Denbighshire County Council

Highway Maintenance Manual

Document Control

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V1.0	Nil – Original	May 2019
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Council Approval

Version Number	Council Committee	Date
v1	…… Committee	…….. 2019

Responsibility for the Manual

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

Council Officer	Responsible for
Highways Risk and Asset Manager	Ensuring compliance with the manual and updating of the manual

1 Introduction

Purpose

The purpose of this manual is to document how the council manages highway maintenance. The manual shows how the council aims to meet its duties as the highway authority. It documents the methods used to ensure that the risk to users is appropriately monitored and managed.

Scope

The manual describes how the council maintains the road network under its control. It details the procedures used to plan and execute all works and functions associated with the management, operation and maintenance of the highway asset including how the activities are monitored to ensure compliance with council policies.

Legal Requirements

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

- **The Highways Act 1980:** This places a duty upon Highway Authorities 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 Highway Authorities 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 Highway Authorities to ensure the expeditious movement of traffic on their road network and networks of surrounding authorities.

National Guidance

To assist authorities in meeting their duties the following National Guidance is provided. The methods adopted in this manual are based upon the contents of the following:

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

Relevant Council 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 Improvement Plan and Annual Status and Options Reports.

2 Roles, Responsibilities and Competencies

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

Roles and Responsibilities

Role	Responsibility
Councillors	Approve the use of this document as council policy.
Highways Risk and Asset Manager	Develop the policy and standards, ensure their effective implementation, monitor the results and undertake an annual risk assessment update. Develops the Capital Works Programme and is involved in the agreement of the prioritisation of none urgent highway repairs.
Streetscene Manager	Responsible for the implementation of the policy; decides on the resource allocation (including external contractors) and ensures works are carried out to the specified standard.
MAG Area Co-0rdinators	Carry out inspections as per the inspection regime, recording the appropriate data for input into the AM system.
Highway Bridge Inspectors	Carry out inspections as per the inspection regime, recording the appropriate data for input into the AM system.
Works Gangs	Carrying out repairs as per the repair regime and record the required data for input into the AM system.
Contractors	Carry out repairs as instructed as instructed and record the required 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. Once completed this section of the maintenance manual will be updated.

3 Asset Register and Inventory

The asset register defines the roads that belong to and are maintained by the council. The inventory of the highway assets is based on the asset register and contains the detailed information required to manage the asset. The information includes amount, size, construction material, current condition etc.

Asset Register

The definitive record of the roads that are the councils responsibility including the full list of adopted streets is located on the GIS Mapping system and supported by the Symology software system for reporting on number of gullies, extent of adoption etc.

Inventory

A data assessment spreadsheet is located and maintained on a variety of corporate systems including specific asset layers (for example gullies, street lighting etc.,) on the GIS Mapping system. For some . The spreadsheet records the specific inventory held for each highway asset. The quality of the inventory details held is recorded on the data assessment spreadsheet. The data is held for each asset in the following software systems:

- Carriageways and Footways – Symology
- Structures and Drainage - AMX
- Street Lighting and Traffic Signals – Insert details

Data and System Improvement

The quality of the inventory details held is reviewed annually based on the information recorded on the data assessment spreadsheet. A plan for improvements to data and the highway asset management system are recorded in the Highway Data Improvement Plan.

4 Risk Management

The risks associated with maintaining the highway are managed using the methods described below. This includes how the methods comply with the risk based approach required by the Code of Practice.

Code of Practice

A revised Code of Practice (the code) for Highways "Well Managed Highway Infrastructure" was published in October 2016 providing guidance that authorities are expected to follow and may rely upon when defending themselves against third party claims.

The most significant change to the previous guidance, proposed by the new CoP, is the introduction of a risk based approach to all decision making to be undertaken by each authority individually.

CSSW have developed a method in response to the code that it recommendeds authorities adopt. The method includes development of Hierarchy, Inspection Regime and Repair Regime for the highway assets, along with recommended minimum standards for inspection and defect repair.

Use of the CSSW Risk-Based Approach

The Highways Department undertake an annual risk assessment as detailed in the "CSSW Highways Asset Management Framework Recommended Practices - Task 4 Annual Performance & Risk Review". With the results being recorded in the "4RA Risk Assessment – Spreadsheet"

The details of the asset hierarchy, inspection and repair regimes adopted by the council and where they differ from (exceed) the CSSW recommended standards is detailed later in this document.

