



Powys County Council
Highways
Asset Management Plan
2019

Version Control

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1.0	Cabinet Approval	Cabinet	
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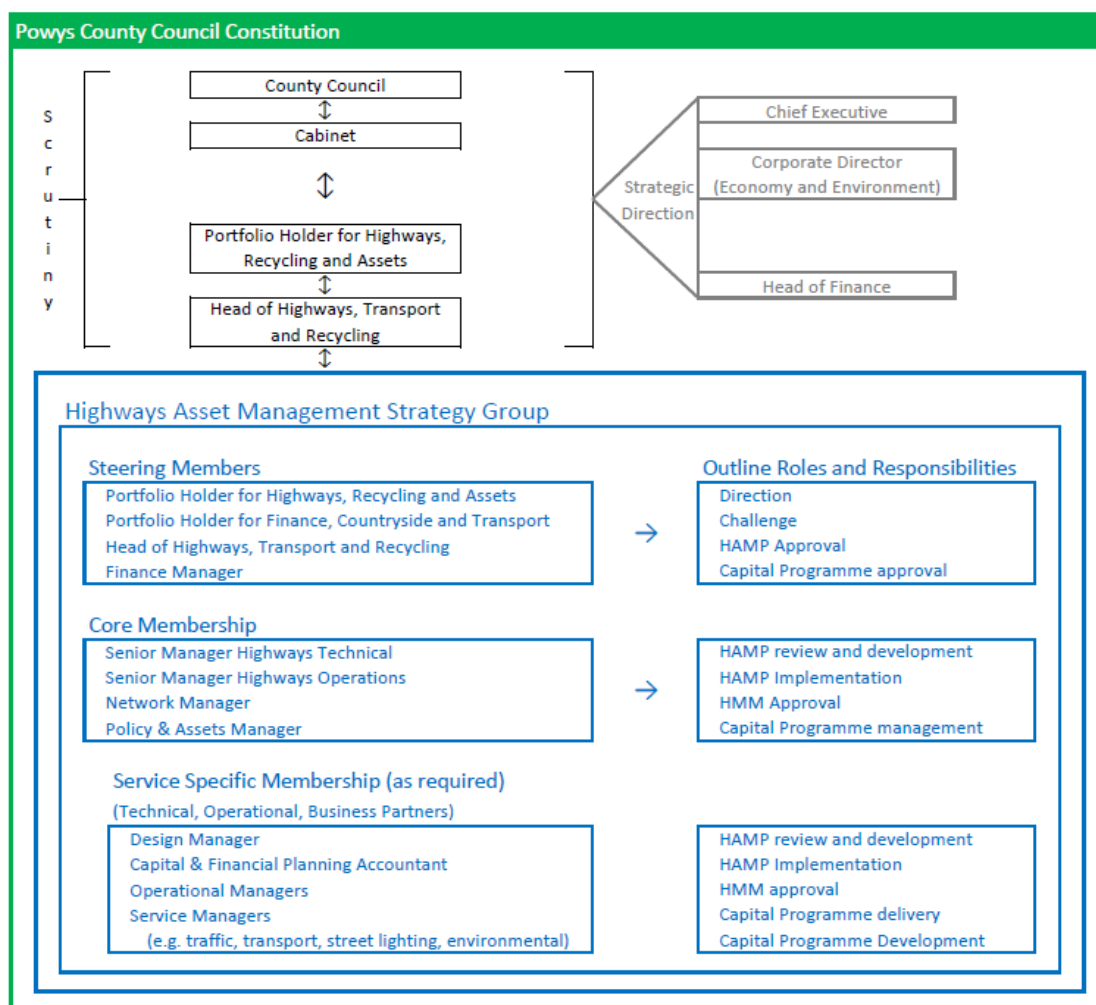
1. Introduction

