REGENERATION AND ENVIRONMENT SCRUTINY COMMITTEE – 1ST NOVEMBER 2016

SUBJECT: HIGHWAY INSPECTION MANUAL ENDORSEMENT

REPORT BY: CORPORATE DIRECTOR COMMUNITIES

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1. PURPOSE OF REPORT

1.1 This report outlines the background and content of the Highway Maintenance Plan (HMP) and Highway Inspection Manual (HIM), explaining the process by which it is internally reviewed on an annual basis.

1.2 For Scrutiny members to consider the content of the documents and process of review and provide comment for consideration, prior to seeking Cabinet endorsement.

2. SUMMARY

2.1 The Council has a statutory duty to maintain a safe highway network, as set out under the Highways Act, 1980.

The following suite of documents (refer to the Highways Operations Group Framework structure is shown in Appendix A), sets out how this statutory duty is fulfilled:

- Highway Asset Management Plan (HAMP) – this sets out how the Council's assets are identified, assessed, inspected, maintained and recorded.
- Highway Maintenance Plan (HMP) – this sets out the maintenance regimes of the highway assets and the Highway Operations criteria for this to take place (highways, footways, bridges, drainage, winter maintenance, etc.) – this has a direct link to the HAMP
- Highway Operations Plan (HOP) – this document sets out how the Highway Operations team carry out tasks that do not have a direct connection with the Council's highway assets (out-of-hours duties, utility works inspections etc.)

2.2 This report focusses upon the HMP. The HMP defines a structure under which all asset-related Highway Operation activities are subdivided into asset groups:

- o Carriageways & Footways – under Highway Inspection Manual, Winter Maintenance Plan and Planned Works
- o Drainage – under Drainage Maintenance
- o Street Lighting
- o Structures – bridges, retaining walls and large culverts
- o Tips and recycling sites – under Tips Maintenance & Recycling

2.3 The Highway Inspection Manual (HIM) (in Appendix B – Parts 1 & 2 only) forms part of the Highway Maintenance Plan (HMP) (coloured yellow in Appendix A). It sets out the processes and procedures to inspect, report, undertake necessary actions and record the works carried out on the carriageway and footway asset. It is isolated in this report, as it forms the basis of the Council's legal defence against insurance claims, both with personal injury and property/ vehicular damage, made on the highway.

2.4 Members are asked to scrutinise the process, overall content and provide comment prior to seeking endorsement by Cabinet.

3. LINKS TO STRATEGY

3.1 This report links directly to the regeneration of the county borough making Caerphilly County Borough a better place to live and work.

3.2 The report links directly to the Council's priority to improve accessibility throughout the county borough by improving the transport network, enabling individuals to move freely around Caerphilly.

3.3 There is also a link to ensuring communities are safer by maintaining safety standards for the development of integrated, efficient local and regional transport system, on which public transport, private users, cycling and walking networks can operate.

3.4 The Well-being of Future Generations (Wales) Act 2015 came into force this April; it sets out seven Well-Being Goals. The focus of this report supports a Resilient Wales, A Prosperous Wales, A Wales of Cohesive Communities and a Globally Responsible Wales

4. THE REPORT

4.1 The Highway Maintenance Plan (HMP) has a number of subdivisions to cover both reactive and planned activities for the highway asset:

i. Highway Inspection Manual (HIM) (coloured yellow in Appendix A)– organisational set-up and processes for highway inspection
ii. Tips Maintenance & Recycling – procedures for both tip sites and the recycling facility
iii. Drainage Maintenance – based on the approved Flood Risk Management Plan
iv. Structures - standards and procedures for highway related structures (bridges, retaining walls etc.)
v. Planned Works – carriageway, footway and crash barrier (VRS) maintenance
vi. Street Lighting – standards and procedures for street lighting
vii. Winter Maintenance Plan (coloured blue in Appendix A) – procedures for the winter period (reviewed under separate Cabinet Report – reviewed in Scrutiny Committee meeting 28th June 2016)

4.2 The purpose of the manual is to explain the Council's responsibilities (as Highway Authority) of inspecting and maintaining the highway infrastructure network throughout the annual cycle in order to demonstrate how we fulfil our statutory duty, as set out in the Highways Act (1980).

4.3 The 'Well-maintained Highways' Approved Code of Practice (ACoP) 2005, gives practical guidance on how to comply with Highways Health & Safety Regulations, which have the force of law. Although the HIM has been developed throughout the existence of CCBC, its compliance with this ACoP gives this document a legal grounding.

4.4 Caerphilly County Borough Council (CCBC) undertake safety inspections in accordance with the principles of 'Well-maintained Highways' Approved Code of Practice (ACoP) – 2005 in order that, where necessary, the Council is able to support a legal defence under Section 58 of the Highways Act 1980. This requires that a court shall have regard to 'whether the highway authority knew or could reasonably be expected to know, that the condition of the part of the highway to which the action relates was likely to cause danger to users of the highway'.

4.5 The Highways Act 1980 sets out the main duties of highway authorities in England and Wales. In particular, Section 41 imposes a duty to maintain highways, as far as is reasonably practicable, at public expense; almost all claims against authorities relating to highway functions arise from the alleged breach of this section.

4.6 As it is used as the basis for the legal defence against insurance claims made against the Authority (ref 4.4 & 4.5), this version of the HIM under-went a legal review in 2015 by an external legal firm, to confirm its validity and standing,.

4.7 The plan also provides guidance to Highway Inspectors in carrying out their duties with the appropriate references to the required tables and matrices. This is both useful in defining the Inspector's and Highway Maintenance team roles when carrying out their legal duties, as part of the Highway Authority in the County Borough.

4.8 This manual is annually reviewed by the Principal Engineer for Highway Maintenance and the Highway Operations Group Manager and adjusted accordingly, then annotated in the revision box on the title page.

4.9 The Manual sets out the Highway Inspection Policy for CCBC, and is divided into four Parts (currently consisting of a 250 page document - Appendix B only showing Parts 1 and 2):

- Part 1: Background & Policy Information, which explains the background and policy for the highway inspection process.
- Part 2: Inspection Procedures, which provides guidance on how inspections should be carried out, including risk assessments, frequency, intervention criteria, training, emergencies and data management.
- Part 3: Inspection Guidance which provides photographic and written guidance for Council highway inspectors to help assess highway defects (not included in Appendix B).
- Part 4: Appendix which contains the appendices for the 'Highways Code of Practice', standard letter templates and 'Out of Hours' Duty Officer Hand-Book (not included in Appendix B).

4.10 Of these sections there are a number that require review by Scrutiny members as they cover key issues within the Highway Inspection Manual, these being:

4.10.1 Response Times – this is based on the inspector's risk assessment of a defect. The risk assessment is carried out by the inspector, scoring both severity (impact) and probability of the risk on a scale 0 to 4. These scores are then multiplied to give a result in the following Risk Assessment Matrix Table as below:

Probability / Impact	Very low	Low	Medium	High
Negligible	**1**	**3**	**3**	**4**
Low	**2**	**4**	**6**	**8**
Noticeable	**3**	**6**	**9**	**12**
High	**4**	**8**	**12**	**16**

A target time is then set for each resulting defect, based on past best practice and alignment with the most recent ACoP (ref 4.3), as follows:

- 2 Hours for Priority 1 (immediate response required) – scoring high (red – 16) on the Risk Assessment matrix
- 24 Hours for Priority 2 (emergency defect identified) – scoring medium to high (orange – 12) on the Risk Assessment matrix
- 28 Days for Priority 3 (non-urgent defect identified) – scoring low to medium (yellow – 6 to 9) Risk Assessment matrix

Due to the increasing savings that are being expected from the future MTFP (Medium Term Financial Plan), this will see an increasing pressure on current service levels including the reactive maintenance. Last year (2015-16) the total number of identified potholes was approximately 8,500, the average results from performance indicators give the following:

- 2 Hours for Priority 1 (immediate response required) – 100% (top quartile)
- 24 Hours for Priority 2 (emergency defect identified) – 99% (top quartile)
- 28 Days for Priority 3 (non-urgent defect identified) - 40% (third quartile)

The percentage figure gives the proportion that were completed within parameters; the quartile gives the relative position when compared to peer authorities in the latest APSE (Association for Public Service Excellence) survey

As can be seen the resources are adequate for emergencies and immediate responses, but have not performed (due to challenging weather and unreliable contractors) with the non-urgent defects when the target is set at 28 days. Anecdotally other peer local authorities either have comparable or later target dates for their non-urgent defect repairs. Therefore can consideration be given to extending the 28 day limit for Priority 3 (non-urgent defects) instances to 35 days?

Retaining the 28 day target will maintain CCBC's current high standards and good defence record against insurance claims, though could (in times of high demand) divert resources from more pressing activities. A relaxation of the target to 35 days could see an increase the insurance risk, but would enhance resource programme flexibility, so becoming more responsive to immediate and emerging reactive works.

It is recommended that the 28-day response target is maintained and the risks in managing this level of service are closely monitored.

4.10.2 Inspection Frequency - this is currently based on the categorisation of the highway (the network hierarchy) and has been set out in the following table:

CATEGORY	**INSPECTION INTERVAL**
CARRIAGEWAYS	
Strategic Routes ('A' Roads) Main Distributor ('B' Roads)	4 times a year
Secondary Distributor Link Roads Local Access Roads/Rear Lanes	2 times a year
FOOTWAYS/CYCLEWAYS	
Prestige & Primary Walking Zones Secondary Walking Route	12 times a year
Link Footway and Cycleway remote from carriageway Local Access Footway	2 times a year
Cycle Trails	2 times a year

These intervals are based on past best practice and alignment with the most recent ACoP (ref 4.3). Anecdotally other peer local authorities either have comparable or less frequent target levels. This current inspection regime is resourced by seven inspectors who patrol the entire Caerphilly highway network.

The review is to assess whether the inspection frequency has been set at the correct level, if not what should the proposed rate be?

This will then determine the resource requirement going forward. An increased frequency rate will require more resources and should lead to better defect detection levels, less frequency would signal a reduction in resources and reduced defect detection levels.

Overall, the Council's performance for inspections is at a 100% completion and, based on our very good record at defending insurance claims, these inspection intervals are deemed appropriate.