Denbighshire County Council Corporate Risk Management

The council manages risk via the Corporate Risk Register and an electronic copy of the Highways and Environmental Services element of this document can be found at: Insert link

5 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

The 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 the CSSW "Risk Based Approach: Method". Details of how the hierarchies were derived is held in the "4RA Annual Highway Asset Risk Review 2018".

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 asset management systems, Symology

Regional Consistency

CSSW recommends that to achieve regional consistency consultation is undertaken with neighbouring authorities to enable consistent hierarchies to be allocated to assets which cross boundaries. At this time the consultation process is yet to be completed once done the assets with differing hierarchies between the council and a neighbouring authority will be listed in appendix A along with the reason for the difference.

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 review are held in the Denbighshire County Council 4RA Annual Highway Asset Risk Review". Any resultant recommended changes to the hierarchy will be proposed to council and their approval recorded.

6 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 types of inspection:

1. **Reactive Inspections/Response:** inspections undertaken in response to the notification to the authority of potential defects by other sources (council employees, members of the public, emergency services etc.).
2. **Planned/Routine Inspections:** A regime of planned inspections the purpose of which is to identify defects that have the potential to cause harm to users and to identify 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 can be visual or machine based and may 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 three working days of being notified and action will be taken as per the Council’s repair regime. (see section 14 repair regime for details of safety defect criteria). If the Customer Services team mark the defect as ‘urgent’ (following their agreed procedure to filter out such issues) then the defect will be assessed by the end of the next working day at the latest.

Where a “maintenance” defect is notified to the council by a third party an inspection of the defect will take place within three working days and action will be taken as per the Council’s repair regime. (see section 14 repair regime for details of maintenance defect criteria).

Routine Inspection Frequencies

Routine Inspection frequency is based on the Network Hierarchy. It has been determined using the CSSW Highway Asset Risk Review Method and 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. For this reason, a tolerance in frequency of inspections is permitted with details provided in Appendix B. Any changes to the frequencies must be approved by the Highways Risk and Asset Manager before they are implemented.

Inspection Schedule

Inspection routes in compliance with the regime above are held in the council's asset management system, Symology. The asset management system 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 will be considered when scheduling inspections, for Denbighshire County 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 be limited to) the following:

- Carriageways
- Footways
- Covers, Gratings & Frames (inc 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

Recording of Inspection Records

Records of the inspection and the resulting observations are recorded in hard copy notebooks (diaries) the hand-written notes are then transferred by the inspectors into the Symology daily.

Condition Assessments

The council undertake the following condition assessments on their highway assets. The frequency of condition assessment is given in Appendix B.

Carriageways

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

   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.

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

   The SCRIM data measuring wet road skidding resistance is stored in the GIS Mapping system as a discreet layer.

iii. Visual Condition Assessment

   A visual condition survey of all roads has been undertaken using a Visual Condition Assessment Method. The carriageway condition has been assessed by a trained inspector. Carriageway visual condition information is stored in the Symology database.

SCANNER and SCRIM surveys are arranged via a central contract managed by the Welsh Government. The contract covers A, B and C Roads. SCANNER surveys are not undertaken on the unclassified road network.

Footways

Visual Condition Assessment

i. CSSW recommended Footway Visual Condition Assessment Method.

   A sample visual condition survey of all footways planned using the CSSW Visual Condition Assessment Method. The footway condition will be assessed by a CSSW trained inspector. Resulting condition information will be stored in the Symology database.

Structures

Visual Condition Assessment

Structures are inspected using two planned levels of inspection:

i. Biannual General Inspections (GIs'); GIs are visual inspections, possibly with some hands-on and basic assessment e.g. hammer tapping and measurements.

ii. Principal Inspections (PIs); PIs are a more detailed visual inspection, with hands-on assessment of most/all elements plus detailed assessment e.g. hammer tapping, half-cell, chloride measurements etc. The frequency of these is based on a robust risk assessment and can vary between 6 and 12 years.

A General Inspection involves recording the extent and severity of observed defects on a form the data from which is subsequently entered into the council's Bridge Management System, AMX.