- 1.1. Powys County Council is responsible for managing a highway asset valued at just over £5 billion (GRC) and which enabled 780 million vehicle km trips in 2017 ^[1].
- 1.2. Investment in highways in 2017/2018 totalled almost £20 million ^[2] equating to £3.44 per metre of road. Whilst this is a significant amount, it represents just 0.4% of the asset value.
- 1.3. Identifying need, planning investment and managing safety are key aspects of managing a highway network. This plan sets out the overarching policy framework to deliver these key requirements.
- 1.4. The first Highway Asset Management Plan was published by the Council in 2007 with an update in 2009. This HAMP updates and replaces these.
- 1.5. The HAMP comprises the following suite of documents:
 - **Asset Management Policy Statement:**
A high-level commitment to adopt the overarching principles of asset management;
 - **Highways Asset Management Plan (HAMP)**
Setting key policy for the managing the asset;
 - **Highways Maintenance Manual (HMM)**
Detail guidance on specific service delivery topics;
 - **Annual Status and Options Reports (ASOR) for key asset groups**
Review of condition of key asset groups to inform potential future investment strategies. Initially covering the two highest value assets (roads and bridges)

2. Management and Development Framework

- 2.1. Asset Management is a continuous process which to be successful must be allowed to operate in a flexible manner with appropriate checks and balances. A Highway Asset Management Strategy Group has been established to manage the day to day delivery of the HAMP within the overall framework set out below:

HAMP Management and Development Framework



2.2.

3. HAMP Coverage

- 3.1. This HAMP is intended primarily for use in the maintenance of existing highway assets. It is not intended to cover new provision.
- 3.2. The highway asset is extensive and diverse. Any asset or activity on or in close proximity to the highway is of potential interest within the context of managing the highway asset. The key components are:

Extent of the Highway Asset		
Asset Group	Element	Quantity
Carriageways	A Roads	243 km
	B Roads	606 km
	C Roads	2,102 km
	Unclassified	2,127 km
	Unsurfaced routes	736 km
Cycleways	Off site and shared use	10.6 km
Footways	Urban footpaths, adjacent to carriageway	581 km
Structures	Bridges & Culverts	1697 no.
	Footbridges	75 no.
	Retaining Walls	254 no.
	Cattle Grids	289 no.
Street Lighting	Lighting columns	11,435 no.
	Pole/building mounted lanterns	3,210 no.
Illuminated Signs	Illuminated signs, flashing lights and bollards	1,499 no.
Traffic Signals	Junction signal sites	22 no.
	School crossing signs	135 no.
	Puffin Crossings	3 no.
	Pelican Crossings	4 no.
	Zebra Crossings	26 no.
	Variable Message Signs	24 no.
Safety Fencing	Vehicle safety fencing	13.2 km
Non Illuminated Signs	All non-illuminated road signs	50,000 no. (estimate)
Drainage	Gullies	Not available
	Manholes	Not available
	Pipe runs	Not available
Traffic Calming	Road humps, chicanes, etc.	Not available
Street Furniture	All furniture (eg. Benches, litter bins, salt bins, etc)	Not available

3.3. Specific asset groups not covered by this HAMP are:

Assets/Services Not Covered by the HAMP	
Asset	Responsibility
Trunk Roads	North and Mid Wales Trunk Road Agency (NMWTRA) on behalf of Welsh Government
Public Rights of Way (Surfaced rights of way in urban areas [speed limit 40mph or less] are managed under the HAMP)	Powys County Council Countryside Service See Rights of Way Improvement Plan (RoWIP)
Un-adopted Housing Estate roads and footpaths	Powys County Council Housing Service
Public Conveniences	Powys County Council Highways, Transport & Recycling
Street cleansing/litter	Powys County Council Highways, Transport & Recycling
Car Parks	Powys County Council Highways, Transport & Recycling
Private assets including roads, footpaths, structures, industrial estates etc.	Asset Owner
Utility apparatus	Statutory Undertakers
Private Apparatus	Asset Owner
Festive lighting, decorations and bunting	Asset Owner (Typically Town and Community Councils)
Council Properties	Powys County Council Property Services

