Newport City Council

Highway Maintenance Manual

2022

Document Control

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Council Approval

Version Number	Council Committee	Date
1.0	Newport City Council Committee	April 2022

Responsibility for the Manual

The responsibility for the delivery of and updating of this plan are shown below

Council Officer	Responsible for
Highways & Engineering Service Manager	Ensuring compliance with the manual and updating of the manual

1 Introduction

Purpose

This manual documents how Newport City Council manages highway maintenance. It records how the council meet its duties as the highway authority and the methods used to manage risk to users.

Scope

The manual describes how the council undertakes maintenance activities on the city's road network. It set outs the procedures used to maintain highway infrastructure, including carraigeways, footways, structures, street lights, traffic signals and associated street furniture.

Legal Requirements

As the Highway Authority the council has a duty to meet the requirements of the following legislation:

- **The Highways Act 1980:** This places a duty upon the council to maintain highways, adopted as maintainable at public expense, and to keep them safe for public use
- **New Roads and Street Works Act 1991:** This places a duty upon the council to co-ordinate all works in the highway for the purposes of ensuring safety, minimising inconvenience to highway users, and protecting the highway and apparatus in it.
- **The Traffic Management Act 2004:** This places a duty on the council to ensure the expeditious movement of traffic on their road network and networks of surrounding authorities.

This manual summarises how the councils aims to meet these requirements. Section from these act that are particularly pertinent to this manual are reproduced in Appendix F of this manual.

National Guidance

This manual has been prepared taking into account relevant national guidance specifically:

- "Well-Managed Highway Infrastructure: A Code of Practice, UK Roads Liaison Group, 2016"
- "Risk Based Approach: Method", 2018, CSSW, 2019
- "Highway Inspection Defect Recording Manual", CSSW, 2019

Related Plans and Documents

This manual is part of a suite of documents that support the councils approach to managing the highway asset. These include; Highway Asset Management Plan, Highway Data Management Plan and Annual Status and Options Reports.

2 Roles, Responsibilities and Competencies

The roles, responsibilities and competencies required of those involved in managing the maintenance of the council's highway assets are defined below.

Roles and Responsibilities

Role	Responsibility
Cabinet Member	Approval of this document as council policy.
Head of Service City Services	Ensuring the implementation of the policy and standards contain in this manual, monitor the results and reviewing the results of the annual risk assessment update.
Service Manager Highways and Engineering	Advice Develop the policy and standards to be used, ensure their effective implementation, monitor the results and undertake an annual risk assessment update.
Team Manager Highways	Manage the implementation and monitor the results of the policies and standards contained within this manual
Highway Inspectors	Carry out inspections as per the inspection regime, recording the appropriate data for input into the AM system.

Competencies and Training

The CSSW HAMP Project are currently working on a suite of competency and training requirements to meet the 2016 Code of Practice recommendations. When this guidance is available this section of the manual will be updated with how the council is implementing it .

3 Risk Management

The code of practice for highways recommends that council adopt a "risk-based" approach to the maintenance of highways. The council has adopted this recommendation and related guidance provided by CSSWales. The risks associated with maintaining the highway are managed as described below.

Code of Practice

The Code of Practice (the code) for Highways "Well Managed Highway Infrastructure", October 2016 provides guidance for councils to follow that they may rely upon when defending against third party claims. The code recommends that councils adopt a risk based approach for all aspects of highway infrastructure maintenance, including setting levels of service, inspections, responses, resilience, priorities and programmes.

CSSWales Guidance

CSSW developed a nationally conistent response to the code that it recommendeds authorities use. The method includes guidance on the development of network hierarchies and inspection and repair regimes. It also provides national minimum standards for inspection and defect repair. The details of the asset hierarchy, inspection and repair regimes adopted by the council and where they differ from (exceed) the CSSW recommended minimum standards is detailed later in this document.

Risk Review

To ensure the the effectiveness of the chosen regimes a review of risk is carried out every 2 years using the method detailed in the "CSSW Highways Asset Management Framework Recommended Practices - Task 4 Performance & Risk Review". The results are recorded in the "4RA Risk Assessment – Spreadsheet" and reported to City Services Head of Service.

4 Asset Register and Inventory

The asset register defines the roads that belong to and are maintained by the council. An inventory of the highway assets is maintained recording the details required to manage the asset.

Asset Register

The definitive record of the roads that are the councils responsibility including the full list of adopted streets is located on the street gazeteer held in Mayrise (Mayrise is one of the council's highway asset management systems)

Inventory

A data assessment spreadsheet is maintained. The spreadsheet records the specific inventory items held for each highway asset.

The quality of the inventory details held is recorded on the data assessment spreadsheet and reported in the Highway Data Management Plan along with any plans put in place for data improvement.

Highway Asset Management System (Software/Databases)

The inventory records are held Mayrise, the council's highway asset management system for inspectors

Data and System Improvement

The quality of the inventory data held is reviewed annually and recorded on the data assessment spreadsheet. A plan for improvements to data and the highway asset management system will be recorded in an improvement plan section contained within a Highway Data Management Plan.

5 Customer Contact

When road users and residents contact the council about the highway the procedures summarised below are used. They are designed to ensure that suitable actions are taken and that there is an appropriate response to the contact.

The council use the following methods to manage customer contacts relating to the highway service

Customer Relationship Management System

Highway related customer contacts are recorded in the council's Customer Relationship Management System . All customer contacts are acted upon as per the council's standard procedures and timescales. The Service Manager receives an annual report from the CRM team detailing the number of customer contacts and a breakdown of the type of contact (complaint/request), the asset to which it refers and the specific details of the reason for the contact. The Service Manager reviews the information and includes details of this customer feedback in the Annual Status and Options Report (ASOR).