A Principal 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 council's Bridge Management System, AMX. Additional planned inspections include Acceptance and Scour inspections. Special Inspections are used to monitor the condition / operational capability of weak elements.

Street Lighting

The condition of street lighting assets is assessed as follows:

Visual Condition

Visual condition assessment is carried out on an adhoc 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 council's own bespoke street lighting asset management system.

Lighting Column Structural Testing

A programme of structural testing is being undertaken on all lighting columns using an external contractor. 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 council's own bespoke street lighting asset management system.

Remote Monitoring

The council does not operate a remote monitoring system .

Repair Regime

Repairs identified via inspection or by 3rd party notification, are prioritised for repair based upon the risk that they pose to users. The methods used to do this are 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.

Defect Categories	Description	Response Time
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	2 Hours*
Safety Defect	Service requests or defects requiring an assessment as soon as possible to remove a potential risk of injury to users	Within three working days unless deemed 'urgent'
Maintenance Defect (High) CAT 1	Other defects that warrant treatment, in order to prevent them deteriorating into a safety defect prior to the next scheduled inspection	10 Working Days (a working day is Monday to Friday and includes bank holidays)
Maintenance Defect (Medium) CAT 2	Defects that warrant treatment to prevent them deteriorating into a safety defect prior to the next scheduled inspection	30 Working Days
Maintenance Defect (Low) CAT 3	Other 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

*Response time for critical defects refers to the time to attend site, make safe or repair will then be asap thereafter.

Making safe may constitute displaying warning notices, coning off 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.

“24 Hour” Emergency Cover

The Council operates an emergency service via an out of hours Contact Centre, Galw Gofal, that operates from 6 pm until 8 am daily and at other times when the main offices are closed. The Contact Number is 0300 123 6688. Incidents are reported to the contact centre who forward them to the Duty Officer and emergency response is provided if required.

This service provides where necessary an immediate and co-ordinated response to maintain highway safety at all times. Hazards dealt with include problems such as flooding, ice and snow, unsafe street works, abandoned vehicles, traffic signal failure, electrical danger at street lighting installations, and clearing of the highway following a road traffic accident.

An incident log is produced by the Contact Centre for every out of hours period. When action can be safely deferred, this log is used to initiate any additional action required in respect of particular incidents on the next working day.

Works Ordering

Works orders are generated automatically using the council’s asset management system, Symology, 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 in hard copy and record via a tablet into the Symology system.

The defect will only be deemed ‘fully repaired’ once all records have been entered into the asset management system.

7 Cost Recording **The cost of the acitivities required to maintain the highway are recorded to enable them to be monitored and managed. The coding used to record costs is shown below.**

Cost Coding

Highway maintenance costs are allocated to one of the following categories.

Cost Category	Activity
Planned Maintenance - Preventative	Planned maintenance activities that are designed to ensure that more expensive future repairs may not be needed.
Planned Maintenance - Corrective	Planned maintenance activities that correct the condition of the asset and which would not cost significantly more if delayed.
Routine Cyclic Maintenance	Scheduled works consisting of activities that are based on a prescribed time interval.
Routine – Reactive Maintenance (Emergency)	Reactive repair of potentially dangerous defects identified from inspection or customer complaint / notification.
Routine - Reactive Maintenance (Non-Emergency)	Other less urgent minor repairs
Routine – Inspection and Survey	Cost of specialist inspection and surveys
Operating Costs	Costs of operating elements of the asset
Overhead	Internal costs associated with the management of the asset. NB it is accepted that these costs may not be available at an asset group level
Loss	Money expended that is effectively “lost” to the council from which no benefit to the asset or user is gained.
Improvements	Works that add new infrastructure to the asset.

Reviewing and Reporting of Costs

Outurn cost information is used for status reporting (ASOR) including reporting if sustainable levels of investment are being made in each asset and for the reporting of future funding needs.

8 Procurement

Detail of how maintenance works for each asset are procured are shown below. Works are procured using a combination of internal and external resources.

Principle

Day to day highway maintenance is mainly undertaken by in house council resources. Where specialist skills are required external contractors are employed. How the service is delivered for each asset is shown below.