4. Legal Basis for Highway Maintenance

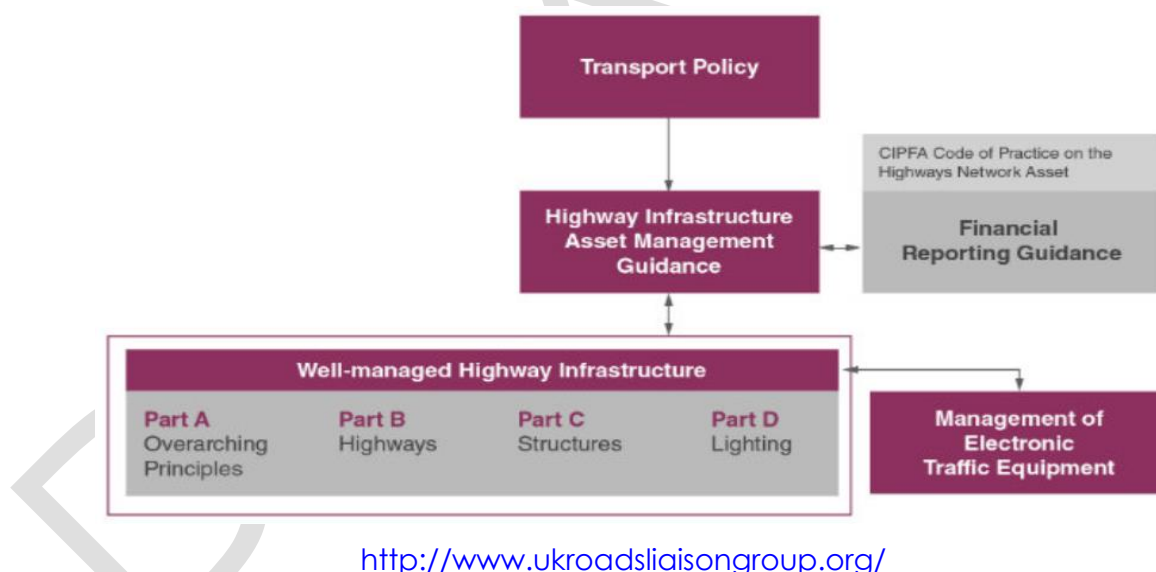
- 4.1. There are many legislative provisions relating to highways in Wales which provide Powys County Council with a range of duties and powers. Specific legislation will be referred to throughout the suite of HAMP documents as necessary.
- 4.2. The overarching duty is contained within the Highways Act 1980^[3] at Section 41 which places a "*Duty to maintain highways maintainable at public expense*" on the council.
- 4.3. Section 41 of the HA1980 does not define how or the standard to which a highway is to be maintained.
- 4.4. Section 41 (1A) places a duty on the highway authority " ...to ensure, so far as is reasonably practicable, that safe passage along a highway is not endangered by snow or ice." whilst Section 150 (1) states "*If an obstruction arises in a highway from accumulation of snow or from the falling down of banks on the side of the highway, or from any other cause, the highway authority shall remove the obstruction.*" Delivery of these duties is covered in a separate Winter Service Plan addendum to this HAMP document.
- 4.5. Section 58 provides a Special defence in action against a highway authority for damages for non-repair of highway which states:
 - (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.....
..... 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;*
- 4.6. With no specific standards set by legislation, councils have used guidance developed around best practice and legal precedent to inform management and maintenance standards.

5. Highway Improvements

- 5.1. There is no general requirement to improve highways but the council does have powers to improve. County Council funding for such schemes will be through the capital-funding programme.
- 5.2. Grant or private funding is often available and the council will seek to secure such funding where it will enhance highway provision and/or relieve a maintenance burden.

6. National Guidance

- 6.1. The UK Roads Liaison Group published guidance in October 2016. *"Well-Managed Highway Infrastructure: A Code of Practice"*^[4] is supported, endorsed and recommended by key organisations including: Department for Transport; CSSW; SCOTS and ADEPT.
- 6.2. CSSW, SCOTS and ADEPT are non-statutory bodies drawing membership from the local authorities in the regions (Wales, Scotland and England). They seek to develop, share and encourage best practice in a range of local authority functions including highways. National authorities for trunk roads are not part of these groups but are frequently included in discussions.
- 6.3. The UK Roads Liaison Group have published a range of guidance which is available via their website:



- 6.4. Powys County Council has endorsed the principles of the Code of Practice in developing this HAMP and is working with all 22 other Welsh councils through CSSW to implement it.
- 6.5. The Code of Practice promotes a risk-based approach and CSSW have agreed a prioritised project to assess, develop and assist in the implementation of the Code of Practice. A suitably qualified and experienced consultant has been engaged to support the process.

6.6. Elements delivered through CSSW in the initial tranche include:

- Understanding and development workshops
- Asset valuation;
- Asset condition;
- Review of existing best practice;
- Hierarchies;
- Defect criteria
- Response Criteria

6.7. Welsh Government, as highway authority for trunk roads across Wales, has adopted its own standard, The Trunk Road Maintenance Manual (TRMM).