4.10.3 Intervention criteria - this is currently based on the categorisation of the highway (the network hierarchy) and has been set out in the following table:

CATEGORY **CARRIAGEWAYS**	**INTERVENTION CRITERIA (minimum defect depth)**
Strategic Routes ('A' Roads) Main Distributor ('B' Roads)	40mm
Secondary Distributor Link Roads Local Access Roads/Rear Lanes	50mm
FOOTWAYS/CYCLEWAYS	
Prestige & Primary Walking Zones Secondary Walking Route	20mm
Link Footway and Cycleway remote from carriageway Local Access Footway	40mm
Cycle Trails	40mm

It takes seven inspectors to enforce the current intervention criteria (as indicated on the table above) based on past best practice and alignment with the most recent ACoP (ref 4.3), who patrol the entire highway network throughout Caerphilly. Anecdotally, as with both 4.10.1 and 4.10.2, other peer local authorities either have comparable or deeper defect intervention depths.

The review is to assess whether the intervention criteria is sufficient for reactive works to take place, if not what is the preferred minimum defect depth?

This will then determine the resource requirement going forward; shallower minimum depths that trigger intervention works will require more resources and should see a decrease in insurance claims; increased intervention depths would probably reduce resource levels, but an increase in insurance claims (both in number and severity).

From the Council's performance in terms of repudiating claims and the effects such defection sizes have on claimants, it is recommended that the intervention criteria, which are similar to most of our neighbouring authorities, remain the same.

5. EQUALITIES IMPLICATIONS

5.1 A functional and correct Highway Inspection Manual will benefit the vulnerable, young and elderly, by ensuring the infrastructure on which other services depend (including emergencies), remains robust throughout the year.

6. FINANCIAL IMPLICATIONS

6.1 The Reactive Maintenance budget has been retained at £1,315k from last year. This budget covers the following activities:

- Emergency call-outs for out-of-hours works
- Safety defect repairs on carriageways and footways (2 hour to 24 hour responses)
- Safety defects on carriageways and footways (28 days responses) reactive works

The expenditure of this budget is regularly over its annual target, as it represents (along with Winter Maintenance) the most responsive part of the service and is subject to the day-to-day incidents and unexpected circumstances. So far, with careful financial accounting and managing these variable factors, the Highway Operations budget has been balanced at financial year end.

7. PERSONNEL IMPLICATIONS

7.1 There are no direct personnel implications from this endorsement.

8. CONSULTATIONS

8.1 All comments received have been taken into consideration and are included in the report.

9. RECOMMENDATIONS

9.1 For Scrutiny Members to comment on the content and annual review process for the HIM, considering the key issues as outlined in 4.10. With the recommendations being:

- That the 2 hour, 24 hour and 28-day response targets are maintained with the management for this current service level being closely monitored, especially for the Priority 3 (non-urgent defect identified) 28 day target.
- To maintain the inspection intervals, as they currently stand.
- To maintain the current intervention criteria on road and footway defects.

9.2 To consider and offer comments in relation to the existing HIM, prior to consideration by Cabinet.

10. REASONS FOR RECOMMENDATIONS

10.1 The recommendations are put forward on the basis that, with current levels of resources, the level of service can still be maintained and any lowering in the response time targets, inspection intervals and intervention criteria would heighten the risk of successful highway insurance claims against the Council. These would need to be reviewed with any negative impact on resource levels from future MTFPs.

10.2 To provide comments and views with regards to the existing HIM, prior to approval by Cabinet.

11. STATUTORY POWER

11.1 Highway Act 1980.
Flooding & Water Management Act 2010
Well-being of Future Generations (Wales) Act 2015

Author: Graham Parry, Highway Operations Group Manager

Consultees: Cllr T Williams – Cabinet Member for Highways, Transportation & Engineering
Cllr D T Davies – Chair of Regeneration and Environmental Scrutiny Committee
Cllr E Aldworth – Vice Chair of Regeneration and Environmental Scrutiny Committee
Chris Burns – Interim Chief Executive
Christina Harrhy - Corporate Director – Communities
Nicole Scammell, Acting Director of Corporate Services and S.151
Terry Shaw – Head of Engineering Services
Colin Jones - Head of Performance & Property Services
Gail Williams – Interim Head of Legal Services/Monitoring Officer
Stephen Harris – Interim Head of Corporate Finance
Rob Hartshorn – Head of Public Protection
Mike Eedy – Finance Manager
Trish Reardon – HR Manager
Anwen Rees – Senior Policy Officer – Equalities and Welsh Language
Gareth Richards – Highway Management Manager
Steve Hodges – Network Management Manager
Andrew Southcombe, Finance Manager (Corporate Services)

Background Papers:
Well-maintained Highways - Code of Practice for Highway Maintenance Management. (Roads Liaison Group) - July 2005.

Appendices:
Appendix A – Highways Operations Group Framework
Appendix B – Highway Inspection Manual (HIM) – Parts 1 & 2

HIGHWAY OPERATIONS GROUP FRAMEWORK

Introduction

Highway Operations Group have the responsibility of maintaining the highway and associated infrastructure for Caerphilly County Borough Council, covering an asset that collectively amounts to £2 billion. Its principal purpose is to:

- ❖ Protect and maintain the highway network.
- ❖ Ensure safe, effective use and development of the highway network.
- ❖ Develop and deliver a range of engineering projects to improve the highway
- ❖ Deliver integrated and sustainable transportation and engineering projects.

The many facets of Highway Operations means that the processes and procedures can be both distinct and overarching, leaving the need to both identify the functions within the Group and consolidate them into distinct areas of work. To this end a framework has been produced to form the structure on which these areas of work can be placed, giving a comprehensive overview of the extent and nature of the work that is carried out by the Highway Operations Group. The division of the Framework is as follows:

- Asset Management Plan – how the Council's assets are identified, assessed, inspected, maintained and recorded
- Highway Maintenance Plan – how Highway Operations maintain the highway assets (highways, footways, bridges, drainage etc.)
- Highway Operations Plan – how Highway Operations carry out tasks that do not have a direct connection with the Council's highway assets (out-of-hours duties, utility works inspections etc.)

These headings are then subdivided where the function covers an extensive area, such as Highways Inspection and Winter Maintenance. Further these areas will overlap with other areas such as Standby duties and NCS. In these cases the principal operational document will detail the duplicated practices/ process/ procedure and the more bespoke work area will be referenced in the appropriate section(s).

Whilst each document will be written on a stand-alone basis; reference to other will be frequently made. Each document will be formed on the basis of:

- o What we do
- o Why we are doing it
- o How we are doing it
- o The authorisation required to do the work
- o The mechanism for review and alteration of the document
- o Lead officer responsible for the document
- o Specific training needs

KEY:

- Document to be reviewed
- Document under separate review
- Documents pending review

HIGHWAY OPERATIONS GROUP FRAMEWORK

HIGHWAY ASSET MANAGEMENT PLAN

HIGHWAY MAINTENANCE PLAN

HIGHWAY INSPECTION MANUAL

- Staff set up
- Inspections/ Frequencies
- Actions undertaken
- Recording and registration

TIPS MAINTENANCE & RECYCLING

- Staff set-up
- Programme annual and 15 year cycle
- Sequence of works
- Existing types and methods of recycling
- segregating waste & materials
- Assessment of processes
- New proposals

DRAINAGE MAINTENANCE

- Drains & Gullies:
- Staff set up
- Inspections
- Works undertaken

STRUCTURES

- Bridges
- Retaining Structures
- Culverts

PLANNED WORKS

- Assessing carriageway / footway
- Resurfacing / surface dressing
- Slurry sealing
- Assessment and processing of existing / new VRS
- Procedure for works undertaken

STREET LIGHTING

- Staff organisat'n
- Asset mainten'ce function
- Inspections/ frequencies
- Activities and works carried out
- Registration and recording
- Initiatives

WINTER MAINTENANCE PLAN

- Staff Organisation/ set-up
- Functions of Winter Maint'ce
- Inspection/ detection
- Route/ Actions prioriti'n
- Works processes and frequency

HIGHWAY OPERATIONS PLAN

NCS DUTIES

- Maint'ce duties
- Footways
- Structures
- SEW Contract

STANDBY DUTIES

- Shift arrange'ts
- Require'ts for duties

LICENSES

- Staff set up
- Inspections
- Notification
- Penalties

UTILITIES & NRSWRA DUTIES

- Staff set up
- Inspections
- Actions undertaken

BUILDING & DEPOT MANAGEMENT

- System set up
- Inspections/ Frequencies
- Actions undertaken
- Recording and registration

APPENDIX B

Caerphilly County Borough Council Highway Inspections Manual

First edition July 2016

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Revision	Last updated	Page(s)	Revision Description
1	21.01.2015		Gavin Barry (Draft)
2	15.07.2016		GP Review
3	08.08.2016		GR Review

Distribution

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Head of Engineering Services	Terry Shaw
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Principal Engineer (Capital Works)	Chris Adams
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Contents

Preface

Caerphilly County Borough Council's (CCBC) ***Highway Inspections Manual*** sets out the Council's procedure for carrying out highway safety and service inspections.

The objective of this manual is to make the highway safer for all users and to provide a reference text to all staff within the Highway Operations Group. It should also provide a useful medium to other departments and stakeholders highlighting the extent of the Highways Inspection regime. Moreover it will be a standard issue document to all new employees.

To meet the overriding objective of making the highway safer for all users, a risk management approach is used to assess defects and prioritise treatments, in line with the approved code of practice (ACoP) for Highway maintenance 'Well-Maintained Highways 2005 (Appendix I). The manual explains the reasons for implementing the risk management approach in terms of best practice.

The manual is split into four parts. Part 1 explains the background and policy for the highway inspection process. Part 2 provides guidance on how inspections should be carried out. Part 3 of the manual provides photographic and written guidance for Council highway inspectors to help assess highway defects. The final section, Part 4 of the manual is the appendices for the 'Highways Code of Practice' and standard letter templates.
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PART 1 Background and policy information

1.1 Purpose and Scope

The establishment of an effective regime of inspection, assessment and recording is central to effective and efficient highway maintenance and key to addressing the fundamental objectives of highway maintenance strategy, these being:

- Network safety
- Network serviceability
- Network sustainability

This Highway Inspections Manual defines the characteristics of the inspection regimes, including frequency of inspection, items to be recorded and nature of response. They are all set within the context of the County Borough Council's overall policy and maintenance strategy.
The manual has also been developed with the following specific objectives in mind;

- To ensure network safety and best value through the application of a defined auditable inspection strategy
- To assist in providing a high-quality, responsive highway maintenance service to our customers
- To follow current best practice by implementing a risk-based defect assessment process
- To provide clearly documented inspection guidance for highway inspection personnel at all levels

By providing guidance to personnel involved in undertaking highway safety inspections, it is the intention that they can carry out their duties with consistency and to clear, recognised and understood criteria. This guidance covers the risk assessment procedure to identify how defects are prioritised and how an appropriate response is determined. It forms part of the training programme for new inspectors and is also an aide-memoir to established inspectors.