Scheme Notification and Feedback

For all major works undertaken on the highway the highway service provide a pre-works notification to any properties that may be affected by the works asking for information regarding any specific problems that may be encountered, to enable these to be mitigated prior to and during the works.

Following completion of the works the affected properties are asked to complete a questionnaire in regard to the undertaking of works and any problems that occurred. The results of these questionnaires are reviewed by the works manager and used to identify where improvements can be made to how the works are undertaken in future.

Compliments, Concerns or Complaints

Newport City Council will deal with any compliments, concerns or complaints you may have about the services provided, by following the link below:

https://www.newport.gov.uk/en/Council-Democracy/Complaints--Compliments.aspx

6 Utility Activity

The condition the highway can be affected by third party works. The management of these activities is governed by the New Roads and Street Works Act (NRSWA) 1991. The council complies with its duties under this act is set out below.

Street Works

All utility activity undertaken on the council's highway network is co-ordinated by the Street Works Team and recorded within the Mayrise Streetworks System. The Street Works Team ensure that all statutory undertakers comply with the New Roads and Street Works Act (NRSWA) 1991 and all amendments as notified in the Traffic Management Act 2004, to ensure that all works undertaken on the highway are completed to the required standards and are programmed to achieve the least disruption to members of the public.

Procedures

The detailed procedures are used for undertaking this work including procedures for;

- **street works licenses;** Utilities have statutory powers enabling them to 'install apparatus' under a public highway, except when the highway is a special road, such as a motorway, as specified under the Highways Act 1980. Other persons or organisations wanting to install or maintain apparatus under a public highway will require a Section 50 agreement (Street Works License) issued by the authority
- **street works register;** the register kept by the council that records where and when utilities are working on the highway
- **notices of works;** the notices that have to be issued prior to works commencing, that should be issued by the organisation that is carrying out the works (which may be the council)
- **restrictions on works**; preventing works being carried out on roads that have been recently resurfaced for a period of time after completion of those works
- **co-ordination of works;** coordinating works in an appropriate sequence and at appropriate intervals where more than one organisation needs to work on the same street
- **designation of protected streets,** where the council can assign a protection on specific streets being used by utilities
- **standards of re-instatement**; the councils specification for what the standards of reinstatement should be on categories of road including materials and depths etc.
- **apparatus affected by highway works:** where the council notifies utilities where road works are planned to ensure that provision is made for the protection or diversion of the existing utility apparatus

Copies of the procedures used can be made available on request.

Ultility works have a significant effect upon the conditon of the highway and the users perception of it. In the future ASOR reporting will reference the number of openings made and the standards of reinstatement being achieved such that a true picture of condition and its causes are known.

7 Third Party Claims

Third party claims are made against the council when members of the public believe that negligence on the part of the council, has resulted in injury or property damage.

Processing 3rd Party Claims

The details of the third party claim handling process can be found by emailing ncc.claims@newport.gov.uk.

Review of Claims

The Highways & Engineering Service Manager receives an annual report from the Insurance team. The report details:

- the number of claims
- a breakdown of the type of claim (personal injury/property damage),
- the asset to which it refers,
- the specific details of the claim and
- whether the claim was successful or repudiated.

Reporting Claims Outcomes

The Highways & Engineering Service Manager reviews the information and includes a summary of the claims data in the ASORs.

8 Traffic Management

The council as local traffic authority has a duty to manage the road network to secure the expeditious movement of traffic on the network and facilitate the same on road networks for which another authority is the traffic authority. The duties are set out in the Traffic Management Act 2004 and the arrangements that the council has in place to meet these duties is detailed below.

Traffic Manager

The council has appointed a “traffic manager” to perform such tasks as the authority consider will assist them to perform their network management duty. – The Traffic Manager for NCC is the Streetworks Manager.

Traffic Disruption

The council has in place processes for ensuring that the authority identifies cause, or potential to causes of road congestion or other disruption and takes action in response to (or in anticipation of) anything so identified.

Policies and Objectives

The council has determined specific policies or objectives in relation to different roads or classes of road in their road network and have procedures in place to monitor the effectiveness of their decision-making processes and the implementation of their decisions and assess their performance in managing their road network.

Traffic Sensitive Streets

The city contains a number of streets that that due to the amount or make up of traffic that use them have been designated as traffic sensitive and have working time restrictions placed upon them. The list of traffic sensitive streets is contained in Appendix G.

9 Network Hierarchy

The highway assets have been divided into network hierarchy categories that reflect use and function. This enables the inspection and repair regimes to be related to their associated risk.

Establishing the Network Hierarchy

Network hierarchies have been derived in accordance with the the Code of Practice "Well-Managed Highway Infrastructure: A Code of Practice, UK Roads Liaison Group, 2016" and CSSW's "Risk Based Approach: Method". Details of how the hierarchies were derived is held in the spreadsheet "4RA Highway Asset Risk Review 2018". The formal record of the hierarchy for each asset is held within a excel spreadsheet "network hierarchy" O: Drive one the councils internal network.

Network Hierarchy Categories

Details of the hierarchies used for each asset group can be found in Appendix A. The details of the hierarchy allocated to each individual asset are held in the council's Mayrise asset management systems.

Regional Consistency

To achieve regional consistency consultation has be undertaken with neighbouring authorities, to enable consistent hierarchies to be allocated to assets which cross boundaries. The asset hierarchies between the council and the neighbouring authorities are listed in appendix A. Any differences have been recognised and documented.