Asset	Work Type	In-House or Contractor	Contract Details
Carriageway	Routine and Reactive	Streetscene	N/A
	Planned	Resurfacing – Contractor	Framework
		Surface Dressing – Contractor	Framework
Footways	Routine and Reactive	Streetscene	N/A
	Planned	Reconstruction – Streetscene	N/A
		Resurfacing – Streetscene	N/A
		Slurry Seal – Contractor	Spot Tender
Street Lighting	Routine and Reactive	In House	
	Planned	Column (New / Replacement) – Contractor	Framework
		Luminaire (New / Replacement) – Contractor	Framework
Highway Structures	Routine and Reactive	In House	N/A
	Planned	Contractor	Tender / Framework
Traffic Signals	Routine and Reactive	Insert details	Insert details
	Planned	Insert details	Insert details
Street Furniture	Routine and Reactive	Streetscene	N/A

Contract Reviews

Contracts are reviewed a few months before they are due to expire

9 Budget Allocation

The budget for highway maintenance is set annually by the council. Status reports are provided to assist the council in establishing the overall budget. The highway maintenance budget is allocated between asset groups and work types in accordance with the method set out below.

Annual Status and Options Reporting

Annual Status Reports (ASRs) are provided annually detailing the current condition of the asset.

Options Reports (ORs) detail the options available for its future maintenance/management based on differing budget scenarios and are provided prior to the updating of the HAMP.

Annual Budget Setting

The budget for highway maintenance and how it is to be split between asset groups and between routine and planned works is determined following the review by the council committee and allocation of the capital budget..Council Members are consulted in respect of elements of the capital allocation such as a Micro Asphalt programme but in general bothe revenue and capital budgets are allocated according to need.

Confirmation of Service Standards

Service standards are chosen based on the options presented in the OR. The standards are based upon the allocated budget and the estimated amounts of work required to achieve them.

Updating of Highway Asset Management Plan

The service standards, works required and proposed budgets are detailed in the Highway Asset Management Plan (HAMP), which is reviewed insert annually and updated annually.

10 Customer Consultation

Customer consultation is used to understand how the condition and management of the highway asset is viewed by the road users, including identifying any aspects that may need to be improved.

The council use the following methods to gain customer feedback on the highway service:

Customer Relationship Management System

Insert details of customer management system and how it is used (e.g. receives communications from the public (customer) and Members of the Council. Each request is logged on a database and referred to the relevant Officer for attention. The target to determine appropriate action is ten working days).

Progress in dealing with complaints is monitored and pursued to a conclusion. When the matter has been addressed, the database is updated to record the action taken and, where applicable, the date on which the defect was rectified. Subsequently, the customer is advised of the action taken where necessary.

Scheme Notification and Feedback

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

Roadwork's Reports

Public frustration can stem from delays caused by roadworks. To provide the public and others with information on where disruption to road traffic can be expected, a twice weekly Roadwork's Report is circulated to the major motoring organizations, local media including newspapers and radio, and emergency services. This information is also available via the council's web site (insert details). The Roadwork's Report gives details of works being undertaken on all classified routes, including the nature and anticipated duration of the works, and the method of traffic management being employed. Additional publicity is provided where exceptionally severe traffic delays are anticipated. The Authority also subscribes to roadworks.org (a web based system) which is a national roadworks database for England & Wales. It is the largest syndicated network of roadworks and traffic management information in the UK and enables the public to self -serve enquiries on roadworks.

11 Utility Activity **The condition and management of the highway is affected by third party works. The management of these third-party activities is governed by legislation (New Roads and Street Works Act (NRSWA) 1991). The manner in which 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 Symology asset management 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 works including procedure for;

street works licences; The licence system is governed by Section 50 of, and Schedule 3, NRSWA 1991 under NRSWA 1991. This allows a person/contractor without a statutory right, to place, retain and remove apparatus in the street. A licencing system is in place together with an inspection regime to check the quality of reinstatement. All section 50 licences issued are held within the street works register Symology system; licence module).

street works register; the street works registers are held within the Symology system, which also includes the street gazetteer.

notices of works; Utilities notify the Council of works including the registration and completion of reinstatements via Eton (Electronic Transfer or Notices) to the street works register (Symology System). All notices are assessed for compliance by the street works team.

restrictions on works; Section 58 restrictions are imposed to restrict works (other than those exempt; new customer connection's/emergency works) following substantial road works. Restrictions are issued via Eton (Symology System) and held with the street works registers. A list of restrictions is also published on the Councils website.

co-ordination of works; checks are carried out to identify a conflict of works upon receipt of a notice to work in the highway. If a conflict arises collaborative working is encouraged or the Utility is asked to reschedule the works to minimise disruption to highway users.

designation of protected streets, protected streets are recorded in the Street Gazetteer (Symology System). The Council can assign a protection on specific streets being used by Utilities.

standard of reinstatements; the standards of reinstatements is governed by the Specification of Reinstatements in the Highway (SROH). An inspection regime is in place to inspect and issue defect notices to ensure reinstatements comply with the required specification.