The manual can also be used as a guide to non-professionals to explain the highway inspections process in a clear, unambiguous way, such as in claims and legal proceedings against the Council, as well as in dealing with enquires from the public.

The Highway Inspections Manual covers:

Safety Inspections

Safety inspections are carried out at regular frequencies that are set to reflect the level of use and importance of the road or footway. These inspections are designed to identify all defects likely to create danger or serious inconvenience to users of the network or the wider community.

Service Inspections

Service inspections are more detailed inspections of particular highway features and are designed to ensure that they meet serviceability requirements. The scale and scope of these inspections will reflect the Authorities policy objectives, support their asset management objectives and maintenance planning.

Ad-hoc Inspections

These are also undertaken via complaints from members of the public or other internal departments. In addition to any defects that are noticed whilst carrying out routine duties.

1.2 Legal Requirements

The Highways Act 1980 sets out the main duties of highway authorities in England and Wales. In particular, Section 41 imposes a duty to maintain highways maintainable at public expense, and almost all claims against authorities relating to highway functions arise from the alleged breach of this section.

Caerphilly County Borough Council undertake safety inspections in accordance with the principles of the most current Code of Practice 'Well-Maintained Highways - Code of Practice for Highway Maintenance' in order that, where necessary, they are able to support a defence under Section 58 of the Highways Act 1980. This requires that a court shall have regard to 'whether the highway authority knew or could reasonably be expected to know, that the condition of the part of the highway to which the action relates was likely to cause danger to users of the highway'.

This defence is dependent upon there being in place adequate policies and procedures to maintain the highway, that the policies and procedures were being enacted, and that there was no prior knowledge of "the defect" before the incident date. Caerphilly County Borough Council carry out inspections on a systematic basis and will defend claims in court on the basis that it has made a reasonable effort to locate and rectify defects. In order to meet this requirement Caerphilly County Borough Council will consider the following:

- An assessment of network, network users interface and risk.
- The regime of safety inspections and record keeping

- The manner in which complaints and accidents statistics are recorded and dealt with
- The response times for carrying out repairs, along with a system for recording and analysing the efficiency and effectiveness of the repair.

In establishing reliability of records, the level of training provided to inspectors is relevant, and qualifications are recorded, including corroboration on when and where they were trained and retrained.

In defending an action, the highway authority will need to establish that it has acted reasonably, by the production of adequate documentation and evidence. This will include:

- Inspection records - maintenance management systems
- Reliability of records – inspectors need to be trained as to what constitutes a defect. Inspector's qualifications also need to be recorded as well as updates.

This is particularly important in the case of network safety, where information may be crucial in respect of legal proceedings. It is important to recognise, however, that all information recorded, even if not primarily intended for network safety purposes, may have consequential implications for safety and may therefore be relevant to legal proceedings. It is also important to recognise that, following the introduction of the Freedom of Information Act 2000, all records are potentially available for public inspection and reference.

1.3 Roles and responsibilities in delivering highway inspections

Within Caerphilly County Borough Council's Highway Operations Group, the main responsibility for maintenance of the Highway asset resides with the Highways Maintenance Manager. For this function his staff consist of the Highways Maintenance Engineer, Highway Maintenance Technician and 7 Highway Inspectors who patrol and govern the authority's asset.

The inspectors are supervised by the Highways Maintenance Engineer, who in turn reports to the Highways Maintenance Manager. The following roles are outlined below:

Gareth Richards – Highways Maintenance Manager

This role ensures compliance with both The Highways Act 1980, in particular, Section 41 and the 'Well-Maintained Highways - Code of Practice for Highway Maintenance'.

Gavin Barry – Highways Maintenance Engineer

This role covers the daily supervision of the Highway Inspectors and provides an interface between the client and the contractor, ensuring that the inspections schedules are maintained and that all works are compliant.

Highways Technician

To support the Highway Maintenance Engineer and act as the link between NCS (in-house contractor)/ external contractors and the Highway Maintenance function within the Group. Inspecting and assessing work lots, then rectifying any identified works defects.

Highways Inspectors (seven)

This primary function of this role is to police the highway network and to carry out periodic inspections of the authorities highway asset. All relevant data that is collected on site, either from scheduled inspections or ad-hoc visits is saved electronically via 'Exor/Mayrise.

In addition, they are responsible for dealing with matters relating to the control of use of the highway, in terms of:

- Approving the issue of licences for skips,
- Vehicles for sale (causing an obstruction)
- Contractors working on the highway (including section 171)
- All emergencies that may arise that affect the highway on a 'round the clock' basis

The Highway Inspector accepts responsibility for the accuracy of the information recorded whilst undertaking safety inspections. In certain circumstances, this person may be called into a Court of Law to substantiate their recordings or actions.

The highway network is divided into seven separate areas (ref to Figure 1 of Inspection Areas). These areas have been assessed on their geography, the length of network and the number of service requests generated for that particular area. . Based on this information an informed decision has been made to determine the geographical limits of an Inspectors area ensuring that adequate resources are available. This assessment allows each inspector has sufficient time to perform the appropriate inspections per annum, as set out in the Network Hierarchy.

Within the highway maintenance department monthly or quarterly meetings are held between the operational staff. This ensures that any dynamic changes to the highway or amendments to the existing asset (new adoptions etc) are discussed and recorded.

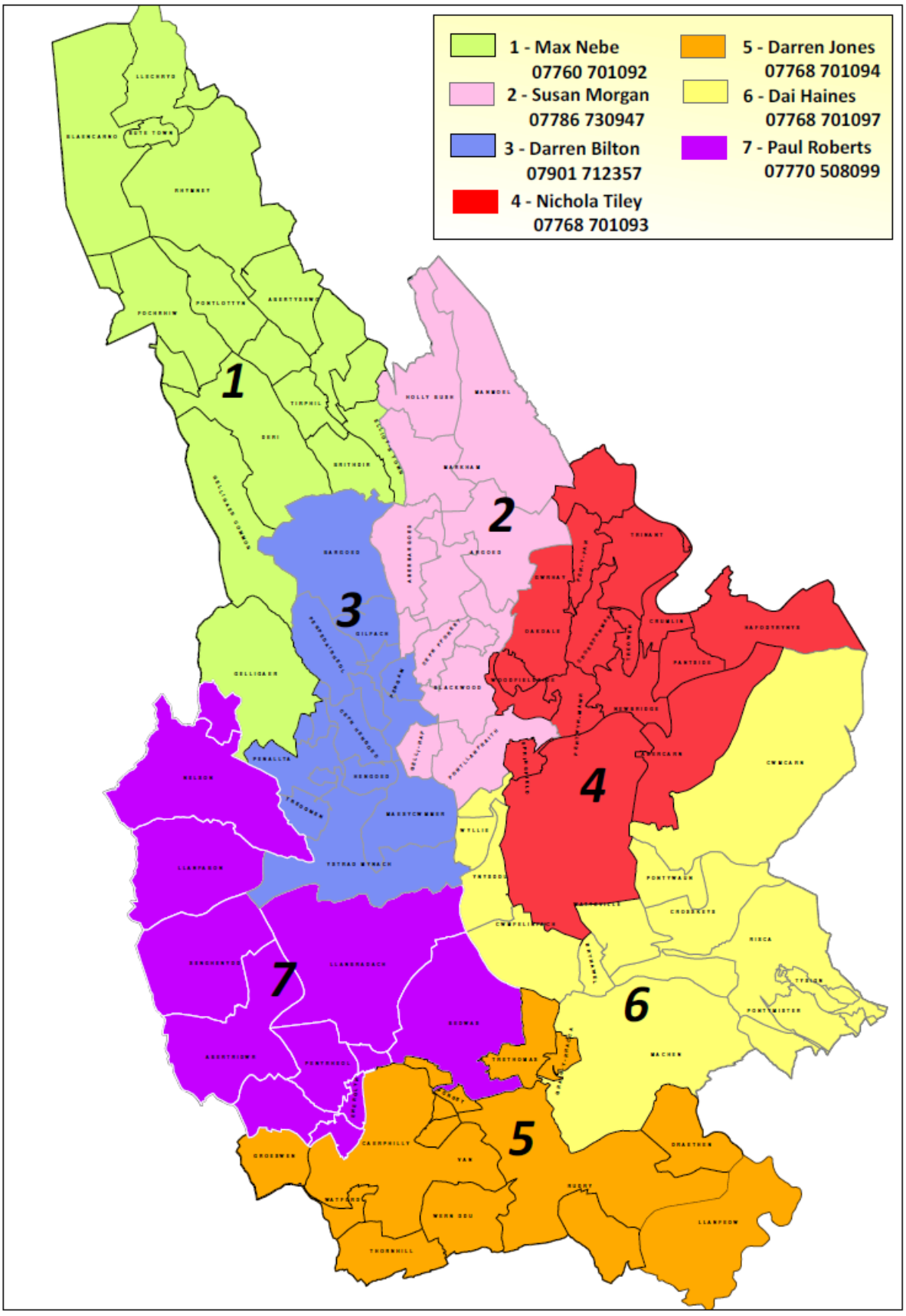
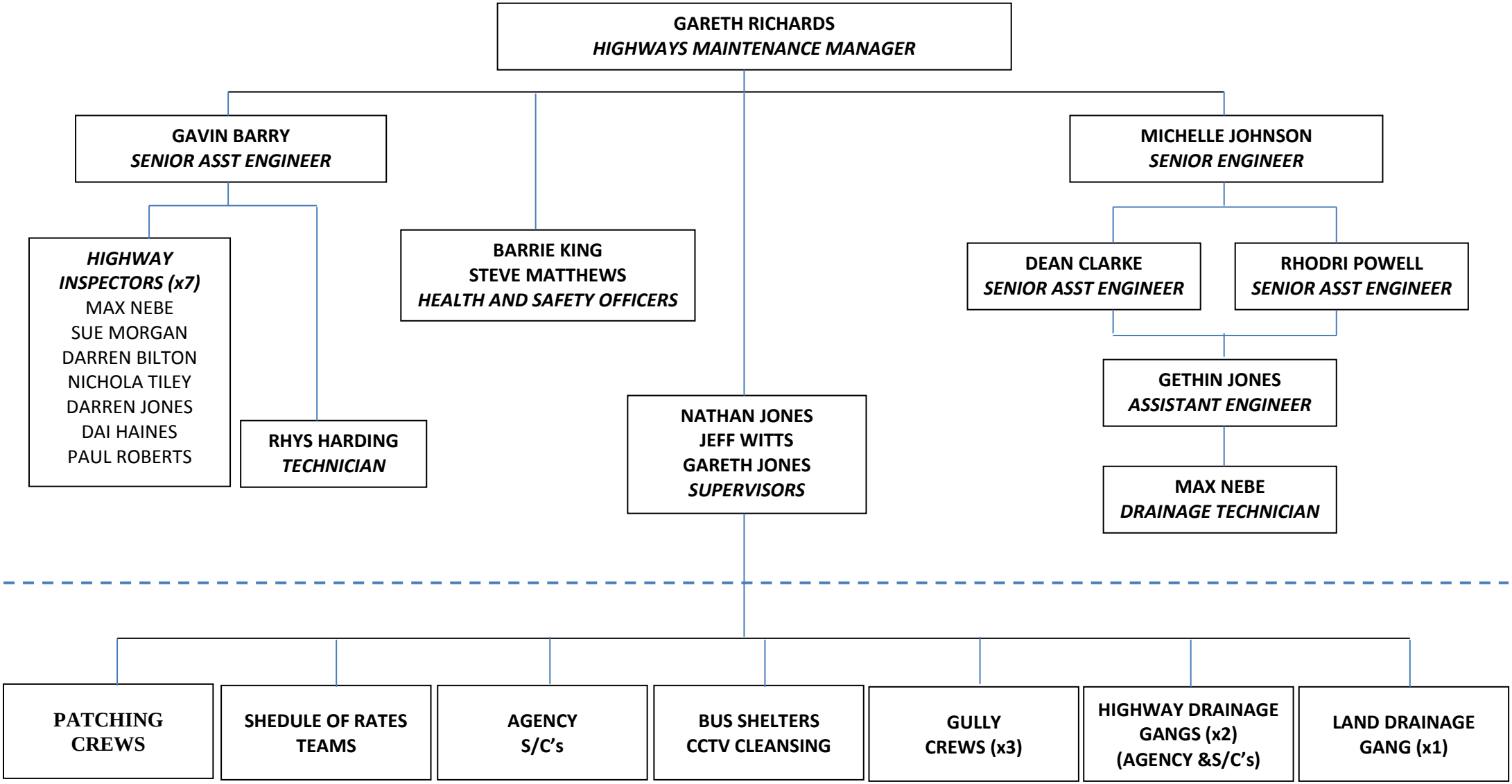