Update and Review

The hierarchies are reviewed on an ongoing basis where changes to the asset occur and or significant changes in use happen (e.g. signficant changes in traffic volume). As a minimum the hierarchy is reviewed and confirmed every 2 years. Records of the reviews will be held in the form of updated versions of "Newport City Council 4RA Highway Asset Risk Review". Any resultant recommended changes to the hierarchy will be proposed to council and their approval recorded.

10 Inspection Regime

In order to monitor the condition and repair needs of the asset the council deploys a regime of inspections of varying types and frequencies.

Types of Inspection

The council undertakes the following inspections:

1. **Reactive Inspections:** inspections undertaken in response to the notification of potential defects by other council employees, members of the public, emergency services etc.
2. **Routine Inspections:** A regime of planned inspections designed to identify defects that have the potential to cause harm to users and defects that require repair in order to prevent escalation of deterioration and increased (avoidable) maintenance needs.
3. **Condition Surveys:** A regime of condition surveys that record the condition of components of the asset such that a programme of renewal/replacements can be derived. Condition surveys are visual or machine based and include testing where such is appropriate for the asset type.

Planned routine inspections are a combination of:

- **Driven Inspections**: inspections of the carriageway undertaken with a driver and a Highway Inspector, carried out from a slow-moving vehicle at a speed appropriate to the road conditions.
- **Walked Inspections:** inspections undertaken by a Highway Inspector on foot at a walking pace on the footway, where the footway and carriageway are assessed.

Inspection Frequencies

Reactive Inspections

Where a “safety” defect is notified to the council by a third party an inspection of the defect will take place within 24 Hours of the information being passed to the department, action will be taken as per the council’s repair regime. (See repair regime for details of safety defect criteria).

Where a “maintenance” defect is notified to the council by a third party an inspection of the defect will take place within 7 Days of the information being passed to the department and action will be taken as per the Council’s repair regime. (See repair regime for details of maintenance defect criteria).

Routine Inspection Frequencies

Routine Inspection frequency is based on the Network Hierarchy and is determined using the CSSW Highway Asset Risk Review Method. It is reviewed every 2 years. The frequency of routine inspections is shown in Appendix B along with the CSSW minimum recommended standards.

Inspection Tolerance

Due to the effect of adverse weather and to allow for sickness or leave it is possible that the specified frequencies cannot be met in some circumstances. To allow for such circumstance a tolerance in frequency of inspections is permitted as shown in Appendix B. Any changes to the frequencies must be approved by the Highways & Engineering Service Manager before they are implemented.

Inspection Schedule

Inspection routes in compliance with the regime above are held in Mayrise, This software is the council's asset management system. The system Mayrise contains details of the inspection regimes, the inspections undertaken and the date of the next scheduled inspection. Inspections to be undertaken are provided to the inspectors at the beginning of each week. The use and character of a road is considered when scheduling inspections, for example to avoid periods with higher numbers of parked vehicles. Best endeavours will be made to ensure that the timing of the inspection enables defects to be identified effectively.

Inspected Assets

The assets inspected during the routine inspection include (but are not limited to) the following:

- Carriageways
- Footway and cycleway
- Covers, Gratings & Frames (including Statutory Undertakers apparatus)
- Kerbs, Edgings and Channels
- Drainage
- Guardrails, Fencing and Restraint Systems
- Verge, Trees and Hedges
- Road Studs and Markings
- Signage
- Street Lighting,
- Traffic Systems, Controlled Crossings, Illuminated Bollards and Cabinets
- Cleanliness and Weed Growth

NB: PROW are inspected and maintained by Countryside and Conservation Teams.

Recording of Inspection Records

Records of the inspection and the resulting observations are recorded as the inspection is undertaken using a hand-held electronic device and directly loaded into the council's Mayrise asset management system.

Arboriculture

The Highway inpector will carry out a general inspection according to the assset heirarchy and report any arboriculture issues back to the arboriculture team for further investigation.

The arboriculture team will also inspect all adopted trees over an eighteen month period. Arboricultural pracitce is published by numerous sources of informaiton such as,The National Tree Safety Group; Common Sense Risk

Management of Trees, Occupiers Act, Case study and NCC Tree Policy.

The authority will also serve notice of an action if required. The serving of notice will be used to mitigate any danger from private land, to the highway, as identified by the authority. This regulation complies with highways Act 1980 under section 154 and Tort Law.

Condition Assessments

NCC undertake the following condition assessments on their highway assets. The frequency of the assessments are detailed in Appendix B.

Carriageways

i. SCANNER (Surface Condition Assessment of the National Network of Roads)

ii. SCANNER is a machine condition survey undertaken from a vehicle moving at traffic speeds. The results of the survey are held offsite by WDM and accessed via the WDM/WIP online interface.

iii. SCRIM (Sideway-force Coefficient Routine Investigation Machine)

SCRIM measures wet road skidding resistance. Data for specific roads can be found on City Services O: Drive network and the authority's asset management software, Horizon.

Footways

Visual Condition Assessment

i. Footway Network Survey (FNS)

The FNS survey is a visual assessment undertaken by Highway Inspectors on behalf of the authority. A review of the results of these surveys in conjunction with CSSW indicates that FNS surveys overstate the amount of renewal works required and are not considered a reliable indicator of measured condition. The council has discontinued the use of this form of survey as a result.

ii. CSSW recommended Footway Visual Condition Assessment Method.

The footway condition is assessed by the highway inspectors during their regular inspections using the CSSW recommended method. Resulting condition information is stored in the Mayrise database.