6.8. Welsh Government have previously provided financial support to local highway authorities to support the implementation of HAMP's and have made specific grant funding allocations on the basis of HAMP's being developed.

7. Strategy

- 7.1. The HAMP sets out a structured approach to managing the highway asset based around the following core elements:

Element	Overarching Aim(s)
Hierarchy	Categorise assets having regard to their importance, use, character etc to inform priorities and actions.
Inspection	A planned and reactive regime of inspections aimed at identifying issues and informing future requirements and works programmes.
Defect	Identify and quantify specific items requiring action.
Repair	<p>Prioritise identified defects for attention having regard to the level of perceived Risk (Probability and Impact).</p> <p>A repair may comprise temporary or permanent action to minimise or remove the risk e.g. signing/guarding.</p>
Programmed Repairs	<p>Grouping lower priority repairs by type and location to improve efficiency e.g. patching repairs.</p> <p>Specific schemes aimed at maintaining serviceability to maximise asset life.</p> <p>Renewal schemes to replace failing or end of life assets.</p>
Planned Maintenance	Planned routine or periodic activities aimed at maintaining a safe highway asset e.g. grass cutting, winter gritting.

8. Hierarchy

- 8.1. Hierarchies have been set for the key asset types as set out in the tables below. Traffic volumes and the level of Footfall are the primary factors in setting the hierarchy. Additional factors may need to be taken into account based on local knowledge. These will inform inspection frequencies and repair regimes set out later in the HAMP. Guidance on applying Hierarchies together with any additional factors are given in the HMM.

Carriageway Hierarchy		Traffic Volume Band (AADF)
CHSR	Strategic	Based on local importance rather than traffic flow but often in the range >20,000 [30,000 for calculations]
CH1	Main Distributor	10,000 to 20,000
CH2	Secondary Distributor	5,000 - 10,000
CH3	Link	1,000 - 5,000
CH4	Local Access	200 – 1000
CH5	Minor	< 200
Note: Adjustment may be required where a road has multiple lanes.		

Footway Hierarchy		Footfall Level (AADF)
FHVHU	Prestige	> 10,000 (15,000 used for calculations)
FH1	Primary	5,000 - 10,000
FH2	Secondary	1,000 - 5,000
FH3	Link	500 - 1,000
FH4	Local	< 500
FH5	Minor	< 100
Note: Adjustment may be required where a road has multiple lanes.		

Road Bridges, Culverts, Retaining Walls etc		
Carriageway Hierarchy		Structure Hierarchy
CHSR	Strategic	Important Structure
CH1	Main Distributor	
CH2	Secondary Distributor	
CH3	Link	Standard Structure
CH4	Local Access	
CH5	Minor	

Note: this hierarchy is used to assess priorities for programming work only.

Road Bridges, Culverts, Retaining Walls etc	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

Note: this hierarchy is used to assess priorities for programming work only.

Street Lighting	Hierarchy
All night lighting	Primary
Part night or dimmed lighting	Secondary

9. Inspection Regimes

9.1. Based on the defined hierarchy the minimum inspection frequencies are shown below.

9.2. Carriageway Hierarchy

Carriageway Hierarchy	Minimum Inspection Interval
CHSR	Monthly
CH1	Monthly
CH2	Every 3 months
CH3	Every 6 months
CH4	Annually (poor or unknown condition) Every 2 years (good condition)
CH5	Reactive

9.3. Footway Hierarchy

Footway Hierarchy	Minimum Inspection Interval
FHVHU	Monthly
FH1	Monthly
FH2	3 months
FH3	6 months
FH4	Annually (poor or unknown condition) Every 2 years (good condition)
FH5	Reactive

9.4. Inspection Tolerances

An inspection tolerance of 50% of the inspection interval or 3 months (whichever is the least) is allowable for unavoidable incidences such as bad weather, inspector sickness etc.

9.5. Street Lighting Hierarchy

Street Lighting		
Hierarchy	Inspection Element	Minimum Inspection Interval
All	Structural	6 years
All	Electrical	6 years
All	Superficial	With carriageway/footway inspection
All	Luminaire	Reactive

Superficial inspections are undertaken as part of the carriageway/footway inspection.