Figure 1 Inspection Areas

The following organisational structure shows how highway inspections are resourced:



1.4 References to existing Policy and Guidance Documents

The guidance given in this Highway Inspections Manual is to be read in conjunction with the following Caerphilly Council policy and guidance documents and linked to the authority's corporate objectives.

Table 1 Summary of existing policy and guidance documents

Plan Name	Description
Divisional Service Improvement Plans	Outlines key areas and objectives within the service area, providing strategic aims of the department.
Grounds Maintenance Plan	Provides information on areas that are maintained periodically, highlighting treatment frequency as well as plans pinpointing extent of ownership
Highway Asset Management Plan	A plan for management, preservation and enhancement of the highway asset base to deliver prescribed levels of service and meet the needs of current and future customers
Technical Data Surveys	Provides technical analysis of the highway asset (such as SCRIM, Skid resistance etc.). Information provided is then used in detailed assessments of the network.
CRM Manual	Plan outlining how CCBC (Caerphilly County Borough Council) deals with customer interaction and the recording of 'service requests'
Highway Tree Policy	This document explains CCBC responsibilities, strategy and policy in respect to the Highway Tree Policy.
At Risk Culvert List	Highlights 'at risk culverts' throughout the authority that require routine maintenance and their hierarchy of threat level.
Winter Maintenance Policy	This document explains CCBC responsibilities, strategy and policy in respect to the management of the highway infrastructure network through a defined winter maintenance period.
Management of Highway Structures	This document explains CCBC responsibilities, strategy and policy in respect to the Management of Highway Structures
Out of Hours Duty Officer Manual	CCBC operates 24hr emergency callout operation throughout the whole year. This document outlines the procedures, hierarchy and control measures that have to be followed when dealing with an emergency, outside normal working hours

1.5 Network Hierarchy

A network hierarchy is used to classify the maintenance network on the basis of the volume and composition of traffic using it. The hierarchy also takes into account the risk assessment and the role of the particular section of the carriageway, footway or cycleway in the network.

The hierarchy is the foundation of a coherent, consistent and auditable maintenance management plan and is fundamental in determining policy priorities. It is the link between maintenance policy and implementation and is used to assist in determining standards for maintenance and new construction.

Network hierarchies are annually reviewed via regular meetings to reflect changes in network characteristics and use, so that maintenance policies, practices and standards reflect the actual current use of the network.

The aim of the road hierarchy is to:

- Allow structured programmes of inspections to be developed and statutory duties to be fulfilled
- Allocate resources according to the importance of the road within the network
- Set policies and standards according to the importance of the road within the network.

It is the intention to use the road hierarchy as a key indicator of the standard of repair required to keep the road in reasonable condition having regard to its function and the volume of traffic using it.
Caerphilly Council's highway network classifications can be seen in the tables 2 to 4 below and are set-out in accordance with the latest code of practice for ‘well maintained highways.

Table 2 Carriageway hierarchy

Category	Hierarchy Description	Type of Road	Description
2	*Strategic Route*	*Principal roads between Primary Destinations*	*Routes of fast moving long distance traffic with little frontage access or pedestrian traffic. Speed limits are usually in excess of 40mph and there are few junctions. Pedestrian crossings are either segregated or controlled and parked vehicles are generally prohibited*
3a	*Main Distributer*	*Major Urban Network and Inter-Primary Links. Short-medium distance traffic*	*Routes between Strategic Routes and linking urban centres to the strategic network with limited frontage access. In urban areas speeds limits are usually 40mph or less, parking is restricted at peak times and there are positive measures for pedestrian safety*
3b	*Secondary Distributer*	*Classified Road (B and C class) and unclassified urban bus routes carrying local traffic with frontage access and frequent junctions*	*In rural areas these roads link the larger villages and HGV generators to the Strategic and Main Distributer Network. In built up areas these roads have 30mph speed limits and very high levels of pedestrian activity with some crossing facilities including zebra crossings. On-street parking is generally unrestricted except for safety reasons*
4a	*Link Road*	*Roads linking between the Main and Secondary Distributer Network with frontage access and frequent junctions*	*In rural areas these roads link the smaller villages to the distributer roads. They are capable of carrying two-way traffic. In urban areas they are residential or industrial inter-connecting roads with 30mph speed limits random pedestrian movements and uncontrolled parking*
4b	*Local Access Road*	*Roads serving limited numbers of properties carrying only access traffic*	*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 HGV's. In urban areas they are often residential loop roads or cul-de-sacs.*

Table 3 Footway hierarchy

Category	Hierarchy Description	Description
1(a)	*Prestige Area*	*Very busy areas of towns and cities with high public space and street scene contribution*
1	*Primary Walking Route*	*Busy urban shopping and business areas and main pedestrian routes*
2	*Secondary Walking Route*	*Medium usage routes through local areas feeding into primary routes, local shopping centres etc.*
3	*Link Footway*	*Linking local access footways through urban areas and busy rural footways.*
4	*Local Access Footway*	*Footways associated with low usage, short estate roads to the main routes and cul-de-sacs.*

Table 4 Cycleway hierarchy

Category	Description
A	*Cycle lane-forming part of the carriageway, commonly 1.5 metre strip adjacent to the nearside kerb. Cycle gaps at road closure point (no entries allowing cycle access)*
B	*Cycletrack, a highway route for cyclists not contiguous with the public footway or carriageway. Shared cycle/pedestrian paths, either segregated by a white line or other physical segregation, or un-segregated.*
C	*Cycle trails, leisure routes through open spaces. These are not necessarily the responsibility of the highway authority, but may be maintained by an authority under powers or duties*

1.6 Condition Standards

This section outlines how different highway features contribute to the core objectives of safety, serviceability and sustainability. The table below shows how each element of the highway contributes to these core objectives list is not exhaustive).

