by combining schemes for different assets together where possible.

Each asset has its own set of prioritisation criteria and weighting-sets based on the principles above which take into account the unique attributes and requirements of each asset. These criteria will be regularly reviewed (in line with the Asset Strategy update frequency) so that they can take account of changing requirements and priorities.



8. Conditioning Assessment

The carriageway condition assessment will highlight any specific issues associated with a location and highlight the suitable treatment required to address the poor surface condition. The treatment applied to a location may vary dependent on the level of deterioration discovered during the condition assessment and may include:

Repair Method	Typical Condition
Structural Patching	Minimal surface repairs required to address highest volume of defects
Surface Treatment	Sub-structure good with only minimal surface repairs required
Resurfacing	Surface course has deteriorated beyond levels reasonably maintainable by any other means however sub-structure in good condition
Road Reconstruction	Location where surface course and sub-base levels have deteriorated

Additional alternative treatments may be considered based on new technologies and treatment products being developed across the industry, including those with reduced carbon impact.

The Roads Network Operations Team will use the outcomes of the carriageway and footway condition scores to recommend the specific treatment for each prioritised location. The outcomes will be used to prepare the resurfacing and treatment programme for the coming year. The scoring process used for this is shown in [ANNEX 1](#) to this Appendix.

In general, this programme will include the locations most in need of resurfacing within the available budget. On occasion resurfacing works may be delayed as a result of conflicting utility or development works. Where such instances arise, temporary repairs will be carried out to ensure the continued safe use of road users.

9. 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.

ANNEX 1 to Appendix 1 – Carriageway & Footway Condition Scoring Templates

CARRIAGEWAY CONDITION SCORING		
Specific location:	Carriageway Type:	
Surface Type:	Carriageway Length:	
Audit Date:	Auditor:	
Surface irregularity /Deformation		
Completely uniform surface	0	
Slight undulation of surface	3	
Minor rutting or pushing of surface	7	
Rutting noticeable to drivers, giving uncomfortable journey	10	
Surface shape giving indications of deeper structural damage	14	
Severe undulations indicating major deep structural damage. Surface shape giving indications of deeper structural damage.	20	
Whole Carriageway Deterioration		
New looking surface, no material loss.	0	
Slight crazing of the main running surface.	3	
Start of wheel track cracks and some patches already exist.	7	
Cracking both horizontally and vertically. Existing patches starting to break up.	10	
Serious wheel track cracking and crazing of surface, existing patches failure.	14	
Surface breaking up and liable to cause injury.	20	
Surface water / Drainage Condition		
Sufficient drainage facilities, no standing water after rainfall.	0	
Carriageway surface allowing minor standing water, although most of the water is draining away.	6	
Drainage facilities severely lacking, causing standing water over large proportion of the carriageway.	10	
Severe flooding, lasting long after the rain has dried in surrounding area, causing major disruption to vehicle movements.	14	

Risk Matrix - Probability x impact = Risk						
Probability	Very Low (1)	Low (2)	Medium (3)	High (4)	Very High (5)	Risk Score
Impact						
Negligible (1)	1	2	3	4	5	
Low (2)	2	4	6	8	10	
Noticeable (3)	3	6	9	12	15	
High (4)	4	8	12	16	20	
Extreme (5)	5	10	15	20	25	
Probability:						
Rating 1 = Good condition, probably 5-10 years residual life.						
Rating 2 = Still in good condition, starting to wear in areas but still probably 5-7 years residual life.						
Rating 3 = Reasonable condition, wear and tear starting to show, probably 2-5 years residual life.						
Rating 4 = Poor condition, giving pedestrians difficulties, requires maintenance in the next 2 years.						
Rating 5 = Requires maintenance urgently.						
Impact:						
Rating 1 = No increase in danger levels should be expected.						
Rating 2 = Slight possibility of rise in minor damage to vehicles. . Road condition could cause several minor accidents and incidents.						
Rating 3 = Possibility of rise in more serious damage to vehicles. Road condition could cause several minor accidents and incidents and number of incidents increasing and damages are now more serious compared to last inspection.						
Rating 4 = High risk of injury to pedestrians / damage to vehicles. Road condition could cause major accident and incident.						
Rating 5 = Extreme risk. Road condition could cause death or permanent disability.						
Total Gross Score						
Road Category	Weighting	Bus Route and/or train station	Road officers' local knowledge (i.e., political, Claims, complaint, School, Gritting route, shops etc)	Cycle Use Carriageways that are on EDC cycle Route		
Strategic Route (2)	Gross score X 2.0	Increase score by 10%	Increase the score by 0%-10%	Increase the score by 5%		
Main Distributor (3a)	Gross score X 1.8	Increase the score by 10	Increase the score by 0%-10%	Increase the score by 5%		
Secondary Distributor (3b)	Gross score X 1.6	Increase the score by 10%	Increase the score by 0%-10%	Increase the score by 5%		
Link Road (4a)	Gross score X 1.3	Increase the score by 10%	Increase the score by 0%-10%	Increase the score by 5%		
Local Access Road (4b)	Gross score X 1.00	Increase the score by 10%	Increase the score by 0%-10%	Increase the score by 5%		
Total Net Score with Weighting factors						
Comments:						

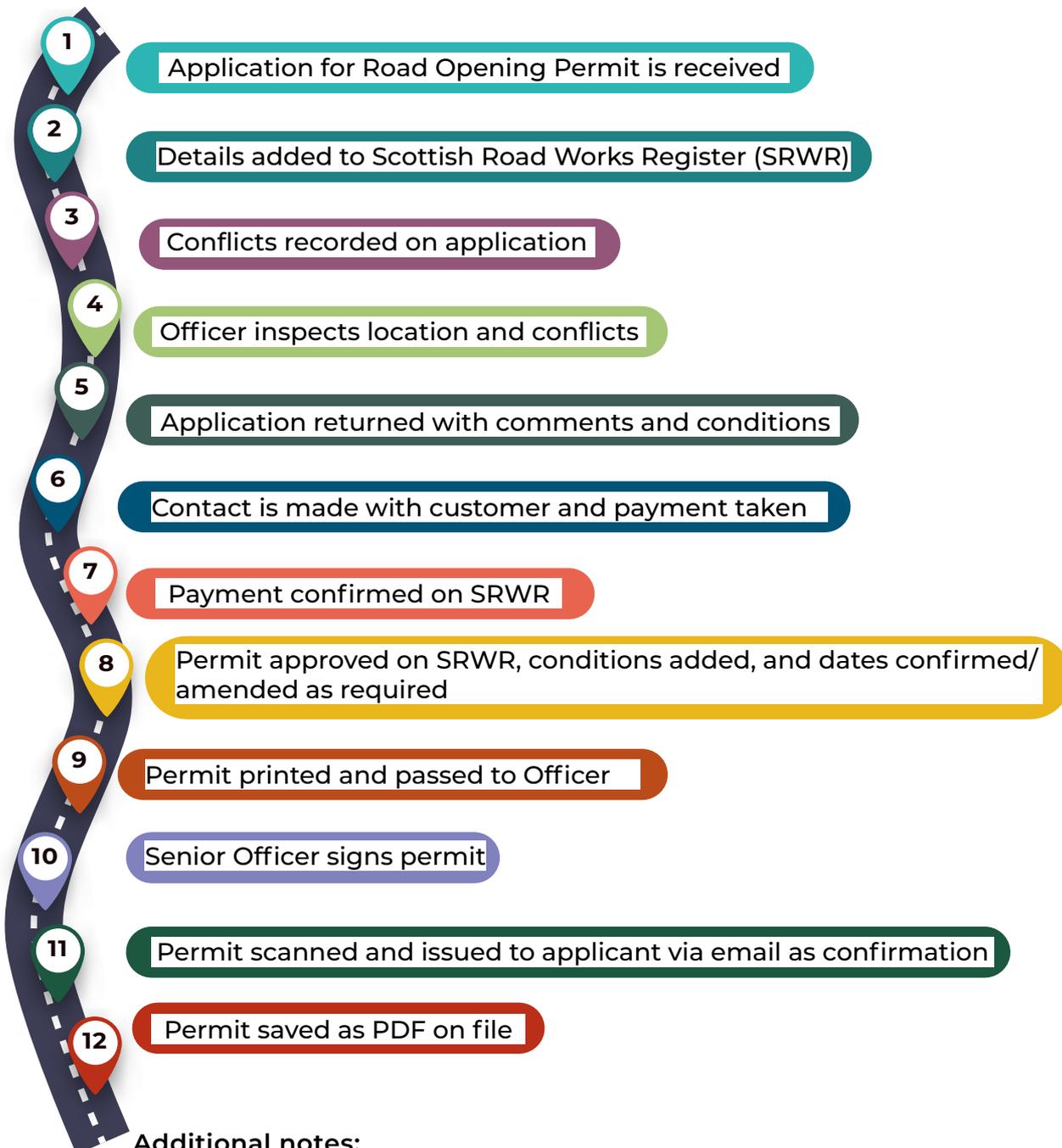
FOOTWAY CONDITION SCORING		
Specific location:	Footway Type:	
Surface Type:	Footway Length:	
Audit Date:	Auditor:	
Kerb Upstand, Kerb Deterioration and Alignment		
New looking kerbs, no unnecessary rise and fall, no trips and kerb upstand between 100mm and 110 mm.	0	
Slightly chipped edges/missing corners, slight rising of few kerbs, occasional trips. The kerb upstand between 70 mm and 100 mm.	6	
Some kerbs may be cracked/spalling, rising of kerbs causing major trips. The kerb upstand between 40 mm and 70 mm.	10	
Missing kerbs/major deterioration, rising of kerbs liable to cause injury. The kerb upstand between 0 mm and 40 mm.	14	
Footpath/Footway Deformation		
Completely flat	0	
Slight undulation of surface.	6	
More serious movement in the surface.	10	
Undulation severe, causing difficulty walking.	14	
Footpath/Footway Deterioration		
New looking surface, no material loss and ironworks are intact and in level.	0	
Slight material loss or damage to flags and is now showing signs of wear and level issues in ironworks.	6	
Approx. 25% material loss, broken flags. It caused some minor level issues in ironworks.	10	
Significant material loss, missing flags, etc. It caused major level issues in ironworks.	14	
Surface water / Drainage Condition		
No standing surface water	0	
Up to 10% of surface covered with shallow pools of standing water.	6	
10-40% of surface covered with shallow pools of standing.	10	
Greater than 40% of surface with major water problems.	14	