Major Structures - Road Bridges, Culverts, Retaining Walls etc		
Hierarchy	Inspection Type	Minimum Inspection Interval
All	Superficial	With carriageway/footway inspection
All	Principal	As required
All	Special	As required
All	Assessment	Set Programme
CHSR / FHVHU	General	Every 2 years
CH1 / FH1	General	Every 2 years
CH2 / FH2	General	Every 2 years
CH3 / FH3	General	Every 3 years
CH4 / FH4	General	Every 3 years
CH5 / FH5	General	Every 3 years

Major Structures Inspection Types

Inspection Type	Description
General (GI)	<p>Overview of the visible structure, looking for signs of distress and local damage including: condition of bearings; drainage; expansion joints; parapets and surfacing of the carriageway, footway or verge.</p> <p>Does not include items that are not safely accessible to the inspector without additional access equipment, or entry into confined spaces.</p>
Principal (PI)	Close inspection of all parts of the structure including those requiring specialist access equipment, confined space entry, divers etc
Special (SI)	<p>Undertaken where concerns identified about structural integrity of structure that requires monitoring until a full assessment or repair is completed or where on-going monitoring considered necessary.</p> <p>Frequency determined on structure specific basis e.g. daily, weekly, monthly, 3 monthly etc.</p>
Assessment	Principal Inspection carried out with the primary aim of confirming load capacity in line with European Directive.

9.6. Major Structure Types

Structure Type	Description
a)	Bridge, buried structure, subway, underpass, culvert and any other structure supporting the highway and subject to applied vehicular traffic loading with clear span or internal diameter of 1.8m or greater except that corrugated steel buried structures are included if they have spans of 0.9m or more.
b)	Earth retaining structures (as defined in BD 62) with an effective retained height of 1.5m or greater, and subject to applied vehicular traffic loading.
c)	Reinforced/strengthened soil/fill structure with hard facings (as defined in BD 62) with an effective retained height of 1.5m or greater, and subject to applied vehicular traffic loading.

As defined in Design Manual for Roads and Bridges Volume 3:
 BD 101/11 Structural Review and Assessment of Highway Structures.
<http://www.standardsforhighways.co.uk/ha/standards/dmr/index.htm>

9.7. Other Structure Types

Structures not covered within the "Major Structure" definitions are inspected as part of the other inspection regimes. Identified issues may trigger a more detailed inspection requirement.

10. Defect Categories

10.1. Defect Definitions

Critical Defect	<p>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,</p> <ul style="list-style-type: none"> ➤ Requiring an immediate response to make the site safe. <p>Examples: 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.</p>
Safety Defect	<p>Defects that pose an imminent risk of injury to road users,</p> <ul style="list-style-type: none"> ➤ Requiring a response as soon as possible to remove a potential risk of injury to users.
Safety Defect	<p>Defects that pose an imminent risk of injury to road users,</p> <ul style="list-style-type: none"> ➤ Requiring a response as soon as possible to remove a potential risk of injury to users.
Maintenance Defect	<p>Defects that warrant treatment to prevent them deteriorating into a safety defect prior to the next scheduled inspection,</p> <ul style="list-style-type: none"> ➤ Requiring a response to prevent them becoming a safety defect.
Programmed Repairs	<p>Defects that warrant treatment, in order to prevent them deteriorating to such an extent that additional works or costs may be incurred.</p>

11. Defect Criteria

11.1. Critical Defects

Asset Type	Defect Type	Hierarchy	Dimensional Criteria	
			Depth/Height	Extent
All	Examples: 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.	Not Applicable. Critical defects are defined by their potential to cause immediate injury not by defect size.

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

11.2. Safety Defects

Asset Type	Defect Type	Hierarchy	Dimensional Criteria	
			Depth/Height	Extent
Carriageways	Pothole	CHSR, CH1, CH2	> 50mm	Maximum horizontal dimension greater than 150mm
	Pothole	CH3, CH4 Urban**	>75mm	Maximum horizontal dimension greater than 150mm
	Pothole	<i>Investigatory**</i>		
		CH4 Rural**, CH5**	>75mm	Maximum horizontal dimension greater than 150mm
Footways	Pothole, trip, rocking slab	All	> 40mm	Maximum horizontal dimension greater than 75mm
Other	Any	All	N/A	