Table 5 Inventory items and their contribution to strategic objectives

Inventory Item	Safety	Serviceability	Sustainability
Carriageway	Nature, extent and location of surface defects; Nature and extent of edge defects; Nature and extent of surface skidding resistance.	Nature and extent of surface defects;	Nature and extent of surface defects; Nature and extent of carriageway deflection.
Footways	Nature, extent and location of surface defects; Nature and extent of kerb and edging defects.	Nature and extent of surface defects; Extent of encroachment and weed growth; The slipperiness of the surface; The quality of the surface; Integrity of the network.	Convenience and ease of use; Nature extent and location of surface defects; Extent of damage by over-running and parking.
Cycle Routes and Safe routes to schools	Nature, extent and location of surface defects; Nature and extent of kerb and edging defects.	Nature and extent of surface defects; Extent of encroachment and weed growth; The slipperiness of the surface; The quality of the surface; Integrity of the network.	Convenience and integrity of the network; Nature extent and location of surface defects; Extent of damage by over-running and parking.
Drainage	Accumulation of water on carriageways, footways and cycle routes.	Accumulation of water on carriageways, footways and cycle routes.	Polluted effluent from highway drainage should not be directed into watercourses Authorities have a duty to prevent flooding, work with others to minimise the future risk of flooding Inadequate drainage will

Inventory Item	Safety	Serviceability	Sustainability
			reduce effective life of carriageway or footway asset and increase maintenance liability.
Embankments and Cuttings	Risk of loose material falling to injure users or damage facility.	Risk of damage or service interruption.	Damage or loss of habitat; Interruption or pollution of watercourse; Extent of damage and reduced life.
Landscaped areas and Trees	Obstruction to user visibility and legibility of traffic signs; Falling branches from trees; Root growth affecting surface regularity.	Potential for service interruption; Quality of user experience.	Landscape conservation; Mitigation of climate change effects; Support for habitat and biodiversity; Problems of root growth for surface, structure and highway drainage
Fences, Barriers and Highway safety restraints	Integrity and location of safety fencing for vehicles and pedestrians.	Risk of livestock disrupting traffic. Service interruption and essential for highway safety	Appearance and condition of fencing.
Signs and Bollards	Identification of risk to users; Separation of potential traffic conflicts.	Contributes to ease of use; Contributes to network integrity	Support of sustainable transport mode; Contribution to local economy; Heavy traffic routing can optimise maintenance.
Road Markings and Studs	Route delineation in darkness and poor weather; Potential for damage and injury if loose.	Ease of use in darkness and bad weather;	Support of sustainable transport modes; Edge delineation to reduce edge damage; Movement of wheel tracking to reduce localised damage.
Traffic signals and crossings	Separation of potential traffic conflicts; Key safety contributor for vulnerable road users.	Contributes to ease of use and efficiency; Contributes to network integrity.	Support of sustainable transport modes; Support for local economy.

1.7 Performance Monitoring and Improvement

Performance indicators should be monitored and reviewed to assess current performance and identify a programme of improvement. The review programme is set out in Table 10 (Defect Intervention levels). The review should be undertaken using a risk management approach and introduce changes to ensure that the Health and Safety, Environmental, Political and Financial risks both to users and the Authority are managed effectively. The changes made are then measured, and improvements assessed and future targets set to ensure continual improvement.

Caerphilly County Borough Council continuously monitors all aspects of data in relation to the Highway Inspection process. Monthly reviews are undertaken to ensure that inspection frequency targets are maintained and Service Requests are completed within timescales.

PART 2 Inspection Procedures

2.1 Introduction

Caerphilly County Borough Council undertakes regular inspections of all its adopted highway network. This section provides further details on these procedures.

2.2 Overview of the process of highway inspections

Figure 2 describes the process for inspection, assessment and evaluation of defects, both during routine “safety” or ad-hoc inspections and those reported by third parties, or otherwise generated during the operations of the council.

It should be noted that all inspections are undertaken as visual inspections only with no physical actions undertaken during the preliminary visit.

The Council’s inspection process is informed by risk assessment principles, both in determining the frequency of inspections and in determining the type and speed of response to a defect.

2.3 Record keeping and data managing

All information obtained from the highway safety inspections, together with the nature of the response, including all nil returns shall be recorded consistently. The information obtained will be able to be reviewed independently and in conjunction with other survey information. Highway Inspection returns are recorded on ‘Mapcapture’ which is a generic OS (Ordinance Survey) for data capturing Highway Inspection. All data fed from this process will be stored electronically within Exor/Mayrise and Mayrise.

Each inspection must be recorded against the relevant unique street section number. Additional information relating to the overall condition of both the footway and carriageway should be observed during each inspection. This information is utilised for both identifying potential treatments and as an update to the asset management register.

The Exor/Mayrise system makes provision for recording service requests, complaints, reports or information from users and other third parties. These may require immediate action, special inspection, or influence future inspection or monitoring arrangements (refer to Appendix A for further details and screenshots from Exor/Mayrise).

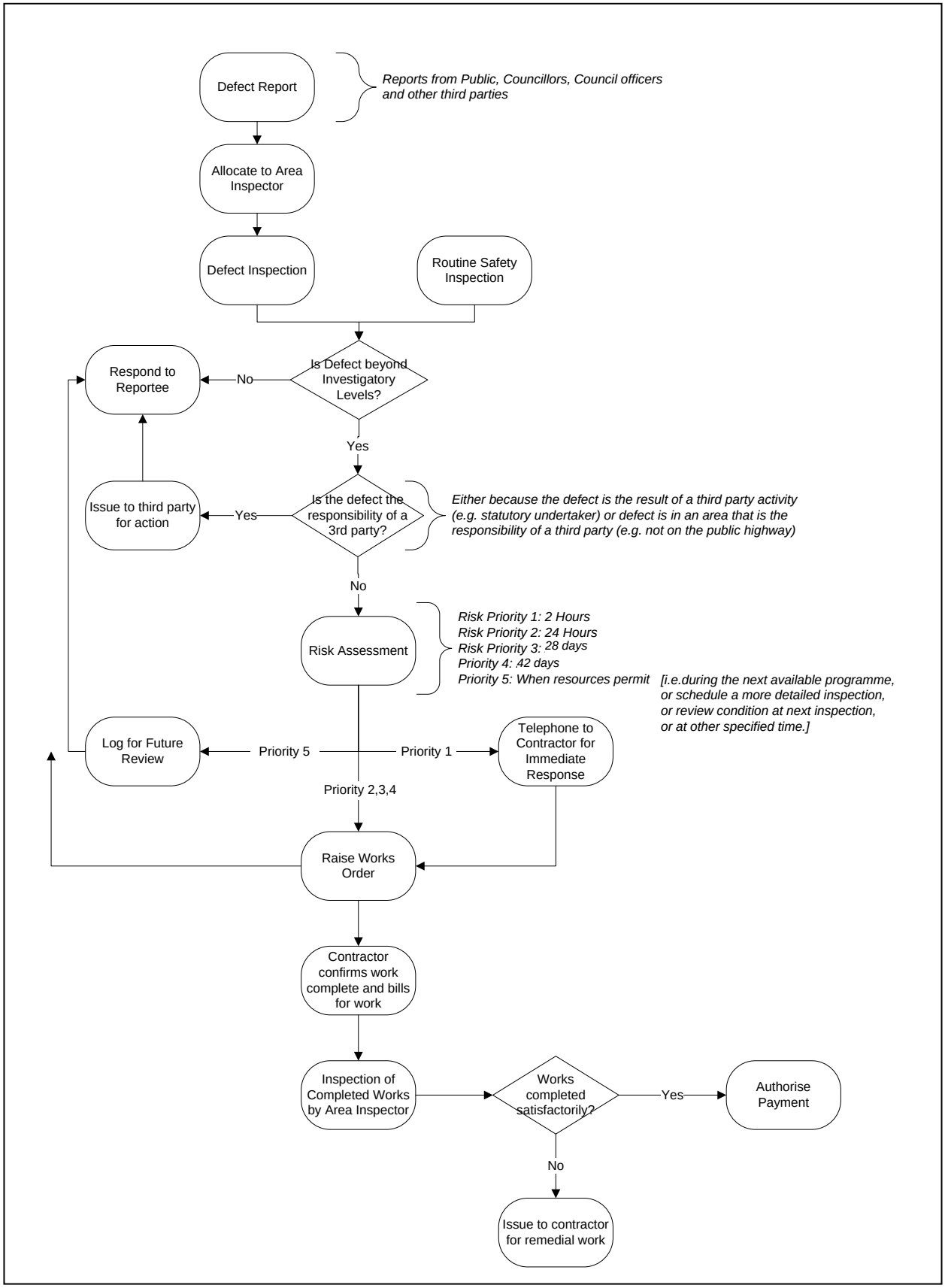


Figure 3 Overview of the process of highway inspections

2.4 Summary of Highway inspections

Table 9 Summary of inspection types and procedures

Inspection type	Asset Description (Coverage)	Survey methodology	Data recording methodology	Defects and Investigatory Levels (degree of deficiency)	Inspection frequency and guidance to be used **	Nature of response (times and procedure etc)
Safety Inspections						
Carriageway	*Carriageways, Pedestrian crossings, Surfacing, Kerbing Ironwork, Drainage Road markings, Signs, bollards, lights, signals, Safety fencing and barriers, trees and vegetation*	*Driven/Walked*	*Manually logged until return to office base, where information is saved electronically into Exor/Mayrise*	*Refer to Table 10*	*Variable according to category. Refer to Table 10 in part 2*	*Risk Matrix - Tables 11 and 12*
Footway	*Pedestrian crossings Surfacing, Kerbing Ironwork, drainage, markings, signs, bollards, lights, barriers, trees and vegetation*	*Walked*	*Manually logged until return to office base, where information is saved electronically into Exor/Mayrise*	*Refer to Table 10*	*Variable according to category. Refer to Table 10 in Part 2*	*Risk Matrix - Table 12*
Cycleway	*Pedestrian crossings Surfacing, Kerbing Ironwork, drainage, markings, signs, bollards, lights, barriers, trees and vegetation*	*Walked/ Cycled*	*Manually logged until return to office base, where information is saved electronically into Exor/Mayrise*	*Refer to Table 10*	*Variable according to category. Refer to Table 10in Part 2*	*Risk Matrix - Table 12*
Service Inspections (including Detailed Inspection)						
Structural Maintenance	*Bridges, Structures*	*Driven/Walked*	*Manually logged until return to office base, where information*	*Visual inspection only and refer to Structures department*	*Variable according to category. Refer to Table 10in Part 2*	*Refer to structures department*

Inspection type	Asset Description (Coverage)	Survey methodology	Data recording methodology	Defects and Investigatory Levels (degree of deficiency)	Inspection frequency and guidance to be used **	Nature of response (times and procedure etc)
			is saved electronically into Exor/Mayrise			
Structures	*Bridges, Structures, Retaining Wall Inspections, Safety Barrier - Routine Structural Inspection*	*Driven/Walked*	*Manually logged until return to office base, where information is saved electronically into Exor/Mayrise*	*Visual inspection only and refer to Structures department*	*Variable according to category. Refer to Table 10in Part 2*	*Refer to structures department*
Bridge Assessment (and Strengthening)	*As above*	*Driven/Walked*	*Manually logged until return to office base, where information is saved electronically into Exor/Mayrise*	*Visual inspection only and refer to Structures department*	*Variable according to category. Refer to Table 10in Part 2*	*Refer to structures department*
Tips (disused mines and quarries)	*Stability of disused tips*	*Walked*	*Manually recorded*	*Refer to Tips Inspection Manual*	*Refer to Tips Inspection Manual*	*Refer to Tips Inspection Manual*
Street lighting and Illuminated Traffic Signs equipment	*Streetlights, feeder pillars*	*Walked/ Driven*	*Manually logged until return to office base, where information is saved electronically into Exor/Mayrise*	*Refer to Street Lighting Department*	*Refer to Street Lighting Department*	*Refer to Street Lighting Department*
Highway Drainage	*Condition assessment for gullies*	*Walked*	*Manually logged until return to office base, where information is saved electronically into Exor/Mayrise*	*Refer to drainage section*	*Refer to drainage section*	*Refer to drainage section*
Land Drainage	*Culverts*	*Walked/ Driven*	*Manually logged until return to*	Refer to Land drainage	*In line with inspection schedule, Ad hoc basis*	

