Staffordshire County Council

Highway Infrastructure Asset Management Plan

October 2019

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1. Background

1.1 Introduction

Staffordshire's highway infrastructure supports private, public and business transport needs in a diverse environment. Highway infrastructure is the largest and most visible asset the Staffordshire County Council (SCC) is responsible for and it is fundamental to the delivery of the Strategic Council Plan. It includes over 6,000km of road network, as well as supporting public transport through cycle routes, public rights of ways, canals, bus stations and shelters, on-street parking, school buses and vehicle fleet. It reflects the character and quality of the local areas that it serves and makes an important contribution to the wider Council priorities, including regeneration, social inclusion, education, employment, recreation and health. In order to deliver these aims and strengthen local communities, it is crucial that it is maintained to enable safe, reliable and sustainable journeys. Maintaining such as asset requires significant funding and many co-ordinated operations. In order to provide the greatest outcomes, operations must be well managed to extract the greatest value for the funding invested.

The document is designed to align with the guidance in Well Managed Highway Infrastructure – Code of Practice (October 2016), whilst setting out a specific approach for Staffordshire County Council in line with local needs and priorities. There has been a shift from the previous guidance set out in Well Maintained Highways – Code of Practice for Highway Maintenance Management (July 2005) which was prescriptive, to a risk-based approach determined by each Highway Authority. This Plan will set out that approach considering appropriate analysis and development.

1.1.1 Asset Management

The Highways Infrastructure Asset Management Group (HIAMG) defines Asset Management as follows:

"A systematic approach to meeting the strategic need for the management and maintenance of highway infrastructure assets through long term planning and optimal allocation of resources in order to manage risk and meet the performance requirements of the authority in the most efficient and sustainable manner".

The Association of Directors of Environment, Planning and Transport (ADEPT) define asset management as:

"A strategic approach that identifies the optimal allocation of resources for the management, operation, preservation and enhancement of the highways infrastructure to meet the needs of current and future customers."

The International Standard for asset management (ISO55000) defines *asset management* as the "coordinated activity of an organization to realize value from assets". Assets are thus defined as items, things or entities that have potential or actual value to an organisation. Highway asset management is the term that is used to explain the systems and processes that affect the highway in order to deliver value.

Although asset management covers every stage of an asset's lifecycle from acquisition to disposal, this asset management plan is focussed on the management and maintenance aspects of highway infrastructure assets since this is where the majority of the County Council's highway related activities and funding are focussed.

1.1.2 The benefits of asset management

There are many benefits of asset management. The County Council sees the main benefits as:

- A comprehensive understanding of extent and condition of the highway infrastructure assets;
- A clear methodology for linking goals, aspirations and objectives with levels of service;
- A sound approach for predicting the levels of funding required to deliver the desired levels of service at minimum cost over the asset's whole life;
- A mechanism for assessing the impact of funding constraints;
- Better understanding risks associated with these assets, not simply health and safety, but also financial risks, environmental risks and hazards which may affect the service it provides; for example, preventing the closure of a bridge.
- An opportunity to maximise funding and ensure that secured funding is used efficiently and effectively;
- A route to minimising lifecycle costs and reducing expensive reactive repair costs;
- Alignment and co-ordination of existing initiatives, including competency development;
- Greater engagement of the workforce, including leadership, communications and cross-disciplinary teamwork.
- Making better informed decisions about investments. Decisions are made using a long-term 'whole-life' approach leading to optimum outcomes.
- Aligning highway maintenance service provision to the County Council's objectives.
- Increasing transparency of the challenges faced and the performance of the asset as well as how we are meeting out statutory duties leading to improved customer satisfaction, stakeholder awareness and confidence.
- Understanding the consequences of changes to investment levels.

A key benefit of an asset management approach is to move decision making away from the imminent and the urgent to a planned regime where the needs of the asset are better understood so that appropriate preventative maintenance treatments can be planned within a wider whole-life approach. This enables decisions to change from those based on a worst-first priority to those that delivers greatest value.

1.2 Purpose of this document

The purpose of the Highway Infrastructure Asset Management Plan (HIAMP) is to define the framework for a holistic asset management approach for the County Council's highway infrastructure assets to provide a mechanism through which informed decisions on investment strategies can be made and the optimum whole life costs for each asset developed.

This asset management framework can be applied to any of its highway assets as set out in Figure 1.