Risk Matrix - Probability x impact = Risk						
	Very Low (1)	Low (2)	Medium (3)	High (4)	Very High (5)	Risk Score
Impact						
	1	2	3	4	5	
Low (2)	2	4	6	8	10	
	3	6	9	12	15	
High (4)	4	8	12	16	20	
Extreme (5)	5	10	15	20	25	
<p>Probability:</p> <p>Rating 1 = Good condition, probably 5-10 years residual life.</p> <p>Rating 2 = Still in good condition, starting to wear in areas but still probably 5-7 years residual life.</p> <p>Rating 3 = Reasonable condition, wear and tear starting to show probably 2-5 years residual life.</p> <p>Rating 4 = Poor condition, giving pedestrians difficulties, requires maintenance in the next 2 years.</p> <p>Rating 5 = Requires maintenance urgently</p> <p>Impact:</p> <p>Rating 1 = No increase in danger levels should be expected</p> <p>Rating 2 = Slight possibility of rise in minor injuries to pedestrians</p> <p>Rating 3 = Possibility of rise in more serious injuries to pedestrians</p> <p>Rating 4 = High risk of injury to pedestrians</p> <p>Rating 5 = Extreme risk. Road condition could cause death or permanent disability.</p>						
Total Gross Score						
Usage Category		Road officers' local knowledge (ie political, Claims, complaint, School, Gritting route, shops etc)		Bus route and train station	Off-Road Cycle ways Footway that are on EDC off – Road cycle Route	
Super High Use / Prestige Walking Zones	2.5	Increase total score by 10 %		Increase total score by 10 % for bus route and train station	Increase the score by 5%	

Risk Matrix - Probability x impact = Risk				
High Use/ Primary Walking Routes	2	Increase total score by 10 %	Increase total score by 10 % for bus route and train station	Increase the score by 5%
Medium Use/	1.6	Increase total score by 10 %	Increase total score by 10 % for bus route and train station	Increase the score by 5%
Low Use/ Link Footways or	1.2	Increase total score by 10 %	Increase total score by 10 % for bus route and train station	Increase the score by 5%
Ultra Low Use/ Local Access Footways or	1.0	Increase total score by 10 %	Increase total score by 10 % for bus route and train station	Increase the score by 5%
Total Net Score with Weighting factors				
Comments:				

Appendix 2 - Road Opening Permit Procedure

The process for acquiring a permit is as follows: -



Additional notes:

- Within the SRWR a minimum of three days' notice and one months' notice should be provided for non-traffic sensitive, and traffic sensitive roads respectively as stated in Table 5.5 of the Code of Practice for the Co-ordination of Works in Roads.
- Inspector to liaise with Technical Officer if assistance is required with location, traffic management etc.
- If an e-mail is not available, then the permit should be posted
- All permits to be saved in the RMS
- A minimum of seven working days should be provided to enable permits to be assessed and approved. A minimum of 14 working days' notice should be provided where complex traffic management is proposed.

Appendix 3 – Roads Structures Inspection and Maintenance Procedure

1. Introduction

The Roads Technical & Engineering, Structures Team undertake and oversee the inspection and maintenance of vehicle and pedestrian bridges, retaining structures specifically related to bridges, roads, subways, culverts etc. The team oversee the various assets, complete general and principal inspections.

2. Inventory

The structures asset consists of the following:

- Road Bridges
- Footbridges
- Retaining Walls
- Culverts
- Subway
- Vehicle restraint barriers

There is an inventory of assets which is kept in the Structures Assets Management System.

3. Inspections

3.1 General Inspections

General inspections are undertaken on all structures every two years. General inspections are undertaken in accordance with BD 63/17 Inspection of Highway Structures.

The relevant General inspection programme and associated files and information is retained from the general inspections in the Structures Management System.

3.2 Principal Inspections

Principal inspections are undertaken on all structure every six years, in accordance with BD 63/17 Inspection of Highway Structures. Some difficult access inspections are undertaken by external consultants.

The relevant Principal Inspection programme and associated files and information is retained from the general inspections in the Structures Management System.

4. Network Rail

When working on or in the vicinity of rail infrastructure early and ongoing liaison with Network Rail will be essential and will be factored into the works programming process.

5. Abnormal Loads

Occasionally requests will be received for movement of abnormal loads. The established procedure will be used to manage the movement of such loads over sections of the Council's Road network, to ensure that they can be safely accommodated for dimension and weight. The haulier, Police Scotland and the Council will work together to make the most appropriate arrangements for all movement requests.

The service uses ESDAL (Electronic Service Delivery for Abnormal Loads). Requests are sent to the Structures Engineer and Senior Traffic Officer. Police Scotland are informed separately as part of this process.

6. Scour

Road structures are increasingly being exposed to higher volumes and speeds of water in watercourses, and the damage to foundations and below-water elements must be inspected and assessed on a regular basis. The management of structures that are subject to scour will include identification of at-risk structures, through to identifying their maintenance requirements and prioritisation. A programme of scour assessment is included within the Principal Inspection programme for structures.

7. Routine Maintenance

The following types of typical faults are undertaken as routine maintenance:

- Vegetation clearance
- Masonry pointing repairs
- Graffiti removal
- Steel repainting
- Concrete repairs
- Timber board replacements

7.1 Management Processes – Pre-Construction Works

The following process details the management aspects of completing structural maintenance works on an individual structure/structural element from the improvement programme once they are approved. These will be managed by the Structural Engineer:

- Detailed design prepared and cost estimate compared to initial budget cost
- Complete design process and seek prices/tender – evaluate total expected cost
- Assess an estimated timeframe for the completion of the physical works and update SRWR
- The total expected cost of the proposed works will be compared with approved budget, programme finalised, for approval to proceed from the Executive Officer
- Confirm timeframe in SRWR

7.2 Management Processes – Post Construction Works

On completion of the maintenance works the Structural Engineer will record the following information:

- Inventory Information – Complete the Structures Inventory within the SMS
- Date completed
- Financial details of work invoiced
- Health and Safety File compiled, including as-built drawings
- Any certification required

8. Investment Programming

The bridge investment capital programme and spend profile is set on a routine five-year cyclic basis. By setting five yearly budgets and service level targets, the programming of planned works can be done more efficiently and the costs and amount of routine/reactive works can be monitored against specific targets over time.

Currently, the structures work programme is determined using the data in the structures management system with priority given to the following:

- Structures with structural defects which have a direct impact on their load bearing capacity
- Structures with safety related defects such as sub-standard parapets
- Structures with defects which require to be remedied to prevent further deterioration or more serious problems developing
- Structures requiring painting or aesthetic improvements
- Structures which are redundant and may be disposed of by infilling or demolition

The available funding is allocated to each of the above work-types on an annual basis to suit the importance or criticality of the works identified. This is intended to deliver the identified levels of service. Precedence is normally given to structures on higher category roads and on roads carrying higher volumes of traffic, or where structures require immediate repair or replacement following accident damage.

It is important that the management planning takes account of the entire lifecycle of structures and seeks to minimise whole life costs.

The effects of climate change will increasingly feature in decision/making in the future. Risks of failure, and adaptation needs, will be assessed, recorded, and utilised to inform investment.

The cost projection spreadsheet will enable choices to be made about budget levels and investment strategies for renewals. This will direct the development of works programmes.

9. Performance Measurement

Performance measurement is carried out under the SCOTS Roads Asset Management (RAM) Project utilising the APSE/SCOTS templates. The Asset Co-ordinator is responsible for ensuring the completion of the APSE/SCOTS annual submission.

Appendix 4 – Drainage and Flood Defences Inspection and Maintenance Procedure

1. Introduction

The Roads Technical & Engineering, Flood Risk & Drainage Team undertake and oversee the inspection and maintenance of the East Dunbartonshire Council Flood Defences. However, it should be noted that there are different roles and responsibilities of various stakeholders for drainage and flooding assets in Scotland. East Dunbartonshire Council is responsible for flood defences associated with rivers, burns and watercourses that may impact on the public road network. The team also inspect, and monitor adopted Sustainable Urban Drainage (SUDS) features. The Road Drainage System is inspected and maintained by the Roads Network Operations Team. This includes the annual inspection and clearance of road gullies and channel drains on all adopted road in its Authority area.

It should also be noted that Scottish Water are responsible for surface water and foul sewers including run-off from private curtilage and roof runoff. Under Sewers for [Scotland 4 Sewers for Adoption 7th Edition \(scottishwater.co.uk\)](http://scottishwater.co.uk), they will be responsible for all drainage SUDS which collect surface water and foul from new and existing developments.