Winter Maintenance

For Winter Maintenance, please refer to the separate documention of the Winter Maintenance plan

Gulley Maintenance

All the authority's gulleys are inspected and cleaned annually. However those held on record as high risk, are proactively cleaned before flooding occures.

Structures

The inspections are carried out in accordance with the DMRB CS 450 Inspection of Highway Structures Revision 0 (2020) and Wales National Application Annex to CS 450 Inspection of Highway structures.

The inspections are carried out in accordance with Section 2 of CS 450:

1) Safety Inspection
2) General Inspection
3) Principal Inspection
4) Special Assessment
5) Inspection for Assessment

Inspections are carried out as Defined and at the intervals for the above inspection types as detailed in Sections 3.2 to 3.29 of CS 450. The intervals for inspections are: -

1) Safety Inspection: Safety inspections for highway structures shall be carried out to ensure the safe and efficient identification of safety related defects.

2) General Inspection: General inspections include for a visual examination of all parts of a structure which can be seen without the aid of specialist access equipment. Further investigation of structures was carried out where deemed necessary to ensure the continued safety of the structure

3) Principal Inspection: Principal inspections comprise a close examination, within touching distance, of all accessible parts of a structure.

4) Special Inspection: A special inspection provide detailed information on a particular element, part, area or defect that is causing concern, or inspection of which is beyond the requirements of the general and principal inspection regime.

5) Inspection for Assessment: An inspection for Assessment is carried out in order to provide information required in order to allow the undertaking of a structural assessment.

Frequencies for each type of inspection are detailed in Appendix B.

The results of the inspections for each asset are recorded on individual inspection pro-forma based on those recommended in the Inspection Manual for Highway structures, Volume 1: Reference Manual, Appendix G – CSS Inspection Process (May 2007 – London: TSO). The results for each type of asset are recorded on the pro forma specifically designed for each asset type, bridges, culvert, signal gantry or retaining wall. Results for subways and ramps were recorded on the bridge pro forma.

The inspections are carried out in order to identify a value for a Condition Performance Indicator (CPI) for each structure and Stock Condition Performance Indicator (SCPI) for each structure category and the whole structure stock. Calculation of the CPI and SCPI values are taken from 'Performance Measurement of Highway Structures Part B1: Condition Performance Indicator'.

For each individual asset, structure category and the whole structure stock a CPI value relating to the general condition (CPI_{Av}) and critical element condition (CPI_{crit}) are generated.

Performance Measurement of Highway Structures shows that the CPI scores range from 100 (best possible condition) to zero (worst possible condition) and can be interpreted broadly as the "percentage service potential" of a structure. Thus, a Condition PI value of 100 implies that the structure has retained 100% of its service potential; a value of 60 implies that the structure has lost 40% of its service potential; while a value of zero implies that the structure is no longer serviceable.

The CPI are banded in ranges identifying the 'likely' number and type of defects present. Interpretation of the CPI vales for individual structures is shown in Table 19 and for the stock by category and as a whole in Table 20 of Performance Measurement of Highway Structures.

Every type of Inspection involves the creation of a detailed report along with the data recorded on the form. The results of these inspections are also entered into the NCC Bridge Management System.

The condition of street lighting assets is assessed as follows:

Visual Condition Surveying

Visual condition assessment is carried out on an ad-hoc basis during maintenance visits with any obvious defects or poor condition assets being reported and actioned accordingly.

Electrical Safety

Electrical testing is carried out by an external contractor on all equipment. The results of the electrical testing are entered onto the Horizons asset management system.

Lighting Column Structural Testing

A programme of structural testing has been undertakn on all lighting columns using an external contractor. By the end of 2019 all columns have been tested and the testing regime going forward will now be dictated by the test results. The results of the structural testing provide condition rating as follows:

- Red: Programme for removal (normally within 5 days)
- Amber: Retest within 3 years
- Green: Retest within 6 years

The results of the structural testing are entered onto the authority's management system, Horizons.

11 Repair Regime

Repairs are identified via inspection or 3rd party notification. They are prioritised for repair based upon the risk that pose to users. This is undertaken as set out below.

Defect Categories

The data recorded during inspections is used to determine defect categories. Defect categories prioritise repairs using the defect response times adopted by the council and shown below.

Carriageways

Defect Categories	Description	Response Times	
		NCC	CSSW National Minimum
Critical Defect	A situation where the inspecting officer considers the risk to safety high enough to require immediate action, e.g. collapsed cellar, missing utility cover, fallen tree, unprotected opening, ➢ Requiring an immediate response to make the site safe	2 Hours#	2 Hours#
Safety Defect	Defects that pose an imminent risk of injury to road users, ➢ Requiring a response as soon as possible to remove a potential risk of injury to users	By End of Next Working Day (CHSR, CH1, CH2) 5 Days (CH3, CH4)	By End of Next Working Day (CHSR, CH1, CH2) Within 5 Working Days (CH3, CH4)
Maintenance Defect	Defects that warrant treatment to prevent them deteriorating into a safety defect prior to the next scheduled inspection, ➢ Requiring a response to prevent them becoming a safety defect	21 Days (CHSR, CH1, CH2) 21 Days (CH3, CH4)	1 month (CHSR, CH1, CH2) 3 months (CH3, CH4)
Programmed Repairs	Defects that warrant treatment, in order to prevent them deteriorating to such an extent that additional works or costs are incurred.	As per the local works programme	As per the local works programme

NCC standards are equivalent to CSSW Minimum standards except for maintenance defects on CH3 and CH4 carriageways where NCC standards exceed the CSSW minimum.