The purpose of this plan is:

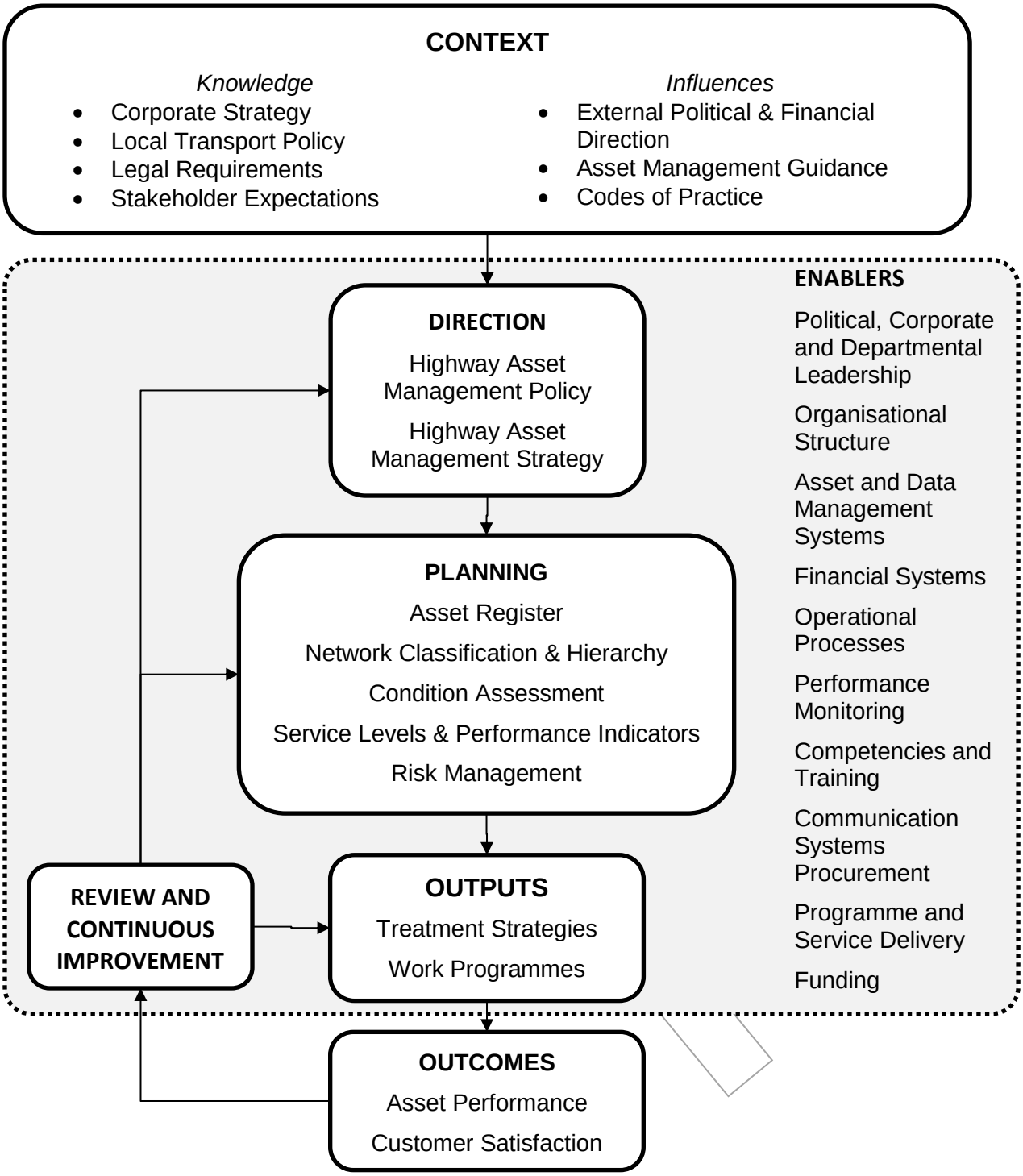
- To provide a reference for staff members of the Highways and Built County service area and its contractors on specific aspects of highway maintenance.
- To provide a document for Council Members that assists with decisions to be made about delivering the highway asset.
- To allow members of the public to gain sufficient understanding on the challenges ahead and actions to be taken to maintain the highway.
- To better understand risk and its impacts on the asset.
- To set out the asset management requirements for the highway asset is a recognised format.

The plan also includes milestones to be achieved in the period to 2021/22.

The document has been produced following the HMEP Highway Infrastructure Asset Management Guidance Document. This guidance provides the basis for a consistent approach and understanding of the implementation and delivery of asset management benefits.

As a framework, it does not include all details of the highways service. The County Council maintains detailed operating procedures for internal use which are some of the enablers this plan as shown in Figure 1. Communication with internal and external stakeholders is vital and information about how the County Council will communicate its activities is included. Data management is also a key activity which supports all the functions on this framework and the County Council's approach to this activity is also included.