**Defect triggers on CH4 Rural (Speed limit over 40mph) and CH5 roads are to be considered an investigatory level.

11.3. Maintenance Defects

	Defect Type	Hierarchy	Dimensional Criteria	
			Depth/Height	Extent
Carriageways	Pothole	CHSR, CH1, CH2	> 40mm	Maximum horizontal dimension greater than 150mm
	Pothole	CH3, CH4 Urban**	> 50 mm	Maximum horizontal dimension greater than 150mm
		Investigatory Level		
		CH4 Rural**, CH5**	> 50 mm	Maximum horizontal dimension greater than 150mm
	Crowning / Depression	All	> 100mm	< 2M Length
Footways	Pothole, trip or rocking slab	All	25mm - 40mm	Maximum horizontal dimension greater than 75mm
	Badly cracked or damaged ironwork	Any		N/A

Defect triggers on CH4 Rural (Speed limit over 40mph) and CH5 roads are to be considered an **investigatory level.

11.4. Other Defect Types

Defect types not covered within the above categories are assessed on a risk basis having regard to the guidance in the Risk Matrix below.

Response Times should be in line with the relevant Defect Category and Hierarchy detailed in the Repair Regimes.

Risk Matrix

Guidance for Assessing Defect Category where intervention criteria not set.

		PROBABILITY			
		How likely is someone going to be exposed to the risk ? Number of users passing (hierarchy) Where is the it? (in an area where people are likely to drive/walk or to the side out of the way)			
IMPACT		VERY LOW (1) very low probability	LOW (2) low probability	MEDIUM (3) medium probability	HIGH (4) high probability
If someone is exposed to the risk what impact could it have	NEGLIGIBLE (1) little or negligible impact	1	2	3	4
	LOW (2) minor or low impact	2	4	6	8
	NOTICEABLE (3) noticeable impact	3	6	9	12
	HIGH (4) major, high or serious impact	4	8	12	16

Likely Defect Category based on Risk Assessment

Critical Defect 16	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. Examples: 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.
Safety Defect 9 to 12	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.
Maintenance Defect 6 to 8	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.
Programmed Repairs 1 to 4	Defects that warrant treatment, in order to prevent them deteriorating to such an extent that additional works or costs may be incurred.

12. Minimum Standard Carriageway Repair Regime

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, ➤ Requiring an immediate response to make the site safe.	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)
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.	Within 5 Working Days (CH3, CH4**, CH5**)
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	1 month (CHSR, CH1, CH2) 3 months (CH3, CH4**, CH5**)
Programmed Repairs	Defects that warrant treatment, in order to prevent them deteriorating to such an extent that additional works or costs may be 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.

** **Defect triggers on CH4 Rural (Speed limit over 40mph) and CH5 roads are to be considered an **investigatory level**.
An investigatory level does not automatically trigger a response. It will be incumbent upon the inspector to assign an appropriate response to each defect based upon its type, size, location and the level of use of the road. CH4 Rural and CH5 roads are low use roads and defects will frequently present low risk to users and can be responded to accordingly.

13. Minimum Standard Footway Repair Regime

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, ➤ Requiring an immediate response to make the site safe.	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)
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.	Within 15 Working Days (FH3, FH4, FH5)
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.	1 month (FHVHU, FH1, FH2) No set response time (FH3, FH4, FH5)
Programmed Repairs	Defects that warrant treatment, in order to prevent them deteriorating to such an extent that additional works or costs may be 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.

14. Works Funding

- 14.1. Funding for identified works will be revenue or capital funding as defined by accounting practice.
- 14.2. In general, works over £10,000 in value that extend the life of the asset by more than 12 months will likely be funded through the capital programme.
- 14.3. Critical and Safety defects will be funded through revenue budgets.

15. Works Programmes and Prioritisation

- 15.1. The majority of programmed repairs will be completed within a prioritised Capital Programme through the Highways Asset Management Strategy Group (HAMSG).
- 15.2. Capital funding will be allocated to a range of local works programmes through HAMSG and may include for generic asset funding (e.g. major patching) and scheme specific funding.
- 15.3. Generic asset funding will be on the basis of a block financial allocation to be prioritised and managed at a local level to enable planned short and medium term responses.
- 15.4. Scheme specific funding will be prioritised and managed by HAMSG.
- 15.5. The following ranking schemes are available to support assessment and prioritisation of scheme specific funding:
 - General Works
 - Structures
 - Small Schemes including:
 - Small and Safety Schemes;
 - Traffic Management
 - 20mph Zones

Details and guidance notes are included in the Highways Maintenance Manual (HMM).
- 15.6. Assessment and prioritisation of generic asset funded schemes should follow the principles of the established ranking schemes.
- 15.7. Ranking schemes will be reviewed and amended through HAMSG to ensure they remain appropriate.