Inspection type	Asset Description (Coverage)	Survey methodology	Data recording methodology	Defects and Investigatory Levels (degree of deficiency)	Inspection frequency and guidance to be used **	Nature of response (times and procedure etc)
			office base, where information is saved electronically into Exor/Mayrise	Department	*and via service requests*	
Street works inspections	*Statutory undertakers (utility) defect*	*Walked/ Driven*	*Manually logged until return to office base, where information is saved electronically into Exor/Mayrise*	Refer to NRSWA department	In line with inspection schedule, Ad hoc basis and via service requests	
Condition assessment surveys	*Skid resistance, CVI, DVI*	*Walked/ Driven, Visual only*	*Manually logged until return to office base, where information is saved electronically into Exor/Mayrise*	Record as per inspections and refer to Highways Engineer	In line with inspection schedule	
Inspections for Network Integrity (relating to operational efficiency)	*Traffic signs or markings*	*Walked/ Driven*	*Manually logged until return to office base, where information is saved electronically into Exor/Mayrise*	If signs are obscured or damaged, action as necessary	In line with inspection schedule	
Inspections for Regulatory Purposes (regulation and enforcement activities)	All assets within the Highway	*Walked/ Driven*	*Manually logged until return to office base, where information is saved electronically into Exor/Mayrise*	Varies depending on action/ notice served	Undertaken as part of routine inspections, on a ad-hoc basis and via service requests	Refer to table

Inspection type	Asset Description (Coverage)	Survey methodology	Data recording methodology	Defects and Investigatory Levels (degree of deficiency)	Inspection frequency and guidance to be used **	Nature of response (times and procedure etc)
'Ad-hoc' inspections	*Carriageways, Pedestrian crossings, Surfacing, Kerbing Ironwork, Drainage Road markings, Signs, bollards, lights, signals, Safety fencing and barriers, Trees and vegetation*	*Walked/ Driven*	*Manually logged until return to office base, where information is saved electronically into Exor/Mayrise*	Refer to table 10	Adhoc basis not routine	Refer to table
Inspection of 'requests for service'	*All assets within Highway*	*As required*	*Manually logged until return to office base, where information is saved electronically into Exor/Mayrise*	Refer to table 10	Adhoc basis not routine	Refer to table

2.5 Defect risk assessment process (Safety Inspections)

The Highway inspections procedure has been developed using a risk assessment process in order to provide a practical but robust approach to managing the risks identified. The inspection regime should take account of the potential risks to all road users, and in particular those most vulnerable. The process is summarised below:

1. Risk Identification, where a defect is identified as a potential risk
2. Risk Evaluation, where the nature and degree of risk is assessed based upon the likelihood of an incident resulting from a defect and the impact of that incident, should it arise
3. The selection of a response appropriate to the assessed level of risk

2.5.1 Risk identification

Any item with a defect level which corresponds to, or is in excess of the defect intervention level adopted by the Council is to be assessed for likely risk.

The basis for the identification of risk in relation to highway defects is the use of "intervention" levels. These are set out in the table below, and are intended to be a guide for inspectors, who will also exercise their discretion in identifying defects that present risks, particularly where not included below:

Table 10 Defect Intervention levels

CATEGORY	INSPECTION INTERVAL	DEFECTS - DEFINITION
CARRIAGEWAYS	**(SAFETY)**	**TRIPPING HAZARDS**
Strategic Routes ('A' Roads) Main Distributor ('B' Roads)	**3 Months**	**40mm**
Secondary Distributor Link Roads Local Access Roads/Rear Lanes	**6 Months**	**50mm**
FOOTWAYS/CYCLEWAYS		**TRIPPING HAZARDS (Inc. protrusions)**
Prestige & Primary Walking Zones Secondary Walking Route	**1 Month**	**20mm**
Link Footway and Cycleways remote from carriagewayLocal Access Footway	**6 Months**	**40mm**
C. Cycle Trails	**1 Year**	**40mm**

GENERAL – other 'emergency' safety defects (not exhaustive)
• Missing covers – manholes, inspection chambers, gullies, stop taps etc.; • Lighting columns/illuminated signs – missing door/exposed electrical cables; • Unsafe roadwork's sites; • Recently damaged safety barrier systems; • Traffic Signals – complete failure; • Missing slabs/kerbs; • Obstructions including major c/way flooding

2.5.2 Risk assessment

Having identified a defect that presents a potential risk, a structured process of assessing the defect in-line with Caerphilly Councils intervention ensues. This considers the probability of the defect resulting in an incident and, should an incident arise, the potential level of impact.

Table 11 Risk assessment matrix

Probability / Impact	Very low	Low	Medium	High
Negligible	**1**	**3**	**3**	**4**
Low	**2**	**4**	**6**	**8**
Noticeable	**3**	**6**	**9**	**12**
High	**4**	**8**	**12**	**16**

Inspectors assess the risk probability on a scale of 1 to 4 as follows:

1. 0-4 Very Low – No action
2. 8-9 Low – standard 28 day works instruction
3. 12 Medium – 24hr Emergency Response
4. 16 High – 2hr Emergency Response

The probability is a reflection of the likelihood of a user (i.e. pedestrian, cyclist or vehicle) encountering the risk, and as such, the inspector will need to take into account the following:

The amount of vehicular or pedestrian flow
The network hierarchy
The defect location within the street
The likelihood of further deterioration

The impact is quantified by assessing the extent of damage likely to be caused should the risk become an incident. As the impact is likely to increase

with increasing speed, the amount of pedestrian or vehicular traffic and type of road, are clearly important considerations in the assessment, as is hierarchy, as a reflection of the type of pedestrian or vehicular traffic likely to encounter the defect. Having assessed and categorised, an appropriate response is determined.

Table 12 Priority and Response times

Priority	Response
Priority 1	2 Hours
Priority 2	24 Hour Response
Priority 3	28 Day Response

When assessing each defect and the subsequent response time, the inspector may consider the following (this list is indicative and does not include every factor):

- The depth, surface area or other degree of deficiency of the defect or obstruction
- The volume, characteristic and speed of traffic
- The location of the defect relative to highway features such as junctions and bends
- The location of the defect relative to the positioning of users, especially vulnerable users, such as in traffic lanes or wheel tracks
- The nature of interaction with other defects
- Forecast weather conditions, especially potential for freezing or surface water

2.5.3 Risk management

Risk management can be defined as:

“The process of identifying significant risks to achieve an authority’s strategic and operational objectives, evaluating the potential consequences and determining and implementing the most effective way of controlling and monitoring them”

Risk management is an essential tool for asset management and is a requirement of the CoP (Code of Practice). It informs the development of safety inspection regimes contributes to the establishment of levels of service and determines priorities, hierarchies, programmes and procurement strategies.

In relation to highway inspections, risk management principles can be applied to:

1. Determine the frequency of inspections for particular sections of road, footway and cycletrack.
2. Determine the guidance for inspectors set out in this document as to investigation levels for defects in particular circumstances.
3. Determine whether defects and incidents encountered during inspections present a risk to users of the roads or to the integrity and future performance of the road
4. Determine an appropriate response to a defect or incident.

2.6 Highway Safety Inspections

2.6.1 Introduction

Safety inspections are carried out at regular frequencies that vary in accordance with the level of use and importance of the road or footway. They are designed to identify all defects likely to create danger or serious inconvenience to users of the network or the wider community. The risk of danger is assessed on site and an appropriate priority response identified.

Caerphilly County Borough Council has set its own standards for the frequency of its highway safety inspections. These take into account National guidelines for the definition of highway type, hierarchy and inspection frequencies issued in the latest Code of Practice for maintenance management, 'Well Maintained Highways (2009)'.

2.6.2 Inspection mode

Driven inspections should always be undertaken by two people in a slow moving vehicle in both directions, with one person driving and the other carrying out the inspection. The driver does not actively record defects as they are expected to manoeuvre the vehicle on a safe passage.

The vehicle used for the driven inspection has to be equipped with a roof mounted high intensity beacon, reflective markings and a first aid kit. Traffic sensitive routes should be inspected outside of the main peak flow periods.

Walked inspections are undertaken alone. If the section of network being assessed only has a footway on one side then the inspector is able to survey both the footway and carriageway simultaneously. If there is a footway on either side of the carriageway then an inspection has to be undertaken in both directions.

Cycled inspections of the cycle network can be inspected individually and undertaken on a bicycle that will be provided by Caerphilly Council. Cycleways that form part of the highway will be inspected as part of the scheduled highway inspection.

2.6.3 Inspection Coverage

The following is an example of items that should be given due consideration whilst undertaking a routine highway inspection:

- Debris, spillage or other contamination on pavement surfaces
- Overhead Wires that are damaged or low
- Displaced road studs
- Defective street furniture (lights, benches, bollards etc)
- Unstable embankments or cutting
- Overhanging vegetation both in the footway and carriageway
- Standing or discharging water
- Damaged safety fencing, parapet fencing or pedestrian guardrail
- NRSWA (New Roads and Street Works Act 1991) defects (utility apparatus etc.)
- Dirty or obscured traffic signs
- Trees with lose limbs or that appear unstable
- Unauthorised signs
- Abrupt level difference in running surface
- Potholes, cracks or gaps in the running surface
- Loss of skid resistance on network (SRV)
- Broken or displaced kerbs
- Blocked drains
- Damaged or missing ironwork (gullies, manhole covers etc)

(This list is not comprehensive, it is just an illustration)

If there is any uncertainty over any potential hazard then the Highways Inspector should seek guidance from their line manager. The overriding issue is to ensure the safe passage of highway users.