Any private drainage or watercourses (land or road) will be the responsibility of said Landowners. Further information can be found on the [Council website](#).

2. Inventory

2.1 Flood Defences

In accordance with the Flood Risk Management Act 2009, a flood register is maintained by the Service, including the inspection and maintenance of existing flood defences associated with the River Kelvin Flood Defence Scheme.

East Dunbartonshire has commissioned smaller flood alleviation schemes within its area to minimise flood risk to locals. The inspection and maintenance of these schemes are included within the service to ensure any risk is minimised.

2.2 Hierarchy

The drainage network within East Dunbartonshire is categorised as follows:

- Flood – pluvial
- Flood – fluvial
- Arterial
- High: Leaf Fall
- General

2.3 Road Drainage System (Surface Water Drainage)

The road drainage asset is made up of the following elements:

- Carriageway gullies (including connections to surface water pipework)
- Road drains and manholes
- Kerb and channel drains
- Sustainable Urban Drainage Systems (SUDS)

The inventory is currently held on the Roads Asset Management System. The assets are continually reviewed to ensure that the inventory is updated as new developments are adopted. The information is utilised to plan inspections, works and maintenance of the road drainage system on adopted carriageways.

The condition of underground assets is largely unknown and the condition data for manholes, pipes and kerb drains is limited. If designed and installed correctly, underground drains can have a long-life expectancy and require little maintenance. However, ongoing works by utility companies are likely to be damaging these drainage assets. It should also be noted that Scottish Water hold some records as in some instances the Roads Drainage System will connect to the Scottish Water Sewer System. This is known as a combined system, but the Council is not permitted to work on the Scottish Water assets and vice versa.

Sustainable Urban Drainage Systems are currently maintained within the RMS. Due to the ever-expanding number of SUDS being publicly adopted by EDC, a separate SUDS Maintenance Manual will be developed to specifically cover the unique maintenance and inspection requirements of these new assets. These will also be mapped to capture their locations and condition.

2.4 Gully maintenance – inspection and cleaning

The Roads Network Operations Team currently undertake a minimum annual inspection of the gullies associated with the Road Drainage System. In addition, ad-hoc inspections are carried out on request as resources allow. However, known 'hot spots' where increased instances of road flooding (often affecting neighbouring property) are subject to inspection prior to severe weather warnings. A cyclic programme of gully emptying works is based on the following:

Defect Category	Target Response Time
Flood Route	Three times per year
Primary (Arterial) Route	Minimum once per year
Secondary (General) Route	Minimum once per year
Traffic Sensitive – Restricted Routes	On demand (minimum once per year)
Reactive Repairs/Inspections (external contract)	As required (on demand)

The known flood hot spots and routes are currently being rationalised to ensure that the topography of road gully locations is taken into consideration.

In addition to the cyclic programme, visual and physical inspection during routine maintenance works contributes to the identification of drainage defects. These defects are recorded in the Roads Asset Management System with work instructions passed to the Roads Network Operations Team for action.

If an issue is persistent or cannot be resolved by the Roads Network Operation Team this information is passed to the Flood Risk & Drainage Team to arrange further investigation, usually in the form of a CCTV inspection by an external contractor to identify the cause of the problem i.e., carrier pipe collapsed or blocked by tree roots. If further action is required this can be completed by the internal resources but may be sent to an external contractor if the blockages requires immediate action.

Issues affecting the delivery of this level of service include:

- Reactive Maintenance – Resources being redeployed to attend flood events and blocked gully reports
- Parked Vehicles – Temporary Traffic Regulation Orders (TTROs) and noticing required for the removal of obstructing vehicles. The programming and cost implications associated with parked vehicles is significant



Appendix 5 – Street lighting Inspection and Maintenance Procedure

1. Introduction

The purpose of this procedure is to outline the requirements for the provision, installation, and maintenance of all types of external street lighting which is, or will be, the responsibility of East Dunbartonshire Council as the Roads Authority.

Street lighting helps to increase the use of road network after dark. The provision and maintenance of effective and efficient street lighting enables roads and footpaths to be used safely, giving carriageway and footway users more confidence whilst improving their sense of personal safety and security.

Road types and usage vary in nature and the level, type, design, and maintenance of lighting systems may also vary.

On principal and distributor roads, where traffic speed and flows are important, vehicles dominate, and street lighting systems should be designed for this purpose.

On residential roads, where the pedestrian and cyclist are dominant, the lighting system should be designed appropriately around their needs.

This procedure outlines the processes and practices that contribute to the aims of the Roads Network Operations and Technical and Engineering Teams including:

- Maintaining good quality street lighting
- Improving maintenance frequencies
- Achieving minimum outages
- Increased use of energy efficient technology
- Reduction of CO2 in line with the East Dunbartonshire Council Climate Action Plan
- Energy reduction

The details of the procedure are designed around the following headings:

- Summary of Standards and Lighting Provision
- Main Objectives
- Lighting Standards
- General Requirements
- Maintenance Requirements Assessment of Street Lighting Schemes
- Performance Indicators
- Introduction of Central Management Systems
- Passively Safe Lighting and Traffic Signs

2. Overview

2.1 Standards

All street lighting provided on the adopted roadway shall be designed and installed in accordance with BS5489-1: 2013 + A2:2008, Code of Practice for the design of road lighting part 1: Lighting of roads and public amenity area and BSEN 13201-2:2003, BS5489-2-2003, part 2 Lighting of Tunnels, PD CEN/TR 13201-1-1:2004 Selection of Lighting Classes, BS EN 13201-3:2003 Calculation of Performance, BS EN 13201-4:2003 Methods of Measuring Lighting Performance and BS 5489 Guide to General Principles. Further Legislation and Standards are listed in Section 15.

2.2 Provision of Lighting

The reduction of nighttime accidents and the subsequent increase in the nighttime safety of road users is a major benefit to be gained by the provision of street lighting. The potential reduction in nighttime accidents may be used as a means of assessing the value of street lighting as a road safety action.

Road safety is not the only benefit from the provision of street lighting. Various studies have demonstrated that the provision of good street lighting can reduce crime levels and the fear or perception of crime.

Section 17 of the Crime and Disorder Act 1998 requires all local authorities, including joint authorities and police authorities, to consider crime and disorder while exercising their duties. The Act also places an obligation on Local Authorities to develop and implement safer community strategies. The presumption must now be that improved street lighting be included within local strategies i.e., Local Outcome Improvement Plan (LOIP) alongside other physical and social improvements.

In determining whether lighting should be provided at a particular location or length of road, unless consultation and demand determine otherwise, then the following categories apply:

Category and/or Location Type	Instruction
Roads in Rural Countryside	Generally not lit except residential and industrial estates. Any lighting will be in keeping with the rural character of the local area
Roads in Conservation Areas	May be lit, however, specialist lighting considered a preferred option
Roads in Urban Areas	Generally lit
Urban	Generally lit
Rural	Individual assessment required

3. Main Objectives

Another aim is where street lighting plays a positive part in the regeneration of settlements that have suffered economic, social and environmental decline and in contributing to make the Council area a more attractive place to live, work and visit. Further contributions can be made by minimising light pollution and using energy efficient equipment.

Street lighting is provided under the Roads Scotland Act 1984 to prevent danger to road users and not directly for other reasons, although the demand on the service is increasing to aid crime prevention. The Council objectives can be achieved by:

- Providing a safe road network for all road users
- Minimising the environmental impact of street lighting
- Ensuring that street lighting is in keeping with and integrated into the infrastructure
- Helping to reduce crime and the perception of crime
- Providing a cost-effective street lighting service
- Improving energy conservation and sustainability
- Prevention of fatalities and serious injuries caused by vehicular collisions with street furniture using passively safe lighting and other equipment

4. Lighting Provision

The Roads Scotland Act 1984 continues the legislative requirement of previous Acts to ensure Roads Authorities make roads as safe as possible. Road or street lighting has long been seen as an effective way to make vehicle and pedestrian traffic safer. Local communities expect street lighting to be installed and maintained to a high standard.

The Council's Street lighting stock numbers approaching 20,000 lighting units. The Council provides capital and revenue funding to replace and maintain the lighting stock. The Roads Street Lighting Team monitors running costs of the lighting stock with the view of reducing where practical the associated cost on maintenance through regular inspection and upgrading aging equipment to more efficient modern streetlighting once current equipment life cycle comes to an end or sooner if additional funding becomes available.



5. Lighting of Pedestrian Crossings

Pedestrian Crossings are provided to give safer access and easier movements to pedestrians wishing to cross the road. As the pedestrian is more vulnerable in an accident involving a vehicle, the vision of all users is of paramount importance. During the day this is generally not an issue. However, at night a lighting system shall be provided to enable pedestrians to clearly judge traffic conditions and drivers to correctly interpret the visual scene and view pedestrians.

Crossings shall ideally be lit as a conflict area as detailed in the current British Standards. Where nighttime use is high then supplementary direct illumination over the full area of the crossing using a light source differing from the main road may be considered.

The Institution of Lighting Engineers Technical Report TR12 Lighting of Pedestrian Crossings shall be used for guidance and each crossing shall be assessed on its own merits.

6. Lighting of Traffic Calming Features

Traffic calming is designed to reduce the speed and type of traffic using a road. Physical barriers are placed in the road reducing carriageway width or adding speed humps or cushions.

The Roads Scotland Act 1984 provides guidance in The Road Humps and Traffic Calming (Scotland) Amendment Regulations 1999.

The Regulations do not specify the level or standard of lighting required but a system of lighting designed to BS5489 for the classification of the road is required to cover approaches to and the position of all traffic calming features.