Inspection Category and Timing of Inspection;

• Cat A - 10% inspections undertaken during progress of works.
•Cat B- 10% inspections undertaken within six months following interim or permanent reinstatement
• Cat C - 10% inspections undertaken preceding the end of the two or three year guarantee period.
Inspection/defect records are held within the street works register (Symology system).

Apparatus affected by highway works; 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.

Ultility works have a significant effect upon the conditon of the highway and the users perception of it. In the future ASR 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.

12 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 process can be found on the Highways database

Review of Claims

The Highways Risk and Asset 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 Risk and Asset Manager reviews the information and includes a summary of the claims data in the ASRs.

13 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.

Full details of the arrangements put in place for managing traffic on the counties roads including the following items can be found in the documents and locations detailed in Section 12 above..

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 Denbighshire County Council is Tim Towers, the Highways Risk and Asset Manager.

Traffic Disruption

The council has in place processes for ensuring that the authority identifies causes, or potential 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 county contains a number of streets 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 Symology.

14 Routine "Cyclic" Planned Maintenance

Cyclic maintenance activities include gully emptying and verge maintenance. The frequencies at which Cyclic Maintenance activities are conducted are shown below.

Activity	Frequency
Gully Cleansing	
Standard Gullies	Once per annum
Priority Gullies	As recorded in the schedule
Grass Cutting	
Urban Roads	
Rural Roads	Once, annually
Visibility Splays	Once, annually
Safety Cutting	Minimum of once per annum but more often as required by growth
Weed Removal	
Weed Spraying	Twice per annum
Application of Retarders	N/A
Noxious Weed Removal	As and when required
Structures	
Cyclic maintenance	Vegetation clearance, obstruction clearance from watercourses, verge/drainage system clearance
Grass cutting comprises a one metre swathe immediately adjacent to the carriageway or footway. Where rare flowers exist in the verge, cutting is delayed until after the seeds have set	

There are currently no cyclic maintenance activities undertaken for lighting assets.

15 Highway Works Scheme Prioritisation Regime

Assets that are identified as 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 than 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 unforeseen circumstances.

Scheme Prioritisation

Details of the prioritisation processes can be found in Appendix G.

16 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 as inspections and routine and reactive repairs. A list of the operational performance measures along with their frequency of report and to whom they are reported is included in Service Plan

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 PIs are detailed in the Service Plan. 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 is 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 elements of performance however where 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 facilitated by CSSW and the various committees and groups that CSSW support.

Within the Structures Team the performance monitoring regime:-

- BCIav and BCIcrit scores
- The number of restrictions
- Adherence with the planned inspection schedule
- Recording compliance with the planned cyclical maintenance programme

Appendix A: Asset Hierarchy Categories

Carriageways	
New Category	**Description (approximate daily traffic volume)**
CHSR	Route enabling travel between locations of regional significance (NA, Strategic routes are identified based on their importance regionally rather than their traffic volume)
CH1	Travel between locations (traffic volume 10,000 - 20,000)
CH2	Travel between locations (5,000 - 10,000)
CH3	Travel between locations (1,000 - 5,000)
CH4	Access to housing (200 – 1,000)
CH5	Access to properties (housing and farms) (< 200)

Footways	
Category	**Description (approximate daily footfall)**
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	Footways that link housing estates and industrial estates to other centres /routes (500 – 1,000)
FH4	Footways in housing areas (<500)
FH5	Rural footways used very infrequently (<100)

Structures	
Category	**Description**
Vital Structure	A structure that is vital to the network i.e. if restricted or out of service it would cause a very significant adverse effect such as major traffic delays and a lengthy diversion route with the potential to affect other important services or community severance
Important Structure	A structure that is important to the functioning of the network, i.e. if restricted out of service would have an adverse effect on the operation of the network
Standard Structure	All other structures