2.6.4 Frequencies

Frequencies for safety inspections of individual network sections are based upon a consideration of the category within the road, footway or cycle track network hierarchy. The default inspection frequencies are set out in table 10, and a full inventory of all Caerphilly County Borough Council including intended inspection frequency can be referred to in Appendix G.

A review of hierarchies and inspection frequencies will take place on an annual basis to assess whether changes are required and whether an inspection frequency in excess of that determined by the road, footway and cycle route would be more appropriate. Such enhancements (on a temporary

or permanent basis) will be based upon an assessment of risk, taking into account:

- Traffic use, characteristics and trends (for example, if future levels of traffic significantly higher than that suggested by the hierarchy are likely to occur on a section, perhaps as the result of development works);
- Incident and inspection history (for example, if a section has exceptional levels of accidents [See Appendix C] or repeated occurrences of defects);
- Characteristics of adjoining network elements (for example, where a section joins a trunk road);
- Wider policy or operational considerations.

Where there is uncertainty about the category to be applied an on-site 'reality check' will be undertaken, and inspectors will report any instances where, having carried out an inspection it would be appropriate to carry out inspections more frequently.

2.6.5 Inspection programme

The inspection programme is arranged in such a way as to distribute the anticipated defect repair workload evenly across the County. Concentration of inspections in any single area are avoided to eliminate large amounts of work falling on single areas, with the consequent risk of repair response times being exceeded

It is important that the inspection frequency regime is adhered to.
The Section 58 defence is highly dependant on regular inspections and every effort must be made to keep to the programme. In the event that the inspection frequency is not maintained, then efforts must be made to ensure that the inspection regime of streets in the higher part of the hierarchy are protected as these streets by definition, present a greater risk to the public and thus expose the Council to greater risk from claims.

2.6.6 Response times

Each defect has a specific response time associated with it, depending on the degree of deficiency. The response times are as follows:

Table 12 Response times

Priority	Response
Priority 1	2 Hours
Priority 2	24 Hour Response
Priority 3	28 Day Response

Where defects with potentially serious consequences for network safety are made safe by means of temporary signing or repair, arrangements should be

made for a special inspection regime to ensure the continued integrity of the signing or repair is maintained, until a permanent repair is made.

2.6.7 Follow-up action

There will be certain defects, that upon being made safe, will require the Highways Inspector to notify other engineering personnel within Street lighting, Dangerous structures, NRSWA etc. It is they who will then decide upon the appropriate course of action. The standard response time is shown as 28 days although in practice the prioritisation of remedial works will be determined by the individual Highway Engineer, Street Works Inspector or Street Lighting Engineer as necessary.

2.6.8 Record keeping and data management

Where a defect has been 'made safe', by coning, temporary reinstatement etc., then it is important that the follow-up permanent repair is initiated and included in the recording system.

2.7 Service Inspections (planned maintenance)

2.7.1 Introduction

The service inspection regime is designed to ensure that the network meets the needs of the users by providing more detailed inspections of particular highway elements to ensure that they meet the requirements for serviceability.

Service Inspections comprise of a more detailed inspection, tailored to identify issues that may have an effect on the reliability, comfort or quality.

These inspections are undertaken in conjunction with safety inspections and follow the same frequency.

2.7.2 Inspection Frequencies

Refer to ‘safety Inspection’ frequency table (Table 10)

2.7.3 Changes to inspection frequencies

Service Inspection frequencies are to be reviewed annually.

2.7.4 Inspection Programme

The Inspection programme has been developed utilising CCBC core maintenance policies that address maintenance and historical approved codes of practice. Regular meeting are convened to review the core data sets for all policies and procedures, to ensure a consistent and thorough approach to highway inspections.

In addition to the safety inspections, several modes of inspection are used to provide reports on the sustainability, serviceability and existing condition of the Highway network, such as

- SCRIMM
- YOTTA
- Condition Surveys

Condition surveys are undertaken in-line with the safety inspection and their primary function is to identify deficiencies within the highway infrastructure.

2.7.5 Items for inspection

Service inspections should incorporate the elements of safety inspections as detailed above and supplemented by requirements for serviceability. The range of inspection types to be carried out can be seen in *Table 9 Summary of inspection types and procedures (page 23).*

2.7.6 Response times

All defects identified during the Service Inspections, that are not deemed Safety Defects, should be incorporated within a Planned Maintenance Programme with priorities assessed by reference to approved standards, relative priorities and available budget, and priorities should conform to the policies and objectives specified in the Caerphilly Maintenance Plan.

2.7.7 Follow-up action

Certain defects will require notification to highways or street lighting personnel who will then decide upon the appropriate course of action. The standard response time is shown as 21 days, although in practice the prioritisation of remedial works will be determined by the individual Highway Inspector, Street Works Inspector or Street Lighting Engineer as necessary. It is intended that client staff, which are responsible for downloading defects from the Exor/Mayrise system, carry out this notification.

2.7.8 Record keeping and data management

If an inspector has undertaken some temporary action during a Service Inspection then it is important that the follow-up permanent repair is initiated and included in the recording system.

2.7.9 Inspections for network integrity

Inspections for network integrity are to be undertaken at a frequency of 12 months as these relate to operational efficiency rather than the individual

elements of the network, although they routinely coincide with the Safety Inspection frequency for CCBC highway network.

Typical items that reflect operational efficiency include:

- Traffic signs or markings may be poorly sited or the legend may be either incorrect, confusing or not reflect current priorities
- Traffic signs or markings may be obsolete or redundant and affect street clutter
- Facilities for walking, cycling or public transport might be discontinuous or poorly defined and opportunities for installation of dropped kerbs or textured paving should be taken
- Opportunities might be taken to modify layout as part of future maintenance schemes.

2.7.10 Inspections for regulatory purposes

In addition to the maintenance of the highway infrastructure, the highway maintenance service also comprises regulation and enforcement activities. The most significant of these involves responsibilities and requirements under the New Road and Street Works Act (NRSWA) 1991. These provisions together with the associated Codes of Practice and Standards are not covered in this manual.

Other important regulatory duties include (list is not exhaustive):

- Dealing with encroachment on the highway
- Dealing with illegal and unauthorised signs
- Licensing skips, hoardings, temporary closures and other authorised occupation of the highway
- Enabling the enforcement of street parking regulations

2.8 Inspection Method

2.8.1 Safety Inspection

These are designed to identify al defects that could potentially create danger or serious inconvenience to users of the network. The risk of danger is assessed on site and the defect is then categorised for the appropriate response.

2.8.2 Service Inspection

Service inspections are a more thorough inspection, which are tailored to the requirements of a particular highway related element. This allows an informed decision to be made regarding the serviceability of that section.

Service inspections fall into two categories; Network Integrity and Regulatory. Network Integrity inspections focus on Street lighting and road markings, whereas the Regulatory Inspections are aimed at:

- New Developments - Section 38 of the Highways act 1980
  Inspections of these sites are subject to Section 38 adoption agreements (Highway Planning) and typically take place from inception to completion as well as prior to adoption. Highway inspectors routinely concentrate on the pre adoption inspection.
- New Roads and Street Works Act (NRSWA)

In addition information recorded, forms an integral part of the HAMP (Highway Asset Management Plan) for the authority when creating an inventory

2.8.3 Condition Assessment

Condition surveys are intended to identify deficiencies within the highway infrastructure which, if untreated, are likely to adversely affect its longevity and levels of serviceability.

The surveys provide information on the mode and severity of deterioration, which is used to determine the appropriate maintenance treatments.

Specialist equipment and other forms of survey will be utilised to measure the condition of the highway asset in order to provide assessments on overall performance, KPI's (Key Performance Indicators), maintenance requirements and to form part of the HAMP**.**

2.8.4 Training and Development of inspectors

In accordance with Caerphilly CBC policies and guidelines all Inspectors are assessed via a 'performance development review', which is undertaken

annually. The review is conducted between the Inspector and nominated line manager, with the intention of meeting the following objectives:

- Identifying training needs
- Assisting the individual to self appraise and set targets
- Provides a platform for the Inspectors to feed back to the line manager regarding any concerns or queries that they may have

Safety inspections are to be undertaken through a risk assessment procedure. Consequently the training of all highway inspection personnel in the risk management regime is an essential pre-requisite before such inspections can be undertaken.

Under the provisions of the Health and Safety at Work Act (1974) and Construction Design and Management Regulations (2015), it is important that all operatives undertake comprehensive Site Safety training specific to their duties.

A vital component of inspections is to ensure that inspectors are able to undertake their duties consistently, accurately and within the current guidelines and standards. The County Borough Council offers training for inspectors on a regular basis and will ensure appropriate refresher courses are also offered.
The training will include coverage of the following areas, but may also include other subjects when appropriate:

- Inspector training and accreditation
- Site Safety Training
- Lone working briefing
- Dynamic Risk assessment training
- Induction and briefing
- Introduction to risk management
- Workshops on risk assessments
- Insurance requirements for third party claims

It is the aim of Caerphilly CBC that all inspectors will be trained in accordance with City and Guilds scheme 6033 where reasonably practicable.

2.8.5 Safe working practices

All Inspectors are trained to carryout dynamic risk assessments whilst undertaking safety inspections. This empowers the Inspector to assess their environment and act accordingly. At no point in time should the inspector act in a manner that may affect their wellbeing or the welfare of others.

Information on both the Dynamic RA and lone-working policy can be located at Highways Operations Group offices.

2.8.6 Data Management

The Exor/Mayrise system makes provision for recording service requests, complaints, reports or information from users and other third parties. These may require immediate action, special inspection, or influence future inspection or monitoring arrangements (refer to Appendix A for further details).
All information obtained from inspections, together with the nature of any response made by the inspector, including nil returns, is recorded.

2.9 Inspection Procedures

2.9.1 Data Capture

All defects that meet intervention levels are to be recorded whilst on site and retained for auditing purposes. All information will be retained within Exor/Mayrise.

CCBC are currently in the process of evaluating remote hand held devices to enable the inspectors to capture and store defect information whilst on site.

2.9.2 Section Information

At the start of each section the following data must be recorded.