7. Lighting of Pedestrian Subways

Subways are provided as a safe route for pedestrians and cyclists to cross traffic routes. This provision should be always maintained in a safe and usable condition. Lighting shall be designed and installed in accordance with BS5489 part 9, Section 10, Code of Practice for Lighting for Urban Centres and Public Amenity Areas and, in addition, the lighting of the exits and entrance approaches should be adequately lit to reduce transitions in lighting levels. It is advised that highly vandal resistant fittings shall be used in such subways to deter damage from anti-social behavior.

8. Obtrusive Lighting (Light Pollution)

Obtrusive light is light which falls outside the area to be illuminated which can cause discomfort, annoyance, and distraction or reduces the ability to see. Obtrusive light is referred to as light pollution which can be divided into three main categories:

- Sky glow
- Glare
- Light trespass

The obtrusive light shall be restricted by:

- The control of the type of light source e.g., LED light units
- Restricting the level of light emitted at high angles between 70 and 90 degrees
- The use of full horizontal cut off (flat glass) luminaires where appropriate

Attention is drawn to the ILP Guidance Notes for the Reduction of Obtrusive Light which includes the recommendation that for road lighting installations, light near to and above the horizontal should be reduced. The use of full horizontal cut off luminaires installed at 0° uplift will minimise visual intrusion within the landscape as well as upward light. In urban situations luminaires fitted with shallow bowls provide good control of light near to and above the horizontal.

9. Luminaires

Luminaires used for road lighting shall be integral and fitted with electronic control equipment. The luminaires should be manufactured to BS EN 60598-2-3 2003 and incorporate an efficient optical system to direct the light onto the roadway. To ensure minimum environmental pollution of the night sky the upward light from the luminaire shall be kept to a minimum. Luminaires will be specified with due consideration of the Institution of Lighting Engineers Guidance Notes for the Reduction of Obtrusive Light.

All luminaires shall be to a robust standard to prevent the ingress of dust and moisture. New luminaires shall have an international protection rating of not less than IP65.

Consideration shall generally be given to non-standard luminaires in conservation areas only based upon individual assessment and future revenue implications.

10. Steel Lighting Columns and Brackets

Columns shall conform to the following:

- Columns shall be manufactured from tubular, sheet steel, or aluminum in accordance with East Dunbartonshire Council's Street lighting specification
- The column and bracket manufacturer shall be registered with and accredited under the appropriate Quality Assurance Scheme for the manufacture, supply, and verification of lighting columns. A copy of the accreditation document shall be supplied to the Engineer on request
- All columns and brackets shall be manufactured, supplied and installed in accordance with the requirements of BS5649 or revision of such. Columns shall be manufactured in accordance with the requirements of BD 26/99

11. Corrosion Protection for Steel Columns and Brackets

Unless otherwise specified on Scheme/ Works Orders, all columns and bracket arms shall be galvanised unpainted. If additional protection is specified, the treatment below shall be applied before leaving the factory.

- Hot dipped galvanised in accordance with BS EN 150 1461 1999
- The galvanised surface shall then be degreased and left with a smooth finish to prepare for painting
- The paint system shall comprise a three-coat system: T wash, undercoat, and gloss

12. Switching

Electronic photo electric cells shall be used to switch street lighting with an on/off level set to 70 lux on and 35 lux off.

13. Raise and Lower Columns

Raise and Lower columns shall be installed at such locations where vehicular access is severely limited, for example, remote footpaths or where the presence of a maintenance vehicle may impede the free flow of traffic. Refuge Island beacon posts may fall within this second category.

14. Energy Conservation

The Climate Change (Scotland) Act 2009 set Scotland's ambitious climate change targets, including a minimum 80% reduction in greenhouse gas emissions by 2050.

Centrally managed systems shall be a consideration for all existing and proposed street lighting systems. This shall include all residential major and minor roads.

Lighting systems shall be capable of dimming and switching off to allow the Council to control such systems to reduce CO₂ and energy and therefore, meet the corporate requirements as detailed above.

East Dunbartonshire Council may consider reducing lighting on all residential estates or dimming streetlights to reduce energy and CO₂. In areas where it is considered crime is high officers will consult with the local police to ascertain if this is factually correct and if such action would be detrimental to the area. East Dunbartonshire Council does not currently switch off streetlights.

Energy efficient equipment shall be used at every opportunity and investigations and monitoring of technological developments undertaken.

The advent of electronic ballasts with reduced energy consumption, near unity power factor, and ability to be used in a lamp dimming mode shall be specified when appropriate.

The use of lower wattage white light sources such as CDM-TT, CPO, PLL, compact fluorescent and LED (Light Emitting Diodes) will be standard along with other energy efficient solutions as they are being developed.

15. Legislation and Standards

All street lighting systems installed and maintained should fully comply with the following legislation and standards (or revisions of such):

- Roads Scotland Act 1984
- Goods and Services Act
- The Local Government Contract Act
- The Management of Health and Safety at Work Regulations 1982
- Electricity at Work Regulation 1989
- Traffic Signs Regulations and General Directions 2002
- Disabled Persons Act 1981
- Road Humps Regulations 1996
- New Roads and Street Works Act 1991
- BS7671: Regulations for Electrical Installations 2008
- BS 5489 – 1: 2003: Code of Practice for Road lighting
- BS EN 60529: Specification for Clarification of Degrees of Protection provided by Enclosures
- BS EN 60598 – 2-3: Luminaires for Road and Street lighting
- BS 5649: Lighting Columns
- BS EN40: Lighting Columns 1992
- Department of Environment, Transport and the Regions Departmental Standard BD26/99 – Design of Lighting Columns
- The Wildlife and Countryside Act 1981
- BS EN 12767: Passively Safe Road
- The Local Government and Planning (Scotland) Act 1982

Any other relevant standards shall be specified under the Authorities specification for design, installation, and maintenance.

16. Maintenance Requirements

The Council uses guidance given in the Code of practice for highway lighting management 'Well Lit Highways' produced by the UK Lighting Board November 2004 and passively safe roads should be adhered to, a summary of the recommendations contained within are:

	Well Lit Highways Recommendations	EDC Check
1	The authority's policy in relation to the provision of its street lighting service should be clearly stated and should cover all the organisation and services involved in delivering the service.	
2	All personnel engaged in street lighting operations should be trained in accordance with national guidelines such as those produced by the Institution of Lighting Professionals and issued with the appropriate certification.	
3	No operatives should be placed at risk due to lack of skills on the part of themselves or others dealing with electrical equipment.	
4	Each authority should establish and maintain up to date and accurate inventory of all carriageway and footway electrical equipment (including authority cable networks) as part of its asset management system.	
5	Authority cable networks should be recorded on Ordnance Survey based plans or alternatively on a Geographic Information System.	
6	An asset management system should be used to control and record all cyclical and reactive maintenance activities (WDM).	
7	Cyclical maintenance intervals for lighting installations should be determined to ensure the installations correct operation and light output, minimise failures and maximise life.	
8	Lamp replacement policies should be carefully evaluated taking account of local technical and geographic considerations, to maintain light output whilst limiting the number of lamp failures to an acceptable level.	
9	Each authority should establish and operate a system for monitoring the operational status of its equipment.	
10	Each authority should establish and operate a system for the reporting of faults by the public. The system should allow for the reporting of emergencies 24 hours per day each day.	
11	Each authority should establish and enforce specific response times for each maintenance task.	
12	Each authority should determine the frequency of electrical inspection and testing and carry out such works at a frequency of not less than once every six years.	
13	The condition of all enclosures, including the general structural condition of lighting columns, illuminated traffic signposts, feeder pillars etc. should be recorded on the operative report at each maintenance visit.	
14	New steel lighting columns should, as a minimum, be hot dipped galvanised. If required and specified by the Lighting Engineer consideration should be given to the application of further protective coating by the lighting column manufacturer at the time of manufacture.	
15	A programme for the maintenance and reapplication of protective coatings for in situ lighting column or illuminated traffic signpost should be determined and implemented taking account of the location, existing protective system and any other environmental factors including atmospheric conditions.	

	Well Lit Highways Recommendations	EDC Check
16	A risk assessment strategy for the management of the structural safety of lighting columns and illuminated traffic signposts should be carried out in accordance with the Institution of Lighting Engineers Technical Report 22: Managing a Vital Asset – Lighting Supports.	
17	Each authority should negotiate a formal service level agreement with the Distribution Network Operator (DNO).	
18	Each authority should ensure that their procedures, and those of any contractor, do not prevent the DNO from meeting agreed performance standards.	
19	Each authority should consider the use of competitive tendering for carriageway and footway electrical maintenance as part of its Best Value policy.	
20	Each authority should seek competitively tendered supplies of electricity for its carriageway and footway electrical equipment.	

17. Levels of Maintenance

17.1 Fault Detection

All lighting is required to be inspected at the frequency listed under the section dealing with Performance Indicators. The inspection is to detect and record lighting faults that are visually obvious.

The preparation of the work instruction for fault rectification is the responsibility of the Councils Roads Network Operations, Street Lighting Team who are responsible for all inspections with the exception of traffic signals which are dealt with by the Roads Technical & Engineering, Traffic Officers and supported by an appointed external contractor. Priority of repairs is firstly those faults which present the most danger to the public, such as sections of lights being inoperative.