Footways

Defect Categories	Description	Response Times	
		NCC	CSSW National Minimum
Critical Defect	A situation where the inspecting officer considers the risk to safety high enough to require immediate action, e.g. collapsed cellar, missing utility cover, fallen tree, unprotected opening, ➢ Requiring an immediate response to make the site safe	2 Hours#	2 Hours#
Safety Defect	Defects that pose an imminent risk of injury to road users, ➢ Requiring a response as soon as possible to remove a potential risk of injury to users	By End of Next Working Day (FHVHU, FH1, FH2) Within 15 Working Days (FH3, FH4)	By End of Next Working Day (FHVHU, FH1, FH2) Within 15 Working Days (FH3, FH4)
Maintenance Defect	Defects that warrant treatment to prevent them deteriorating into a safety defect prior to the next scheduled inspection, ➢ Requiring a response to prevent them becoming a safety defect	21 Working Days (FHVHU, FH1, FH2) 21 Working Days (FH3, FH4)	1 month (FHVHU, FH1, FH2) No set response time (FH3, FH4)
Programmed Repairs	Defects that warrant treatment, in order to prevent them deteriorating to such an extent that additional works or costs are incurred.	As per the local works programme	As per the local works programme

NCC inspections standards are equivalent to CSSW Minimum standards except for on FH3 and FH4 hierarchy footways where NCC standards exceed the CSSW minimum.

#Critical defects should be made safe at the time of the inspection if practicable or attended by the inspector until such time as the defect can be made safe. Making safe may constitute displaying warning notices, coning or fencing off to protect the public from the defect.

Defect Types and Intervention Levels

Details of the defect types identified and the intervention levels that have been prescribed for each defect

category are provided in appendix C.

Works Ordering

Works orders are generated automatically using the council's asset management system, following the input of the inspection records.

Recording of Repair Records

On completion of the repair, the works representative record details of the type of work undertaken, the materials used and the dimensions of the repair onto the council's asset management system.

12 Highway Works Scheme Prioritisation Regime

Assets that are identified as being in need of substantial repair or replacement are included on a works programme of potential schemes. A prioritisation regime is used to identify which of the proposed

schemes should be undertaken during the following year/s.

Rolling Programme

A list of schemes to be entered onto the annual programme/s is produced to meet the standards, strategies & budgets for each asset and treatment type as detailed in the Highway Asset Management Plan (HAMP). This list contains more schemes that it is possible for fund and as such a list of reserve sites is also produced to be used if the originally selected sites cannot be undertaken due to unforseen circumstances.

Lifecycle Planning

Surveys including condition surveys will be held in the autorities asset management systems, and used for preventative maintenance in line with lifcyle planning, as endorsed by the CoP.

Scheme Prioritisation

Details of the prioritisation processes can be found in appendix D.

13 Performance Monitoring Regime

In order to ensure that the standards set out in this manual are adhered to the council operate a performance monitoring regime as set out below

Operational Performance Measures

A series of operational performance measures are used to monitor ongoing activities such inspections and routine and reactive repairs. A list of the operational performance measure along with their frequency of report and to who they are reported in include on the Mayrise System and O:Drive Network System.

The operational measures are designed to enable the service manager to take corrective action if performance has fallen below the required standards. As such the reporting of these measures is undertaken at frequencies within the year i.e. monthly, quarterly etc.

Performance Indicators

CSSW has developed a suite of performance measures designed to enable authorities to monitor the performance of their highway assets. The council has adopted the recording and reporting of these PIs in order to enable review of progress in meeting condition targets set in the asset management plan and to facilitate appropriate comparison with peer authorities.

Benchmarking

The council participates in appropriate benchmarking activities using the data recorded for appropriate OPMS and PIs. This benchmarking with be facilitated via the CSSW HAMP project. It is recognised that some of the measures are a direct result of council choice in terms of standards and targets adopted and as such comparison with other authorities may not be appropriate. There are element of performance however were understanding equivalent performance in similar authorities will enable the authority to share and learn from good practice and to implement improvements. The council actively pursues this via collaboration facilitate by CSSW and the various committees and groups that CSSW support.

Appendix A: Asset Hierarchy Categories

Carriageways		
New Category	**Previous Category**	**Description (approximate daily traffic volume)**

CHSR	Strategic	Based on local importance rather than traffic flow but often in the range >20,000 [30,000 for calculations]
CH1	Main Distributor	Travel between locations (traffic volume 10,000 - 20,000)
CH2	Secondary Distributor	Travel between locations (5,000 - 10,000)
CH3	Link Road	Travel between locations (1,000 - 5,000)
CH4	Local Access Road	Access to housing (<1,000)
Footways		
Category	**Description (approximate daily footfall)**	
FHVHU	Heavily used pedestrian areas within city centres (>10,000)	
FH1	High use pedestrianised zones and footways in town centres (5,000 – 10,000)	
FH2	Footways outside busy public building such as train/bus stations, hospitals, schools and colleges or small parade of shops etc. that generate significantly higher levels of use than the adjacent footways (1,000 – 5,000)	
FH3	Local Footway-Footways that link housing estates and industrial estates to other centres /routes (500 – 1,000)	
FH4	Footways in housing areas and Minor Rural footways used very infrequently (<500)	

Road Bridges, Culverts, Retaining Walls etc	
Carriageway Hierarchy	**Initial Structure Hierarchy**
CHSR	Important Structure
CH1	
CH2	
CH3	Standard Structure
CH4	
CH5	

Road Bridges, Culverts, Retaining Walls etc	
Rule	**Suggested Hierarchy**
Sole Access to community	Vital Structure

Both major traffic disruption and lengthy diversion route	Vital Structure
Either major traffic disruption or lengthy diversion route	Important Structure
Susceptible to rapid failure	Important Structure
Significant social or economic impact	Important Structure
Structure of local significance	Important Structure
Structures not classified as vital or important	Standard structure

Street Lighting

Street lighting hierarchies differentiate between primary and secondary lighting. It is expected that where an authority is adopting a part night lighting and/or dimming regime that such a hierarchy will be introduced as the means of deciding which lights can be turned off or dimmed. Inspection and repair regime may be dictated by the nature of the defect rather than by hierarchy considerations.