Street Lighting Hierarchy

There is no hierarchy for street lighting assets managed by Insert council name Council. All assets are inspected at the same frequency and repaired within the same response time

Traffic Signals Hierarchy	
Category	**Description**
Vital Junction	A junction the operation of which is vital to the operation of the network i.e. its failure would cause major traffic disruption
Important Junction	A junction that is important to the operation of the network, the failure of which would cause traffic disruption
Standard Junction	A signalised junction on the network
Pedestrian Crossing	Pedestrian crossing

Details of the hierarchy allocated to each individual asset are held in the asset management systems (Insert details of AM systems).

Hierarchy differences between authorities (TBC)

Asset	Council Hierarchy	Neighbouring Authority	Neighbouring Authority Hierarchy	Reason for differing Hierachy

CHECK

Appendix B: Frequency of Inspections

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

Carriageway: Routine Inspection Frequencies				
Carriageway Hierarchy	**Inspection Interval**	**Inspection Method**	**Inspection Frequency Tolerance**	**CSSW Recommended Minimum**
CHSR	N/A	N/A	N/A	Monthly
CH1	Monthly	Walked urban / driven rural	+/- 5 days	Monthly
CH2	Monthly	Walked urban / driven rural	+/- 5 days	Every 3 Months
CH3	Every 3 months	Walked urban / driven rural	+/- 7 days	Every 6 Months
CH4	Every 3 months	Walked urban / driven rural	+/- 7 days	Annually or 2 yearly Dependant on condition
CH5	Every 6 months	Walked urban / driven rural	+/- 20 days	Reactive Only

Footway Routine Inspection Frequencies#				
Footway Hierarchy	**Inspection Frequency**	**Inspection Method**	**Inspection Frequency Tolerance**	**CSSW Recommended Minimum**
FH1	Monthly	Walked	+/- 5 days	Monthly
FH2	Monthly	Walked	+/- 5 days	Every 3 Months
FH3	Every 6 months	Walked urban / driven rural	+/- 20 days	Every 6 Months
FH4	Every 6 months	Walked urban / driven rural	+/- 20 days	Annually or 2 yearly Dependant on condition
FH5	Every 6 months	Walked urban / driven rural	+/- 20 days	Reactive Only

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

Inspection Tolerances

A tolerance as shown, is included to allow for unavoidable incidences such as bad weather or inspector sickness.

Condition Assesments

Carriageway

The SCANNER and SCRIM assessments are undertaken at the following frequencies

Carriageway Annual Inspection Coverage		
Road Class	**SCANNER**	**SCRIM**
A Roads	100% (one direction)*	100% (both direction)*
B Roads	100% (one direction)*	100% (one direction)*
C Roads	25% (one direction)	

Visual condition assessments are undertaken at the following frequencies.

Category	Survey Coverage
CHSR	N/A
CH1	100%
CH2	100%
CH3	100%
CH4	100%
CH5	100%

Footway

Visual condition assessments are undertaken at the following frequencies.

Category	Survey Coverage
FH1	10% Sample
FH2	10% Sample
FH3	10% Sample
FH4	10% Sample
FH5	10% Sample

Structures

Condition assessments are undertaken at the following frequencies.

Inspection Type	Survey Coverage
General Inspection	100 % Every 2 Years
Principal Inspection	Risk Assessed and undertaken every 6 – 12 years

*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	12 years after being new then every six years thereafter unless there are obvious concerns
Visual	Adhoc (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	Magnitude	Hierarchy	Road Character	Response Time
All	A situation where the inspecting officer considers the risk to safety high enough to require immediate action, typically include items such as; 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.	Not Applicable. Critical defects are defined by their potential to cause immediate injury not by defect size	All	Not Applicable. Critical defects are defined by their potential to cause immediate injury not by defect size	2 hours

the response time for a critical defect is the time until the site is made safe, this may be achieved by closing all or part of the road or coning off the hazard. In some instance a repair may be immediately possible but in many instances the repair will occur later