17.2 Cyclic Maintenance

Cyclic or routine maintenance operations are to be carried out as a preventative maintenance operation which is also to identify any work necessary to keep the installation safe, both structurally and electrically. This maintenance consists of the following:

- Lantern cleaning
- Photo-cell cleaning
- Visual inspection and minor repairs to electrical equipment
- Full electrical inspection and test when specified
- Mechanical maintenance
- Structural inspection
- Inventory data verification
- Maintaining Centrally Managed Systems
- Reduction of Patrolling of CMS Systems
- CMS faults to be linked to data collection and electronically managed

In addition, service standards for both reactive and cyclical repairs are as follows:

- Repairs above ground to street lighting, signs and bollards are to be completed within five working days
- Performance on repairs is measured and the target is set at 95% completed within seven calendar days
- Repairs to underground cable faults, which are Council responsibility to be completed within 28 days. If the cables are the responsibility of Scottish Power Energy Network, the faults will be reported to SPEN and a regular monitor of the situation kept until resolution of the fault
- Provide an effective emergency response within two hours via a Standby Rota operating 24/7
- Evaluate enquiries / requests relating to the service within five days and respond to the customer within 10 working days.

17.3 Emergencies and Out of Hours Repairs (covered by Standby Rota)

Emergencies are responded to within two hours and cover the following:

- street lighting equipment involved in accident damage (RTA)
- the failure of a large section of lighting i.e., six or more lights
- the failure of lighting at a critical location
- missing doors (exposed electrical equipment)
- any incident presenting an immediate danger
- any underground cable damages
- exposed wires

Where a column, or part of a column, is damaged or removed leaving exposed the electricity cable or cut-out this will be covered by a substantially constructed temporary enclosure suitably painted and bearing the legend "DANGER ELECTRICITY - LIVE CABLES". Arrangements are in place to ensure that where the underground cable is the responsibility of the Distribution Network Operator (DNO), East Dunbartonshire Council Street Lighting staff shall remain on site until the DNO arrive and take responsibility for the site.

The Street Lighting Team provide a (365 days/24 hours) out-of-hours service to deal with emergencies and requests, out-with normal office hours and at weekends via a Standby Rota utilizing available staff and external contractors to support as required:

The Council Services Contact Centre will be the focus for alerting the Standby Street Lighting Technician to any incidents out-with normal working hours

Any issues identified are either rectified immediately if public safety is involved or programmed for inspection during core hours if not deemed an emergency by the technician

The first point of contact will normally be the Standby Technician, as appropriate, who will investigate the incident and decide on the appropriate action to be taken

During periods of extended shut down the Standby Technician will have authority to carry out certain functions to ensure that appropriate action is not delayed

If it is considered that further support or guidance is needed, contact will be made with the Transportation Standby Winter Controller as per the Council's Winter Maintenance Policy

If circumstances merit further action or consideration, then the Standby Winter Controller will consult / advise the Senior Management Team via the Executive Officer as appropriate

The 24-hour emergency service is delivered on a weekly standby rota with one electrician on standby covering the whole of the East Dunbartonshire Council area supported by a Street Lighting Technician

It should be noted that if the Mobile Elevated Work Platform is deployed out of hours that this is normally a two-person operation to there may be a requirement for both the technician and the electrician to attend to location/incident

18. Inventory

An inventory of all carriageway and footway electrical equipment is maintained on an appropriate asset database. The Council currently utilise WDM LMS. The details of the location, condition, wattage, lamp type, burning hours, lanterns, supply, column type, height, and year of installation, together with service arrangements are recorded.

The database is used to produce cyclic maintenance schedules, electrical testing schedules, structural inspection and testing information and returns to the Regional Electricity Company for energy charging. Data relating to column risk management (TR22) is also held on the data base which is used to produce column condition indicators.

18.1 Lamp Replacement

In the more remote rural locations and where traffic management measures need to be kept to a minimum, group lamp replacement is in operation where lamps are changed during a cyclic maintenance visit every four years or 16,000 hours of lamp operation, based upon lamp type/manufacturers recommendations. Other areas are not group changed but are replaced only on failure. The evaluation of this policy is ongoing wherein fault levels are recorded and compared.

18.2 Column Testing and Column Replacement

A risk assessment strategy in accordance with the Institution of Lighting Engineers Technical Report TR22 Managing a Vital Asset: Lighting Supports for the management of the structural safety of lighting columns has been developed and is being implemented. The data collected on the column attributes and the environment in which it operates is used in a statistical calculation to allocate an action age to each column and to allocate a priority for the consequences of a column failure. The action age is the recommended age of the column when some action should be taken to establish the structural integrity of the column and on columns of 8m in height and above they shall be subject to a structural test where a load is applied to the column and resultant deflection measured and analysed. Column replacement programmes shall be compiled using the difference between the actual column age and its action age and taking into consideration the consequences of failure to prioritise selection of columns for replacement.

18.3 Testing – electrical

Testing of fixed equipment (Lighting Columns and Illuminated Street Furniture), low voltage, should be tested once every six years and disconnect in five seconds in the event of a fault.

Passively Safe (Lighting Columns and Illuminated Street Furniture), low voltage, should be tested once every six years and disconnect in 0.4 seconds in the event of a fault.

18.4 Legislation and Competency

Regulation 16 of the Electricity at Work Regulations 1989 requires that no person shall be engaged in any work activity where technical knowledge or experience is necessary to prevent danger or, where appropriate, injury, unless he possesses such knowledge or experience or is under such degree of supervision as may be appropriate having regard to the nature of the work.

All operatives and external contractors shall be appropriately trained and instructed to ensure they understand the safety procedures, which are relevant to their work and are required to have G39 certification.

18.5 Cable Records

The location of underground cable networks shall be recorded to facilitate repairs, testing, extensions and for providing information to any organisation excavating in the carriageway and footway in compliance with the New Roads and Street Works Act and the recommendations of the National Underground Assets Group.

The Street Lighting Asset database of the lighting and signs inventory is linked to an Arc Info Geographical Information System (GIS) which has the location of illuminated signs and streetlights plotted. The database and GIS system should be kept up to date by actioning all additions, deletions, and alterations to the network.

18.6 Energy Purchase

Electrical energy for street lighting, which is generally unmetered, is currently purchased via Scotland Excel who tender national contracts for energy provision. Scotland Excel was set up by the Scottish Government to maximise procurement savings for Local Authorities. Energy usage and billing shall be monitored by the Street Lighting Team supported by Procurement and Finance colleagues.

18.7 Performance

- The following details indicate the targets and indicators determined in terms of monitoring performance.
- The public and other interested parties are asked to contact a dedicated telephone number to report any concerns regarding street lighting. This number is always operational through a call centre. Callers are asked to assist by reporting the identification number, providing a location address, and describing the nature of the concern.
- Street lighting Maintenance and Installation Targets

Activity	Frequency	Time for Completion
Cyclic Maintenance All Roads	Every three years	As agreed programme
Lamp Replacement (Bulk lamp change in rural areas, replace on failure elsewhere) SOX, SON, PL	Every three years	At cyclic maintenance
Night Inspection	Monthly safety survey	Within 20 working days
Fault Repairs Minor faults (faults which can be repaired at the first visit)	Upon occurrence	Within 20 working days of receipt of notification
Painting	Monthly safety survey	Within agreed programme
Cable faults	Monthly safety survey	Within 20 working days
Accident damage, Knock- downs	Monthly safety survey	Within 20 working days
Electricity at Work Regulations-Testing of Roads Equipment	Monthly safety survey	Ongoing
Emergency Attendance to make safe	Upon occurrence	Within 12 hours

To maintain the integrity of the electrical installations, in addition to the visual inspections during cyclic maintenance visits, the units are tested every six years in accordance with the Electricity at Work Regulations and details of test results and inventory recorded on the asset management database.

The specification requires all lighting units to be the subject of a monthly evening inspection during summer months and twice monthly during the Winter months, when the lights are expected to be fully operational to identify faults. The faults are to be investigated by the Street Lighting Team within twenty working days of being notified at which time minor faults shall be rectified.

Faults received are input into an asset database as faults and the order to repair sent electronically at the end of each working day.

All external correspondence should be answered, or where not possible, acknowledged within five working days of receipt.

Faults which cannot be rectified at the first visit are classed as major faults and are then the subject of individual orders and instructions and passed for attention.

Performance Indicators

The average time taken to repair streetlight and traffic light faults that are in the total control of the authority

Percentage of all streetlight repairs completed within 7 days. Information collated by Senior Streetlighting Technician.

Percentage of traffic light repairs completed within 48 hours. Information collated by Senior Traffic Officer.

19. Trees

The maintenance of Trees in respect of Street Lighting is covered within the [East Dunbartonshire Council Tree Management Policy](#).

Pruning of trees may be required in order to maintain lighting effectiveness at the kerb edge and for a distance of halfway between columns. Pruning of trees on private property will not be done until the owner's consent has been obtained and costs incurred will be recharged. Where the Owner's consent cannot be obtained then the Council will invoke regulatory procedures to deal with the issue.

Some trees may be protected by either a Tree Preservation Order (TPO) or by being located within a Conservation Area. Where a protected tree is restricting the lighting effectiveness of a lamp or lantern, the Council is empowered under the Roads Scotland Act to prune the tree.

Streetscene Operations staff will normally undertake pruning of branches less than 50mm diameter. Where the need for more extensive pruning is identified, then this will be carried out by internal qualified operatives, or an appointed external arboriculture contractor engaged by the Street Lighting Team.

When works are being carried out to erect or remove lighting columns or excavate cable trenches, there is the potential to damage roots and branches. The guidance given in the publication "NJUG 10 Guidelines for the Planning, Installation and Maintenance of Utility Services in Proximity to Trees" will be followed to minimise the risk of damage to trees.