Details of the Street Lighting hierarchy are allocated to each individual asset and are held in NCC Mayrise asset management systems

Hierarchy differences between authorities

Asset	Newport City Council Hierarchy	Neighbouring Authority	Neighbouring Authority Hierarchy	Reason for differing Hierachy
Heol Las	Secondary Distributor	Cardiff	Main Distributor	Cardiff do not have AADT count for Heol Las and have used an adjacent carriageways AADT to estimate the hieracrhy. Due to communication they are now looking to downgrade Heol Las.
Mescoed Road	Link Road	Torfaen	Secondary Distributor	NCC will investigate the AADT as soon as is practicable, to identify if this carriaeway needs a heirarchy review.
Usk Road R113-Wentwood Road R116-Wentwood Road Gatlas Lane	Link Rd Local Access Rd Local Access Rd Local Access Rd	Monmouthshire	Secondary Distributor Link Rd Minor Rd Minor Rd	NCC have a dfferent carriaeway hierarchy to Monmouthshire. NCC Hierarchy is 1-5 where as Mountmouthshire Councils is 1-6. This explains the nuance in heiarchy.
B4591 Risca Road	Main Distributor	Caerphilly	Secondary Distributor	NCC have an AADT count of 19229. This has been communicated to CCBC.

Appendix B: Frequency of Inspections

The frequency of routine inspections are shown in the following tables along with the CSSW minimum recommended standards:

Carriageway: Routine Inspection Frequencies		
Carriageway Hierarchy	**NCC Inspection Interval**	**CSSW Recommended Minimum**
CHSR	Monthly	Monthly
CH1	Monthly	Monthly
CH2	Monthly	Every 3 months
CH3	Every 3 months	Every 6 months
CH4	Annually	Annually (poor or unknown condition)
		Every 2 years (good condition)

Footway Routine Inspection Frequencies			
Footway Hierarchy	**Inspection Frequency**	**Inspection Method**	**CSSW Recommended Minimum**
FHVHU	Monthly	Walked	Monthly
FH1	Monthly	Walked	Monthly
FH2	Monthly	Walked	Every 3 months
FH3	Every 3 months	Walked	Every 6 months
FH4	Annually	Walked	Annually (poor or unknown condition)
			Every 2 years (good condition)

Where adjacent carriageways and footways are inspected during the same inspection the higher frequency level is applied.

Inspection Tolerances

Specified Frequency	**Tolerance**
4 weeks	5 working days
12 weeks	10 working days
16 weeks	10 working days
24 weeks	10 working days
48 weeks	20 working days
104 weeks	20 working days

NB: The tolerance permitted is the total number of working days, either side of the Specified Frequency. E.g. 2 working days before and 3 working days after, not 5 working days either side.

Condition Assesments

Carriageway

The percentage of SCANNER assessments are undertaken annaully on carriageway class, at the following frequencies:

Carriageway Annual Condition Survey Coverage	
Carriageway Class	**SCANNER**
A Roads	100% (one direction)
B Roads	100% (one direction)
R Roads	50% (one direction)
U Roads	50% (one direction)

The percentage SCRIM assessments are undertaken annually, however these condition surveys have been prioritised according to the risks associated with the carriageway hierarchy rather than carriageway class, therefore the annual survey is as follows:

Carriageway Annual Condition Survey Coverage	
Carriageway Hierarchy	**SCRIM**
Strategic Route	100% (both directions)
Main Distributor	100% (both directions)
Secondary Distributor	100% (both directions)
Link Road	N/A
Local Access Road	N/A

Footway

Visual condition assessments are predominantly carried out following a reactive regime, where by the Footway is inspected and repaired according to the maintenance standards and needs.

Structures

Condition assessments are undertaken at the following frequencies.

Inspections are carried out as Defined and at the intervals for the above inspection types as detailed in Sections 3.2 to 3.29 of CS 450.

The intervals for inspections are:

1) Safety Inspection: Whenever the authority is made aware a possible safety issue due to the condition or damage to a structure which has the potential to cause the structure to become dangerous. Resulting in, but not limited to:
    - Causing danger to members of the public using the highway.
    - Causing danger to a third party due to the condition of the structure.
    - Causing damage to the public highway and third-party property.
    - Causing disruption to highway users.

2) General Inspection: The scheduled intervals between General Inspections for all types of structure is not more 24 months commencing within 2 years of construction or adoption.

3) Principal Inspection: The scheduled intervals between Principal Inspections for all types of structure is not more 72 months commencing within 6 years of construction or adoption. Principal Inspections for bridges, culverts, subways or similar structures with spans between 0.9 and 1.8m are not required. The interval between inspections after the first PI the interval between inspection may be increased to a period of up to 120 months at the discretion of the authority based on the results of a risk assessment in accordance with Appendix B of CS 450.