16. Routine Maintenance Levels of Service

16.1. Planned routine maintenance activities are undertaken at the following intervals:

Levels of Service	
Asset Category	Planned Minimum Service Level
Grass Verges - Urban	3 cuts per year.
Grass Verges - Rural	1 cut per year.
Roadside Verge Natures Reserves (RVNR)	Managed in accordance with individual cutting regime to reflect habitat requirement.
Gully Emptying	Class 1 (A roads) and Class 2 (B roads) cleansed once per year; Urban Towns & Villages cleansed once per year; Remaining 34% of network cleansed in response to inspections and external reports.
Drainage Grips	Class 1 (A roads) and Class 2 (B roads) cleansed once per year; Remaining network cleansed in response to inspections and external reports.
Drainage Ditches	Cleansed in response to inspections and external reports.
Winter Service	Planned and reactive response (See Winter Service Plan).
All other assets	Response based on inspection and report information.

17. Carriageway Technical Surveys - SCANNER

- 17.1. Technical surveys provide a more detailed assessment of specific asset types. Two types of survey are undertaken: SCANNER and SCRIM.
- 17.2. SCANNER (Surface Condition Assessment for the National Network of Roads) surveys are machine surveys that quantify road condition by measuring: longitudinal profile (ride quality); transverse profile (rutting); edge deterioration; surface texture and cracking. The results are reported as: Red, Amber or Green to give an overview of road condition. Further information is available from the UK Roads Liaison Group:

<http://ukroadsliaisongroup.org/en/asset-condition/road-condition-information/data-collection/scanner/>

- 17.3. SCANNER surveys provide data for the following Public Accountability Measures (PAMs):
- PAM/020 - Percentage of A roads in poor condition
 - PAM/021 - Percentage of B roads in poor condition
 - PAM/022 - Percentage of C roads in poor condition

Guidance on SCANNER 2019/2020 PAM requirements is available through the Data unit Wales at:

<http://www.data.cymru/SharedFiles/Download.aspx?pageid=30&fileid=306&mid=64>

- 17.4. SCANNERS surveys are undertaken to meet the minimum PAM requirements.

18. Carriageway Technical Surveys – SCRIM

- 18.1. SCRIM (Sideway-force Coefficient Routine Investigation Machine) provides a measure of road surface grip.
- 18.2. SCRIM Surveys are undertaken on County Class 1 (A roads) and higher usage County Class 2 (B roads).

19. References

[1]	Welsh Government StatsWales https://statswales.gov.wales Transport > Roads > Road traffic > Volume of road traffic by local authority and road classification https://statswales.gov.wales/Catalogue/Transport/Roads/Road-Traffic/volumeofroadtraffic-by-localauthority-roadclassification
[2]	Welsh Government StatsWales https://statswales.gov.wales Revenue: Local government > Finance > Revenue > Outturn > Revenue outturn expenditure summary, by authority https://statswales.gov.wales/Catalogue/Local-Government/Finance/Revenue/Outturn/revenueoutturnexpendituresummary-by-authority Capital: Local government > Finance > Capital > Outturn > Capital outturn expenditure, by authority and service https://statswales.gov.wales/Catalogue/Local-Government/Finance/Capital/Outturn/capitaloutturnexpenditure-by-authority-service
[3]	Highways Act 1980 http://www.legislation.gov.uk/ukpga/1980/66
[4]	Well-Managed Highway Infrastructure: A Code of Practice http://www.ukroadsliasongroup.org/en/utilities/document-summary.cfm?docid=4F93BA10-D3B0-4222-827A8C48401B26AC

20. Abbreviations

AADF	Annual Average Daily Flow (Traffic)
ADEPT	Association of Directors of Environment, Economy, Planning and Transport
CSSW	County Surveyors Society Wales
GRC	Gross Replacement Cost
HA1980	Highways Act 1980
HAMSG	Highways Asset Management Strategy Group
SCOTS	Society of Chief Officers of Transportation in Scotland