Table 17 Section Information Data

Section Information data	Description
Agent/Link Identifier	*10 character alphanumeric character combination of the district code the road number and the link number.*
Section Number	*the numeric section number (0-99)*
Section Description	*Up to 80 alphanumeric characters*
Reverse Direction	*Is the inspection to be carried out in the reverse direction? (Y/N)*
Inspector/s	*Inspector's initials, up to 3 alphanumeric characters. If two inspectors carry out an inspection, then both of the initials should be entered.*
Inspection Type	*Type of inspection. Safety will automatically be recorded*
Initiation	*NRW (normal walking), NRD (normal driven)*
Weather	*Fine, Rain, Snow or Fog*
Road Condition	*Dry, Wet, Snow or Ice*
Activity List	*SI will be entered automatically*

2.9.2 Defect Details

Table 18 Defect Details

Activity code	*2 alphanumeric characters as listed as listed elsewhere in this code, to describe what is being inspected*
Cross Sectional Position (refer to table X below)	*location of the defect across the highway is defined using a single character code as shown below*
Chain age	*chain age measurement from start of section*
Location	*Required – a text description of the location of the defect up to 40 alphanumeric characters*
Identity code	*ID code on lighting columns signs bollards etc.*
Diagram number	*road traffic sign diagram number if required*
Inventory item code	*2 character inventory item code*
Modifiable code	*Modifiable code list, including the client's highway maintenance, street works and street lighting sections*
Special instructions	*Special instructions free text, up to 255 characters*

Defects	*4 alphanumeric character defect code as listed elsewhere*
Attribute	*The defect attributes to be recorded if any e.g. depth/height length, area or number (0-999).*
Response	*Defect priority 1 2 3 as listed elsewhere*
Action	*Action recommended or taken by the inspector*
Treatment code	*To indicate relevant treatments for the repair of defects*
Record action	*A 40 character action text to fully describe the repairs recommended for the defects found*
Date and Time	*Are automatically recorded from the DCD calendar/clock*
Comments	*240 character free text – notebook type entry*

2.9.3 Sections with no identified defects

Sections that have been inspected but have no defects must be recorded as such electronically.

2.9.4 Locations of defects

In addition to recording the location of the defect in terms of section chainage and cross sectional position the inspector must also record a text based description such as outside No 32 or adjacent to lamp column No 7. Alternatively a distance measurement can be given from a junction of significant landmark. All defects are marked in highly visible yellow paint.

2.9.5 Activity codes

A code is used to record the defective asset. These are as follows:

Defect Code	Defect Type Description
BE	
BO	
CCSC	**C/W Spalling/Cracking (Concrete)**
CCVS	**C/W Vertical Step at Joint (Concrete)**
CEDT	**C/W Edge Deterioration**
CMCR	**C/W Major Cracking/Loss of Material**
COTH	**C/W Other**
CPOT	**C/W Pothole/Loss of Material**
CSTW	**C/W Standing Water / Seepage**
CTRF	**C/W Trench Failure**
CUNE	**C/W Uneven Surface**
CWTR	**C/W Wheel Track Rutting**
DBLK	**Gully / MH / Catchpit silted**
DCBK	**Culvert inlet / outlet blockage**
DCMS	**Missing cover / manhole / gully etc**
DDIF	**High / Low Cover / MH / Gully etc.**
DDSD	**Drainage ditch silted**

DDUS	**Damaged / US Cover / Grating**
DOTH	**Drainage: Other**
FBCR	**Corroded/Rotten Post**
FBDM	**Damaged Fencing/Guardrail/Barrier**
FBMS	**Missing Fencing/Guardrail/Barrier**
FBOL	
FBOT	**Fencing: Other**
FCRK	**F/W Cracked Flag / Slab or Block**
FMIS	**F/W Missing Flagstone/Slab/Blockwork**
FOTH	**F/W Other**
FPOT	**F/W Pothole / Loss of Material**
FROC	**F/W Uneven or Rocking Flag/Slab/Block**
FSTP	
FSTW	**F/W Standing water / Seepage**
FTFL	**F/W Trench Failure**
FUNE	**F/W Uneven Surface > 20mm**
IGUL	
IS	
KDAM	**KBS/EGS/CH Damaged**
KLOR	**KBS/EGS/CH Loose / Rocking**
KMIS	**KBS/EGS/CH Missing**
KOTH	**KBS/EGS/CH Other**
KPRO	**KBS/EGS/CH Projection > 20mm**
NRSW	**Statutory Undertakers Defect**
RMMS	
RMOT	**RD MARKS Other**
RMWR	**RD MARKS Wear**
RSDM	
RSOT	
TALN	**Sign/snp misalignment**
TDAM	**Sign / Street name plate damaged / US**
TDRT	**Dirty/graffitti to sign/snp**
TMIS	**TR SIGN/SNP Missing**
TOTH	**TR SIGN/SNP Other**
TPOS	**TR SIGN/SNP Defective post**
TVEG	**Sign/snp obscurred by vegetation**
WCMA	
WCRC	**Reconstruct carriageway**
WCRS	**Resurface carriageway**
WCRT	**Request for carriageway re-tread**
WCSD	**Request for carriageway surface dressing**
WFRC	**Reconstruct footway**
WFRS	**Request for footway resurfacing**

2.9.6 Formal Notifications

Whilst undertaking the safety inspection an officer may detect a no. of highway related discrepancies that require additional action. Instances of such normally require the inspector to formally serve notice on a person/ homeowner or business for performing an illegal highway activity that contravenes the 'Highways Act 1980'.

The following are an example (not exhaustive) of formal highway notifications to be used as the highway custodian to ensure safe passage for members of the public and can be found in the appendices;

SECTION 154	TREES/HEDGES/ OVERHANGING THE PUBLIC HIGHWAY
SECTIONS 143 & 149	OBSTRUCTION OF THE HIGHWAY
SECTION 184	CONSTRUCTION OF VEHICULAR CROSSING
SECTION 184	ILLEGAL CROSSING OF THE HIGHWAY
SECTIONS 148 & 149	DEPOSIT OF MUD/REFUSE/EFFLUENT/MATERIAL ON COUNTY HIGHWAY
SECTION 180	DEFECTIVE CELLAR COVERING IN FOOTWAY
SECTION 163	WATER FLOWING ONTO THE HIGHWAY
SECTION 165	REPAIR OF WALL IN YOUR OWNERSHIP

2.9.7 Coding response times

The inspector is to code the response times in accordance with the risk assessed Priorities Section 2.5.2

2.9.8 Material

The inspector should make every effort to describe the material in which the defect occurs. If the pavement is of blacktop material and the inspector is not sure of the exact type then he should record it as blacktop. If unsure of the material specification seek guidance from your line manager.

2.9.9 Measuring flags, small element paving and blocks

Precast concrete paving can be found in a variety of styles and sizes, therefore an on site measurement and photograph would be beneficial. This should ensure that the correct specification of paving is being replaced

2.9.10 Programming and works

All instructed works are programmed to be completed within the agreed timescales in accordance with the defect priority categorisation 1–3 (ref to table 12).

2.9.11 Remedial works

Remedial works may be instructed if a defect has failed or been completed to an unsatisfactory standard. This should be recorded in the first instance on your inspection records and escalated to your line manager so a prompt or satisfactory outcome is obtained.

2.9.12 Procedure following inspection

Refer to the flow chart, Figure 3.

2.9.13 The client and works contractor's responsibility

Highway Operations Group undertake all repairs in a safe and timely manner within the specified target date range. During the periods where external contractors supplement our activities, they adhere to the agreed contract details and best working practices.

2.9.14 Statutory undertaker apparatus

All defects should be reported to the NRSWA personnel, which in turn report the defect to the relevant statutory body under section 81 of the 'New Roads & Streetworks Act 1991'.

The Highway Authority has a duty to inspect statutory undertakers works at 3 stages

- During Excavation
- 6 months post completion
- 3 months preceding the end of the maintenance period

If remedial action is not carried out within a specified timeframe then the Highway Authority may take it upon themselves to repair the defective apparatus and recharge the owner.

2.9.15 Normal working hours

During normal working hours the main point of contact for emergencies is the Customer First department Contact Number: 01495 866533
The core working hours for staff in the Operations Section who are the main point of contact are:
8 a.m. to 5 p.m. Monday to Thursday inclusive and 8 a.m. to 4.30 p.m. on Fridays.

2.9.16 Outside normal working hours

The Out of Hours contact number for the Authority as a whole is 01443 875500.

Outside normal office hours from Monday to Friday and for 24 hours a day on weekends and bank holidays the County Borough Council operates a client side 'standby' system. The 'standby' system has been designed to enable direct contact to be made with a County Borough Council officer at any time outside normal working hours in order to deal with any highway emergency. The 'standby' system is operated using a rota for duty officer service. Staff availability during statutory holiday periods is planned and the information circulated to senior management.

The Out of Hours (Duty Officer) Manual contains details of the procedure for the order of call outs that duty officers should follow (Appendix J)

2.9.17 Emergency Situation Reporting

During periods when road conditions (significant/ inclement weather.) are affecting the free and safe passage of vehicles and pedestrians, emergency situation reports are prepared and distributed.

Incidents that require reporting will generally relate to road closures and flooding of property but other significant incidents will also need to be reported. There is a need to be particularly sensitive/alert to media interest in such situations, particularly if serious injury or fatalities have occurred. Situation reports are intended to be brief, accurate and additional information should be provided as necessary whilst the emergency conditions prevail. Out of hours reports should be made directly to the appropriate level of management (and escalated in due course) Customer Services Manager/Operations Engineer by telephone and email. In instances where land lines and email are inoperative mobile phones are to be used for communication. The procedure for emergency situation reporting is as described below. Observance of this formalised procedure will ensure that information is precisely relayed to those people and organisations that require it in a timely fashion and minimises multiple requests for such information.

The Highway Operation Group manager or designated representative is the designated person for gathering the information in order that a single clear point of contact is available for other departments and organisations that need to use such information. Operations personnel may assist in gathering information where appropriate.

A report should be compiled by the Highway Operations Group manager or designated representative and sent via email to the following personnel:

- CEO and Communications manager
- Director of Technical Services
- Chief Engineer

- Principal Traffic Engineer
- Street Lighting Manager
- Customer Care Officer
- Public Relations Officer
- Emergency Planning Officer

And any other relevant, or affected parties.

Please refer to the ‘Out of Hours Manual’ for a more detailed plan of dealing with emergency situations outside of normal working hours.