4) Special Inspection: Justification of Special Inspections is at the discretion of the authority. Special Inspections intervals are set by the authority based on the type and condition of the element(s) of the structure being inspected. The intervals may be reviewed and changed based on findings of inspections of the structure. A review of the need for special inspections should take place at intervals of no more than 12 months or after 6 special inspections, whichever is the sooner.

5) Inspection for Assessment: An inspection for Assessment is carried out in order to provide information required in order to allow the undertaking of a structural assessment.

*For smaller structures with easy access a General Inspection is considered sufficient without the need for a Principal Inspection to be undertaken.

Lighting

Condition assessments are undertaken at the following frequencies.

Inspection Type	Survey Coverage
Electrical	100 % Every 6 Years
Column Structural Test	As per result of previous test (3 or 6 years)
Visual	Ad-hoc (during each maintenance visit)

Appendix C: Defect Types and Intervention Levels

The following is a list of defect types and intervention levels used within the authority.

Critical Defects

Asset Type	Defect	Hierarchy	Depth/Height	Extent	Response Time
All	**Examples:** Major debris or spillage on the highway; Carriageway / footway / cycleway collapse with high risk of accidents / loss of control; Critically unstable overhead wires, trees or structures; Exposed live wiring; Isolated standing water with high risk of loss of control; Missing or seriously defective ironwork with high probability of injury to highway users	All	Not Applicable. Critical defects are defined by their potential to cause immediate injury not by defect size		2 hours

Safety Defects

Asset Type	Defect Type	Hierarchy	Depth/Height	Extent	Response Time
Carriageways	Pothole	CHSR, CH1 and CH2	CHSR >50mm CH1, CH2 >50mm	>150mm any direction >150mm any direction	By the End of Next Working Day
	Pothole	CH3, CH4	CH3, CH4 >50mm	>150mm any direction	Within 5 Working Days
Footways	Pothole, trip, rocking slab	FHVHU & designated crossing points (all hierarchies)	Trip, FHVHU >19mm Kerb Defect, FHVHU >19mm	>75mm any direction	By the End of Next Working Day
		FH1, FH2	Trip, >=40mm Kerb Defect, >=40mm	>75mm any direction >0.2m of kerb length	By the End of Next Working Day
		FH3, FH4	Trip, >=40mm Kerb Defect, >=40mm	>75mm any direction >0.2m of kerb length	Wtihin 15 Working Days

Maintenance Defects

	Defect Type	Hierarchy	Dimensional Criteria		Response Time
			Depth/Height	Extent	
Carriageways	Pothole	CHSR, CH1 and CH2	CHSR, CH1, CH2 >40mm	>150mm any direction	Within 21 Working Days.
	Pothole	CH3 and CH4	CH3, CH4, >40mm	>150mm any direction	Within 21 Working Days.
Footways	Pothole, trip or rocking slab	All	FHVHU, FH1, FH2, FH3, FH4, - >25mm	>75mm any direction	21 Working Days (FHVHU, FH1, FH2) 21 Working Days (FH3, FH4)
	Badly cracked or damaged ironwork	Any	No stated standard		

Appendix D: Highway Scheme Prioritisation Processes

Carriageways

Carriageway Surface Treatment, Resurfacing and Reconstruction

In order to prioritise surface treatments, the authority is using data from SCANNER and SCRIM condition surveys in conjunction with the latest three year accident data, highway inspection reports and local knowledge.

The information from the SCANNER surveys will assit the asset management team, in prioritising carriageway projects based on preventative maintenance, and not a worst first approach. The data retrieved from these surveys will be analysed to create a preventative maintenance approach, based around NCC Resilient network, with the carriageway hierarchy being the sub-genre of the resilient network utilised to prioritise the preventative schemes.

It is also to be noted the SCRIM surveys have been prioritiesed by using a risk-based method as advocated by the Code of Practice 'Well-managed Highway Infrastructure'. This method has resulted in the carriageway hieirarchy being chosen rather than class of carriageway, with the following carriageways identified due to speed and usage:

Strategic, Main Distributor and Secondary Distributor

The results from the SCRIM survey and most prevalent accident data will be calculated as described in NCC 'Skid Resisitance Strategy' page **Error! Bookmark not defined.** section **Error! Reference source not found.**.The critical areas identified from this analyses will then be investigated by competent personnel. Areas which are then deemed unsafe, will be prioritised accordingly for corrective maintenance

Footways

Footway Surface Treatment, Resurfacing and Reconstruction

In order to prioritise treatments, the information from highway inspectors visual condition surveys, as well as local knowledge, insurance claims and areas requiring repeated repairs will be considered. These areas will be repaired/maintained in a reactive resurfacing programme in accordance with their inherent defect catergories set out in this manual.

Structures

Prioritisation for inspections are based on the results of previous inspections and network importance. Those that have the lowest scores from previous inspections and higher network importance are given greater priority.

Street Lighting

In order to prioritise column replacements, information such as Structural testing (TR22/Asset Management Toolkit for Minor Structures) visual inspections & Electrical Testing, are used ascertain the condition of the assets. The result are then ranked and a replacement programme is devised.

Appendix E: Competency Requirements

As part of the Highways Code Of Practice implementation, a training session was formulated to advise Inspectors formally of the changes. The training consisted of:

- Introduction session advising on the requirements and reasons for the change.
- Photograph discussion session
- 2 practical inspections completed along a pre-inspected route. Review session completed after each inspection.

To determine competency, a competency test has been designed to ensure each inspector has sufficient competency to complete the job. The test centres around a desktop exercise where each inspector are shown sets of photographs to identify where issues are recognised in relation to the Investigatory Levels set by Newport City Council.