20. Festive Lighting or Seasonal Decorations on or above the Public Road

The erection of seasonal decorations on or above the roadway shall only be carried out by the Roads Network Operations Streetlighting Team or an agreed/approved external contractor. External organizations wishing to install seasonal decorative writing must have with the written approval of the Local Authority before doing so.

All works associated with the provision of seasonal decorations shall be carried out in accordance with the requirements of the Code of Practice for the Installation and Operation and Removal of Seasonal Decorations, second edition, 2005 (CP10RSD).

Seasonal decorations may be attached to existing Lighting Equipment, but it is preferred that such decoration be attached to or supported from buildings adjacent to the carriageway.

Seasonal decorations shall be deemed to include decorations erected for:

- Christmas and other religious celebrations
- Festivals and other celebrations
- Flower Decoration including attached and hanging baskets
- Flags and banners
- Advertisements

Generally, no decoration or its support shall project over the road or within 0.5m of the kerb face at a height less than 5.8m above the road surface. At least 2.5m headroom must be provided over any area for pedestrians. The electrical requirements for protection against electric shock of CP10RSD shall be adhered to wherein ground mounted installations must be supplied as a maximum by a SELV 25 volt AC power supply protected by a Residual Current Circuit Device, RCD, situated at the source of supply. Equipment mounted above ground to 2.5 metres in height can be supplied at a maximum of 110 volts via a centre tapped transformer (55-0-55) incorporating a suitably rated RCD. Equipment mounted above 2.5 metres can be supplied at 230 volts again incorporating a 30maRCD.

All Seasonal Decorations shall be erected in compliance with the following statutes and regulations:

- Health and Safety at Work Act 1974
- Electricity at Work Regulations 1989
- BS 7671: 2008 Requirements for Electrical Installation, IEE Wiring Regulations, Seventeenth Edition
- No Seasonal Decorations shall conflict with any adjacent traffic signal systems.

21. Seasonal Decorations Attached to Lighting Equipment

In general, street lighting columns are not designed for the significant additional loads imposed by the attachment of seasonal decoration. Therefore, the size and number of seasonal decorations that can be attached to a lighting column is limited. However, the erection of such decorations and fittings will be permitted provided the following additional conditions are met:

21.1 New or replacement lighting systems

In locations where it is expected that seasonal decorations will be required, the lighting columns shall be manufactured and installed to support the additional loads imposed by weight and wind and a certificate of compliance lodged with the Roads Authority. The additional cost of such columns will be rechargeable to the organisation wishing to install the seasonal decorations.

21.2 Existing lighting systems

The system of street lighting to be used to support the Seasonal Decorations shall be inspected annually. A competent Structural Engineer shall be commissioned to provide a report to the Roads Authority or its agent prior to the erection of the decorative lighting confirming that the columns are structurally safe and can support the proposed seasonal decorations. The cost of such investigation and testing will be recharged to those installing the attachments.

- Seasonal decorations must not hinder the normal operation or maintenance of the road or the Lighting Equipment
- No banners, flags or catenary wire(s) shall be erected between two or more items of Lighting Equipment unless the Lighting Equipment has been designed and manufactured specifically for that purpose or a Structural Engineers report has been submitted as above. The cost of such investigation and testing will be recharged to those installing the attachments
- Power supplies to such decorative fittings shall not be obtained from an adjacent building
- Where remote power supplies are used to provide energy for the Seasonal Decorations, the decorations and any supply wiring shall be labelled with the location of the isolation point at regular and appropriate positions along the length of the wire

22. Other Fixtures and Attachments to Street Lighting Columns (Permanent or Temporary)

Existing Lighting Equipment due to its design, construction or structural condition may not be structurally adequate to support the additional weight and wind loads imposed by the erection of a sign or other attachment such as hanging baskets and banners. A Structural Engineer may be engaged to establish the structural integrity of the columns and the cost of such investigation and testing will be recharged to those installing the attachments.

Lighting columns should not be used as an additional support of a sign requiring a second or additional post unless the lighting column has been specifically designed for this purpose. Experience has shown that the use of lighting columns in this manner can cause premature failure.

Street lighting columns shall not be used as supports for advertising signs of any kind, except where recognised organisation have been granted permission by the Roads Authority. When fixed such signs should not obscure the unit's maintenance number, hinder maintenance, or affect the light output of the equipment.

No person shall remove or cause obstruction to a lighting access door or column identification number.

Only personnel authorised by the Street Lighting Senior Technician shall enter the base compartment and access equipment housed therein.

23. Supply of Electricity from Street lighting Equipment

The provision of temporary supplies from street lighting equipment presents problems for the safety and security of both the street lighting equipment and the temporary installation and such connections will only be permitted where no satisfactory alternative, including portable generators, can be found.

The Body seeking supplies of this nature must obtain the consent of the Road Authority and make appropriate arrangements with the Power Companies for the payment of the energy used.

The installation must be installed in accordance with the requirements of the Electricity at Work Regulations and BS7671: Requirements for Electrical Installations and final connections into the street lighting equipment must be executed by the Roads Authority. Under no circumstances are unauthorised persons allowed to access street lighting equipment.

24. Private Off-roadway Lighting

Private exterior lighting situated off the roadway when not optically controlled or wrongly aimed can be a source of danger due to glare to users of the road.

Light pollution of the night sky should be minimised, and lighting of buildings should preferably be with down lighters and where floodlighting must be used then they shall be optically controlled and aimed such that there is no spillage of light from the building being lit.

In the case of security and sports pitches, the lighting of these should be to the illuminance levels recommended in the appropriate Design Guides. Light spillage should be restricted to prevent discomfort and annoyance to occupiers of adjacent buildings and dwellings.

Car park areas should be lit to the appropriate standards set out in BS5489: Part 9 and the luminaires incorporate such light control to produce downward light within the confines of the car park.

Advertising signs should be lit using the guidelines published in the second edition of the Institution of Lighting Engineers (IL) Technical Report No TR5 'Brightness of Illuminated Advertisements

Appendix 6 – Traffic & Pedestrian Signal and Traffic Signs Inspection and Maintenance Procedure

1. Introduction

The inspection and maintenance of Traffic Signals is the responsibility of the Roads Technical & Engineering Team, specifically the Senior Traffic Officers and Traffic officers. The maintenance and repairs of the traffic signals is undertaken by an appointed external contractor on behalf of the Council.

2. Inventory

- Traffic signals
- Urban Traffic Management Control (UTMC)
- Pedestrian signals
- Illuminated and non-illuminated Road signs

The inventory is held internally within the Services Asset Management System by geographical area and also on the Information Management for Traffic Controls System (IMTRAC). This web-based system is used to report, monitor and add newly installed traffic signals. There are around 138 traffic signals throughout East Dunbartonshire and as stated an appointed private contractor conducts annual inspections on all signals and reactive repairs as and when required.

The Service is currently working closely with the private contractor to identify any upgrade programmes, to make sure all signals are running successfully and using up to date technology to provide the best possible service.

The Service identifies the needs for new signalised junctions through site surveys of the location, vehicle turning counts, queue lengths, pedestrian movements, accident history etc. Potential pedestrian crossing sites are assessed in accordance with LTN 1/95.

Installation of signals typically requires co-ordination of a civils' works by external or internal resources depending on the availability of resources to excavate and lay the ducting required to connect the signals with the nearest power supply. Scottish Power then connect the signals to the power supply and the traffic signal supplier to install the signal heads and configure the signals for the site before they become operational.

3. Traffic Signals

As stated, the Traffic signal inspection and maintenance is carried out by private contractor. They are required through the contract to repair emergency defects within 48 hours.

Reporting of defects is done via an online portal and can come through customer contact or officer observation. Typical faults include dark lamps and damage because of vehicle collisions.

The maintenance contractor will repair any damage or loss of function of the signals with the Council's Roads Network Operations Team making safe any damage as a result of a collision.

Customers may also query the length of time to different signals. Some of the stages use an industry standard e.g., average walking speed, but the length of a green signal can be varied. As detection technology advances, signals may not have the same green time from one cycle to the next. Officers will assess signals on receipt of a request but will balance the needs of the traffic network and may not be able to accommodate every request. It should be noted that signalised junctions are not designed for pedestrians to walk diagonally across the junction, as this extends the delay to vehicle movement.

The way pedestrian signals operate has changed over time and some customers think they can only cross on a green signal, which may not provide enough time to cross. This is not a fault. The green signal is the invitation to cross and once it goes red, traffic will not get a green signal until the average crossing time has passed.



4. Roads Signs

Road signs are inspected as part of routine road safety inspections to check for damage, loss of clarity/reflectivity and forward visibility (e.g., tree obstruction).

The inspector will raise a work instruction to the Roads Network Operations Team if they encounter any issues or concern. Again, resources will attend but this will be in line with other priorities and as per the risk identified.