Safety Defects CAT 1

Asset Type	Defect Type	Hierarchy	Dimensional Criteria		CSSW National Minimum Standard	
			Depth/Height	Extent	Depth/Hieght	Extent
Carriageways	Pothole	CHSR, CH1 and CH2	>50 mm	150 mm	> 50mm	Maximum horizontal dimension greater than 150mm
	Pothole	CH3, CH4 and CH5**	>50 mm	150 mm	>75mm	Maximum horizontal dimension greater than 150mm
Footways	Pothole	All	>25 mm	50 mm	> 40mm	Maximum horizontal dimension greater than 75mm
	Crack or Gap	All	>40 mm	50 mm	> 40mm	Maximum horizontal dimension greater than 75mm
	Trip	All	>25 mm	50 mm	> 40mm	Maximum horizontal dimension greater than 75mm
	Rocking Slabs	All	>25 mm	N/A	> 40mm	N/A
Kerbing	Dislodged, Loose, Missing, Damaged - Causing a trip hazard	All	>25 mm	N/A	> 40mm	N/A

Maintenance Defects (High) CAT 2

Asset Type	Defect Type	Hierarchy	Dimensional Criteria		CSSW National Minimum Standard	
			Depth/Height	Extent	Depth/Hieght	Extent
Carriageways	Pothole	CHSR, CH1 and CH2	>50 mm	>150 mm	> 40mm	Maximum horizontal dimension greater than 150mm
	Pothole	CH3, CH4 and CH5**	>50 mm	>150 mm	> 50 mm	Maximum horizontal dimension greater than 150mm
	Crowning / Depression	All	100 mm	<2 metres	> 100mm	< 2M Length
Footways	Pothole	All	25-40 mm	>50 mm	25mm - 40mm	Maximum horizontal dimension greater than 75mm
	Crack or Gap	All	25-40 mm	>50 mm	25mm - 40mm	Maximum horizontal dimension greater than 75mm
	Trip	All	25-40 mm	>50 mm	25mm - 40mm	Maximum horizontal dimension greater than 75mm
	Rocking Slabs	All	25-40 mm	N/A	25mm - 40mm	N/A

Asset Type	Defect Type	Hierarchy	Dimensional Criteria		CSSW National Minimum Standard	
			Depth/Height	Extent	Depth/Hieght	Extent
	Badly cracked or damaged ironwork	All	N/A	N/A	N/A	N/A
Kerbing	Dislodged, Loose, Missing, Damaged - Causing a trip hazard	All	25-40 mm	N/A	25mm - 40mm	N/A

The standards in the preceding tables are a guide only. Reference should be made to the CSSW Highway Inspection Defect Recording Manual . It is an essential part of the authorities' inspection regimes that inspectors are appropriately trained. In doing so inspectors are able to complement application of the standard with their own assessment of individual defects, which may result in a different response time.

Street Lighting

The defect types and response times for street lighting faults are:

Category of Fault	Response Time
Routine	Five days for a Regulatory Sign, One day for three units or more and as resources allow for other routine jobs
Illuminated Regulatory Sign	
Three or more Lighting Units	
Other Routine Jobs	
Non Routine	Electrical testing once per year but as resources allow for other issues
Illuminated Regulatory Sign	
Other Routine Jobs	
Emergency	
To make safe potential electrical danger	2 Hours
Temporary repair of traffic bollards	2 Hours

Appendix E: Competency Requirements

To be developed,

Appendix F: Extract from highways Act 1980

As the highway authority the council is subject to 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: Scheme Prioritisation

The following prioritisation strategy was agreed at a meeting of the Council's Performance Scrutiny Committee on 7th December 2017 and remains in place.

a) We will focus on a prevention strategy and use available funding to protect as many roads as possible that are still in relatively good condition.

b) It represents better value for money to protect/prevent than it is to repair.

c) We will prioritise surface treatments to seal up existing roads will be used to keep them in a good condition.

d) Smaller scale patching / overlay work will continue to have a fundamental place in the programme.

e) We will identify sites where joint sealing will be sufficient to prevent any large scale deterioration.

f) We will utilise revenue budgets effectively such that drainage systems work efficiently to keep as much water off the carriageway as possibly.

g) We will target Jetpatcher work to treat rural deterioration.

h) We will work with other services to achieve the most potential value from available funding.

i) We will seek funding from Welsh Government to address significant issues that we are unable to fund.

Appendix H: Additional Inspector Training Information Sheets