Appendix F: Extract from highways Act 1980

As the highway authority the council is subject has legal requirements that include:
The 1980 Highways Act,

- Section 41; to maintain those roads, footways and cycle tracks that are '*Highways maintainable at public expense'*.
- Section 58 ; states that a statutory defence against third party claims is provided where the Highway Authority can establish that reasonable care has been taken to 'secure that the part of the highway to which the action relates' to a level commensurate with the volume of ordinary traffic such that it 'was not dangerous to traffic'.

Section 58 : Special defence in action against a highway authority for damages for non-repair of highway.

(1)In an action against a highway authority in respect of damage resulting from their failure to maintain a highway maintainable at the public expense it is a defence (without prejudice to any other defence or the application of the law relating to contributory negligence) to prove that the authority had taken such care as in all the circumstances was reasonably required to secure that the part of the highway to which the action relates was not dangerous for traffic.

(2)For the purposes of a defence under subsection (1) above, the court shall in particular have regard to the following matters:—

a) the character of the highway, and the traffic which was reasonably to be expected to use it;

b) the standard of maintenance appropriate for a highway of that character and used by such traffic;

c) the state of repair in which a reasonable person would have expected to find the highway;

d) whether the highway authority knew, or could reasonably have been 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;

e) where the highway authority could not reasonably have been expected to repair that part of the highway before the cause of action arose, what warning notices of its condition had been displayed;

but for the purposes of such a defence it is not relevant to prove that the highway authority had arranged for a competent person to carry out or supervise the maintenance of the part of the highway to which the action relates unless it is also proved that the authority had given him proper instructions with regard to the maintenance of the highway and that he had carried out the instructions.

The New Roads & Street Works Act 1991 imparts a duty on Statutory Undertakers to maintain their apparatus in the Highway, but it has been established in Case Law that they can rely on the Highway Authority's Safety Inspection regime to some extent when defending Claims.

The Council can avoid being held jointly liable for defective apparatus by issuing a Section 81 Notice - New Roads & Street Works Act 1991 to the Utility Company whenever a defect is identified by the Authority within the Highway.

Appendix G: Traffic Sensitive Streets

Route	Length Designated	Duration
A48	Jct 24, M4 Coldra Chepstow Road eastwards to City boundary at Rock & Fountain Public House	Peak hours Mon – Sat Unrestricted Sundays
A48	Pont Ebbw R/A Cardiff Rd westwards to City boundary at St Mellons	Peak hours Mon – Sat Unrestricted Sundays
A467	From City boundary with Caerphilly CBC southwards to Tredegar Park junction 28 M4	Peak hours Mon – Sat Unrestricted Sundays
A468	Bassaleg R/A - Friendly Fox Public House	Peak hours Mon – Sat Unrestricted Sundays
A4042	Grove Park R/A - through Newport, Heidenheim Drive, Kingsway, Usk Way to junction A48 (SDR)	Peak hours Mon – Sat Unrestricted Sundays
A4051	Malpas Road from City boundary - Harlequin R/A	Peak hours Mon – Sat Unrestricted Sundays
B4236	City boundary, Ponthir to B4237 Chepstow Rd, (includes High St, Goldcroft Common and Mill St in Caerleon)	Peak hours Mon – Sat Unrestricted Sundays
B4237	Jct 24, M4 Coldra, through Newport, Chepstow Road, Wharf Road, George Street, Cardiff Road to Pont Ebbw R/A	Peak hours Mon – Sat Unrestricted Sundays
B4591	City boundary along Risca Rd, Cefn Rd incl Chartist Drive, Highcross Rd, Glasllwch Cres, Risca Rd, Stow Hill, Caerau Rd, Queensway, Clarence Pl and Chepstow Rd to Jct B4237 Wharf Rd, Newport	Peak hours Mon – Sat Unrestricted Sundays
B4596	Caerleon Rd from junction with B4236, Caerleon - junction with B4591, Clarence Place.	Peak hours Mon – Sat Unrestricted Sundays
	("Town Centre" area) Commercial St and High St, Skinner St, Stow Hill, Upper Dock St	Working period 1100 – 1700 Mon – Fri (In line with Traffic order) No programmed works on Saturdays Unrestricted Sundays No programmed works for 2 weeks before Xmas
R301	Lodge Rd, Caerleon, from High St to junction with Lodge Hill	Peak hours Mon – Sat Unrestricted Sundays
R310	Cromwell Road from Somerton Road to Corporation Road	Peak hours Mon – Sat Unrestricted Sundays
R325	Corporation Rd from Clarence Place to junc with A48 (SDR)	Peak hours Mon – Sat Unrestricted Sundays
R326	Somerton Rd and Nash Rd from B4237 Chepstow Rd to A48 (SDR)	Peak hours Mon – Sat Unrestricted Sundays
R335	Stow Hill between Friars Rd and Caerau Rd junctions	Peak hours Mon – Sat Unrestricted Sundays
R343	Bassaleg Rd from jct with B4591 via Western Valley Rd, Tregwilym Rd to Chartist Dr B4591	Peak hours Mon – Sat Unrestricted Sundays
R344	From Bassaleg R/A (on A467) along Park View to Pye Corner	Peak hours Mon – Sat Unrestricted Sundays
U/C	Belle Vue Lane	Peak hours Mon – Sat Unrestricted Sundays
U/C	Friars Rd between Belle Vue Lane and Stow Hill junctions	Peak hours Mon – Sat Unrestricted Sundays

Peak Hours 7.30 a.m. to 9.30 a.m. and 3.30 p.m. to 7.00 p.m