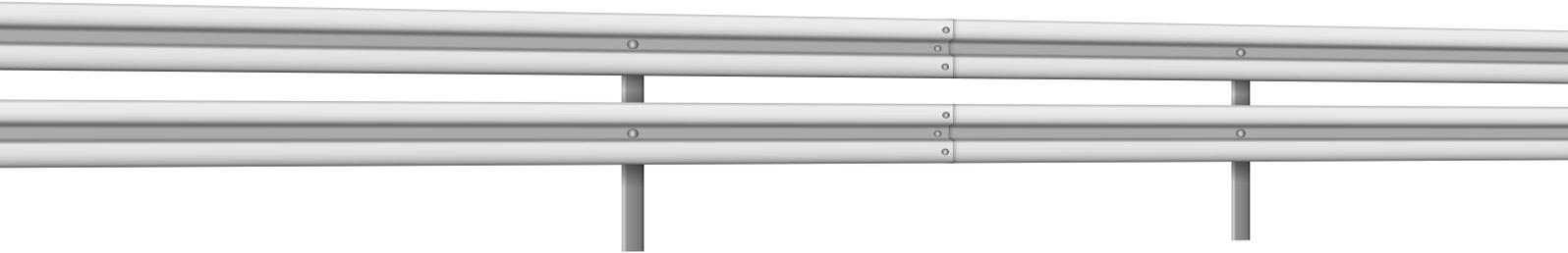
Road sign legislation is governed by the Traffic Signs Regulations and General Directions. This sets out the information that can be displayed on a sign, including sign size, letter size, colours used, mounting height etc. Further guidance on best practice is provided in the Traffic Signs Manual. These documents recommend a minimalistic approach to sign provision to avoid reducing the impact of each sign and to minimise the maintenance burden.

The Council does not store road signs and so there can be a delay between a road sign being damaged and it being replaced. The legislation recognises this and requires road users to treat the road as they find it. This means that claims cannot be made against Roads Authorities because of missing signs.

Appendix 7 – Vehicle restraint Systems Inspection and Maintenance Procedure

1. Introduction

The Roads Technical & Engineering Team oversee inspection of any Vehicle Restraint Systems (VRS) are intended to reduce the number and severity of injuries in the event that a vehicle leaves the carriageway and would otherwise encounter a hazard. VRS do not stop accidents from occurring and they should only be used when other measures are considered inappropriate or ineffective. It should be noted the bollards and pedestrian guardrail are not considered as VRS.



2. Inventory

East Dunbartonshire Council currently maintains approximately 2500m of vehicle restraint system comprising of concrete barriers, wire fences, safety fences or parapets. They are distributed across a wide range of locations on the road network with varying road speeds and traffic flows.

3. Guidance

National guidance on vehicle restraint systems is not collated in one place, and this procedure is intended to provide guidance on the management of vehicle restraint systems and to outline the risk-based method by which the council prioritises inspection and maintenance to optimise funds whilst reducing risk.

Nationally, the following guidance is in place as reference:

- CD377 Requirements for Road Restraint Systems (CD377)
- CS461 Assessment and upgrading of in-service parapets (CS461)
- DfT Design & Maintenance Guidance for Local Authority Roads Provision of Road Restraint Systems on Local Authority Roads (DMG-RRS)
- Well Managed Highway Infrastructure: A Code of Practice (WMHCoP)
- TAL 06/03 Managing accidental rail obstructions by road vehicles (TAL 06/03)
- British Standards documents: BSEN1317 - Compliant Road Restraint Systems and BS 7669-3 - Vehicle restraint systems. Guide to the installation, inspection, and repair of safety fences
- Roads Scotland Act 1984

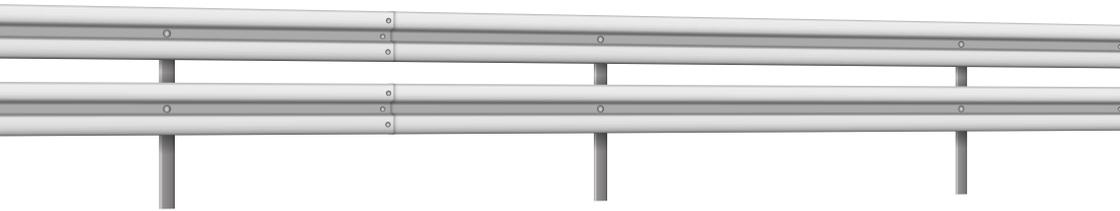
The Roads Technical & Engineering Team will utilise the guidance wherever it is applicable and practicable to do so.

4. Assessment of Need for the Provision of Vehicle Restraint Systems

It is expected that all practical attempts will be made to prevent new hazards being created, thus avoiding the need to consider vehicle restraint system provision.

CD377 and DMG-RRS give examples of the circumstances and hazards considered in determining the need to provide a vehicle restraint system. Examples include roadside obstructions such as structures, trees, and lighting columns, hazards that road users may fall off or into, such as embankments and water sources and hazards where others may be affected, such as recreational areas, railways or flammable material storage.

A risk appraisal process for a vehicle restraint system varies depending on the location, speed limit, traffic flow and proximity to a railway line. Risk assessment is only part of the appraisal process and, regardless of the outcome at a site,



consideration should be given to suitable, cost-effective, and practicable alternative options which will reduce the risk to a level which will avoid the need to install or continue to provide a vehicle restraint system.

DMG-RRS provides examples of alternative solutions for consideration of sites on local roads. This could include the removal or relocation of hazards, speed control or the installation of chevrons and signs, etc. Where the installation of the VRS is part of a larger scheme where there are physical changes to the road impacting on road user behaviour or resulting in a change to the outcome of a collision on the network, a road safety audit (RSA) will be undertaken.

5. Inspection and Maintenance Regime

Road Safety Inspections (RSI) - VRS installations are subject to a regular basic visual inspection as part of the Road Safety Inspection regime undertaken by the Roads Network Operations Roads Inspectors. Only those defects which are obvious, clearly visible and pose a threat to safety are picked up, recorded, and actioned by this process.

General and Principal Bridge Inspections - A large proportion of VRS installations are associated with structures. In accordance with the Well Managed Highway Code of Practice, vehicle restraint systems will be inspected as part of the road asset, as well as during general and principal inspections for structures, where it is practical to do so.

6. Upgrade or Repair of VRS

CD377 provides guidance on when consideration should be given to upgrading existing vehicle restraint systems which do not meet current standards. The Council will follow this guidance, wherever it is practicable to do so. Where a departure from national standards or guidance is proposed, this decision will only be taken after carrying out an appropriate road safety audit and risk assessment.

Where practicable, every effort will be made to recover costs incurred in repairing sections of accident damaged fencing or barrier. This includes the cost of traffic management, making safe, administration and repair.

In accordance with the with National Highways Quality Management Sector Scheme 2B and 5B, only suitability qualified personnel will be employed to install, upgrade or repair vehicle restraint systems on the local road network. Prior to starting works, contractors will be required to confirm that their personnel are suitably qualified.

7. Record Keeping and Updating of Inventory Data

In addition to complying with appropriate guidance in respect of record keeping, the Road Management System must also be correctly updated.

The following documents should be supplied with the completed data collection form as individual documents in pdf format so that they can be attached to the relevant record:

- Risk Assessment
- As Built Drawings
- Inspection Sheets in accordance with BS7669-3
- Vehicle Restraint System Information – system details from VRS supplier

All records from external parties should be passed through to the Roads Asset Co-ordinator.

Appendix 8 - Road Construction Consent and Adoption Process

1. Introduction

The Road Construction Consent Process is part of the Planning Process for new developments including affordable housing sites. The Council apply charges to appropriately recovery costs for processing and issuing Road Construction Consents (RCC).

Developers must apply for RCC at least three months prior to the proposed commencement of construction.

To apply the Council will require the following documents as a minimum:

- Location plan
- General arrangement plan (in the context of any surrounding development phasing)
- Road setting out and levels layout
- Road construction details (where different to standard details)
- Road longitudinal sections
- Kerbing layout
- Drainage layout including Sustainable Drainage Systems (SuDS)
- Drainage construction details (where different to standard details)
- Drainage longitudinal sections
- Finishes layout
- Vehicle swept path analysis (For residential areas, use the “Large Rigid Vehicle” as defined by the Freight Transport Association; for bus routes, use a 13.5m bus; for non-residential, use the longest likely vehicle.)
- Road adoption plan
- Land factoring plan
- Quality Audit – including Road Safety Audits together with the Designer’s Responses
- Signs and lines drawing
- Traffic signals layout and operational details
- Street lighting layout and calculations
- Vehicle charging points and connections
- General arrangement and structural details for structures associated with the road network
- Any other details required to enable the assessment of the proposal

2. Supporting documents

2.1 Neighbour Notifications

The developer is required to notify any person who owns land which fronts, abuts, or is comprehended in the new roads, or which lies within 50m of the road for which Road Construction Consent is being sought.

2.2 Scottish Water Approval

Evidence of Scottish Water's Technical Approval will be required, and this must reference current revisions of the drawings.

2.3 Drainage Assessment

Evidence that the Drainage Assessment, including a Surface Water Management Plan has been submitted to and approved by the Statutory Authorities.

2.4 DNO comments on EV infrastructure

It is recommended that confirmation is sought by the developer from the DNO (electrical Distribution Network Operator, currently SPEN for the area) regarding the suitability of the grid connection for vehicle chargers within the new development.

2.5 Structures Technical Approval

Where the submission includes structures associated with the road network (e.g. retaining walls, culverts or bridges) the application will be subject to Technical Approval Procedures as outlined in CG 300 of the Design Manual for Roads & Bridges, and Technical Approval must be sought before the application for an RCC. If the need for an additional or amended structure arises after the granting of Road Construction Consent, the developer should seek the approval of the Council's Roads Technical & Engineering Team, Roads Development Officer in conjunction with the Structures Engineer before starting construction of it.

2.6 Lighting Calculations

Please note that developers will be expected to ensure that lighting on existing roads is suitable for any new accesses. The Roads Network Operations, Streetlighting Team will liaise directly with the developer to assess the streetlighting plans as part of the RCC/adoption process.

2.7 RCC Inspection and testing

During the construction period, the Roads Technical & Engineering, Roads Developer Officer and other associated staff must be given access to the site to ensure that the works conform to the Road Construction Consent (RCC). The developer and/or their contractors shall enable such staff to examine the works and the materials. They shall supply, free of cost, samples of materials together with particulars as to the source of supply or manufacture. At our discretion, test certificates may be required indicating the suitability of the materials proposed for use.

Notwithstanding any use that the developer may make of the professional services of third parties, any certificate of inspection submitted by a third party will not be accepted. Our staff shall undertake all inspections.

Attention is drawn to [Section 140 \(6\) of the Roads \(Scotland\) Act 1984](#) which entitles the Council to recover expenses reasonably incurred in inspecting sites for compliance with Road Construction Consents. It should be noted that it is the Council's intention to recover staff costs from the developer in accordance with the Act.

Our RCC inspection fees are charged at 6% of the road bond.

2.8 Notice of operations

The developer or their contractor must give a minimum two working days' notice of the following operations:

- Carriageways and footways or paths
 - » Intention to commence work
 - » Setting out
 - » Commencement of excavation (inspect sub-soil conditions)
 - » Commencement of laying sub-base
 - » Completion of kerbing
 - » Commencement of laying road-base
 - » Commencement of laying binder course to carriageway
 - » Commencement of laying surface course to carriageway
 - » Commencement of laying sub-base to footpaths/footway
 - » Commencement of laying binder course to footpaths/footway
 - » Commencement of laying surface course to footpaths/footway

- Road Drainage
 - » Setting out
 - » SuDS features
 - » Breaking into existing pipe runs – before installation of saddle connection or manhole
 - » Completion, bedding and haunching, but before concrete surrounding or haunching, and completion of manholes – before backfilling (tests where applicable)
 - » Completion of backfill (tests where applicable)

- Road lighting and illuminated traffic signs
 - » Setting out of road lighting plant positions
 - » Commencement of column and sign erection
 - » Commencement of cable laying
 - » Commencement of electrical work
 - » Commencement of electrical testing and commissioning of installation (actual connection dates must be noted)

- Traffic signs and road markings
 - » On completion

- Outstanding works defined by the Council after formal inspections
 - » Commencement of each item of outstanding works

These are minimum requirements, and, in certain cases, the developer may be required to notify officer of any additional construction stages.

2.9 Temporary signage

If temporary local direction signing is to be provided to new housing developments, the signs must be in accordance with the [Traffic Signs Regulations and General Directions 2016 \(TSRGD\) Schedule 16, Part 6, diagram 28](#).

Housing development signs not in accordance with the above will be removed and charged to the developer.

3. Applying for adoption of new roads and paths

3.1 What does it mean when roads are 'adopted'?

New roads and associated infrastructure constructed as part of new housing developments will normally go through a process to be formally added to the list of public roads. This is also known as road adoption by the Local Authority. Until such time that the roads are formally adopted, they are considered to be private, therefore liability for any incidents that occur on them lie with the developer. This includes issues relating to winter maintenance.

3.2 Applying for adoption

Under the terms of [Section 16 of the Roads \(Scotland\) Act 1984](#), East Dunbartonshire Council as Roads Authority will, if requested, adopt any new road (including any associated footway or verge) constructed in accordance with a Road Construction Consent (RCC).

When the roads and paths are complete, the Roads Development Officer will liaise with the developer to arrange a final inspection. When the Council Officers are satisfied with the quality of construction, the roads will enter a 'maintenance period' for a minimum of 12 months during which the developer remains liable for any defects. At the end of this maintenance period, a further inspection will take place, and if this is deemed acceptable, then the holder of the Road Construction Consent must submit an application for adoption using form. The submission should include:

- electronic 'as-built' drawings as requested for the [Road Construction Consent](#)
- adoption and factoring plans with the carriageways, footways, paths, service strips, parking areas, lighting etc. offered for adoption clearly indicated
- confirmation from Scottish Water which infrastructure will be vested in them
- certification that the streetlighting has been fully tested

Once approved, the road will be added to our list of public roads and maintained by the Roads Network Operations Team.

3.3 Roads

All roads proposed for adoption must form a continuous system with the existing public road network.

In general, we expect to adopt a road (and adjacent footways) which serve five or more dwellings.

In the case of a large development, adoption may be on a phased basis subject to:

- only lengths of road between junctions being adopted, as long as they are continuous with the existing public road; and
- carriageways, footways, and verges not being adopted separately.

3.4 Remote paths

New paths remote from the carriageway will be considered for adoption as long as they:

- form a suitable part of a general path network serving facilities such as shops, schools and public transport facilities where access to pedestrians and non-motorised vehicles is unrestricted; and,
- serve more than one dwelling if not forming a part of a link; and,
- allow access for maintenance purposes, by having at least one end abutting a public road

3.5 Exemptions

- Surfaced areas surrounding buildings and intended essentially for maintenance purposes will not be adopted
- Where paths lead to both front and rear of a property, only one will be considered for adoption
- In the case of multi-storey buildings, the path may be adopted up to the point where it is deemed to enter the curtilage (i.e., garden, landscaped or forecourt areas surrounding building)

3.6 Parking areas

Parking areas contiguous with the carriageway will normally be adopted provided that their use by the general public is not restricted in any manner. Such parking should normally only be provided for visitors and not for the regular parking of residents' cars.

New developments are required to provide parking spaces off the carriageway in accordance with recommended parking guidance. Where this parking is provided for residents', cars in lieu of garages or private drives, it will not normally be adopted and must be subject to private maintenance (factoring) agreements. Such areas must be clearly delineated from the public road and will normally be behind a footway. It is not usually acceptable for a change in surfacing or kerbing to be the sole means of distinguishing between adopted and private areas.

Off-road parking areas, which have been identified as meeting a public parking need and are constructed to an adoptable standard, may be adopted.

Service areas in industrial or commercial developments, which provide loading facilities for the premises, will not normally be considered for adoption even though these may take the form of hard-surfaced areas contiguous with the carriageway. Clear delineation between public and private areas is nevertheless required. The exception to this is where such an area is provided in the form of a lay-by to the adjacent carriageway.

3.7 Lighting

The Council have a duty under the [Roads \(Scotland\) Act 1984](#) to maintain lighting on a public road and the Council also have the power to maintain lighting on a private road, lane or footway, but have neither duty nor power to maintain lighting in private areas or accesses.

Therefore, a condition of the Road Construction Consent requires that the developer provides lighting to be adopted alongside the road or path it serves.

Lighting installed on adoptable roads, footways/paths and parking areas will be adopted for operation and maintenance from the date of their commissioning, subject to:

- accepting lighting units from the date of commissioning for the supply of energy and routine maintenance only
- any work carried out or material supplied by the developer being maintained by them for a period of twelve months from the date of commissioning as certified in writing. The twelve-month maintenance period will include for the replacement of any faulty equipment supplied by the developer and the restoration of any faulty workmanship found during this period or at the final inspection prior to issuing the final acceptance certificate
- any expense incurred during the maintenance period because of the developer's failure to carry out the requirements of (2) above being fully charged to them

While it may be necessary to provide lighting in communal private areas for security and safety, the Service will not adopt this lighting and arrangements should be made for its maintenance through factoring agreements.

3.8 Structures

Where a Road Construction Consent provides for a road to be supported by a bridge the Service will normally enter into an agreement with the developer, in terms of [Section 79 of the Roads \(Scotland\) Act 1984](#), whereby the bridge will be entrusted in the Council as Roads Authority. If, however, the solum has not been so acquired, the Local Roads Authority will be responsible only for maintaining the road surface.

3.9 Factoring agreements

Agreement must be secured for the maintenance of all features such as swales, verges, open spaces, parking courtyards, vehicle chargers and bus/bicycle shelters which are primarily for the use of new residents. This generally requires that developers put in place factoring arrangements for maintenance in perpetuity.

3.10 Addition to List of Public Roads

Within 12 months of the application for adoption of a new road, we will inspect to ensure that the road has not deteriorated below the required standard.

If significant deterioration has occurred, a list of remedial works will be forwarded to the applicant. These works must be undertaken as soon as possible or the date for adoption may be deferred.

Following a satisfactory adoption inspection, the road(s) shall be added to the List of Public Roads, under the terms of [Sections 16 and 18 of the Roads \(Scotland\) Act 1984](#)



Other formats

This document can be provided in large print, Braille or in audio format and can be translated into other community languages.

Please contact the Council on 0300 123 4510

ਸੇਵਾਵਾਂ ਲਈ ਸੰਪਰਕ ਕਰੋ: 0300 123 4510

0300 123 4510 ਨੰਬਰ 'ਤੇ ਸੇਵਾਵਾਂ ਲਈ ਸੰਪਰਕ ਕਰੋ।

ਇਸ ਦਸਤਾਵੇਜ਼ ਦਾ ਮੰਗ ਕਰਨ ਤੋਂ ਪਹਿਲਾਂ ਇਹ ਆਨੁਵਾਦ ਕੀਤਾ ਜਾ ਸਕਦਾ ਹੈ। ਕਿਰਪਾ ਕਰਕੇ 0300 123 4510 'ਤੇ ਸੰਪਰਕ ਕਰੋ।

Gabhaidh an sgríbhainn seo cur gu Gáidhlig ma tha sin a dhith oirbh. Cuirbh fón gu 0300 123 4510

ਅਕਸਰ ਸੇਵਾਵਾਂ ਲਈ ਸੰਪਰਕ ਕਰੋ: 0300 123 4510