Figure 1. The Asset Management Framework



1.3 How this Policy Supports the County Council's Strategic Aims

The information provided in this policy will inform us to make more proactive decisions to ensure that the standard of highway assets meets the needs of our customers both now and just as importantly for the next generation. The policy supports the three commissioning priorities that relate to highways through the following:

Feel safer, happier and more supported in their community

Staffordshire County Council and its supply chain partners will continue to make Staffordshire a great place to live through the implementation of the HIAMP, implementing asset management principles to deliver a safe network, increased efficiency and lead innovation in highway maintenance. We will continue our drive to reduce the impact of highway operations on the environment and communities, primarily through the utilisations of recycled materials and reducing energy consumption.

Be able to access more good jobs and feel the benefits of economic growth

Through the delivery of the HIAMP we will implement asset management best practice to optimise highway investment nurturing the right transport conditions for business growth. Through innovation in network management we will reduce the negative impact of highway works on travelling stakeholders; hence helping to improve business efficiency.

Be healthier and more independent

The continuing implementation of preventive principles will further embed resilience into the highway network, helping to deal with unforeseen events. Community self-help groups will be further developed to increase community resilience in times of extreme weather.

1.4 What are the highway assets?

The assets covered by this HIAMP have been collected into asset groups. The key asset groups are carriageways, footways and cycleways, structures, street lighting, traffic signals and drainage; these comprise the majority of our asset by asset value. There are many other assets which are also covered by aspects of this plan, these have been grouped under soft estate and street furniture. Summary information about the assets in our Asset Registers is given in Table 1.

Table 1. Highway assets

Highway Assets	
Asset Group	**Elements**
Carriageway	Carriageway - including lay-bys, bus lanes etc
Footway, Footpaths & Cycleways	Footways - adjacent to the carriageway
	Footways - remote from the carriageway
	Cycleways - constructed off-carriageway cycleways, shared cycle/footways and cycle/carriageways
Structures	Bridges, sign gantries, culverts, embankments, retaining walls and subways
Lighting (including illuminated signs and bollards)	lighting columns, lamps, cabling, ducts feeder pillars, subway lighting. Illuminated signs & posts, information boards
Integrated Transport Systems	Signalised junctions, signalised pedestrian crossings, detection equipment, cabling, ductwork, bollards and variable message signs
Safety Fences	Vehicle safety fences
Non-illuminated Signs	Non- illuminated signs, warning, regulatory and local direction/information posts, information boards
Closed Circuit Television	CCTV Installations & Monitoring Equipment
Drainage	Gullies & linear drainage channels, highway drains (including pipework, manholes & outfalls), land drainage ditches and watercourses, roadside ditches swales etc
Traffic Calming	Traffic Calming Features - including tables, humps chicanes etc
Road Markings	All road markings
Verges and Planted areas	verges, soft landscaped areas and trees
Street Furniture	Cycle stands, bollards etc

Asset Type	Amount	Unit	Data Confidence
Carriageway	**6060.6**	km	High
Footway	**4168**	km	High
Cycleway	**199**	km	High
Bridges	**1048**	No.	High
Culverts (1.0 - 1.5m span)	**Unknown**	No.	No Info
Retaining Walls	**200**	km	Low
Streetlights	**92,656**	No.	High
Illuminated Signs	**22,741**	No.	High
Illuminated Bollards	**2076**	No.	High
Subway Lights	**675**	No.	High
Zebra Crossings	**347**	No.	High
Twin Amber Flashing Units (school crossing points)	**216**	No.	High
Feeder Pillars	**442**	No.	High
Hatpins	**311**	No.	High
Car Park Monitoring Systems	**112**	No.	High
Traffic Signal Junctions	**174**	No.	High
Traffic Signal Pelican / Puffin / Toucan	**353**	No.	High
Dual Pelican / Puffin / Toucan	**42**	No.	High
Vehicle Actuated Signs (VAS)	**128**	No.	High
Variable Message Signs (VMS)	**23**	No.	High
Car Park Management Systems	**6**	No.	High
CCTV Cameras	**12**	No.	High
Non-illuminated Signs	**Unknown**	No.	No Info
Road Gullies	**148,000**	No.	High
Footway Gullies	**Unknown**	No.	Medium
Rural Verge	**5762**	km	Medium
Urban Verge	**2,240,036**	m^2	Medium
Kerb	**Unknown**	m	No Info
Culverts	**Unknown**	No.	No Info
Offlet kerbs, bypass kerbs & kerb drain	**Unknown**	No.	No Info
White and Yellow Lining	**Unknown**	m	No Info
Safety Fencing	**50,209**	m	Medium
Pedestrian Guardrail	**Unknown**	m	No Info
Boundary Fencing	**Unknown**	m	No Info
Visibility Fencing	**Unknown**	m	No Info
Highway Drain	**Unknown**	m	No Info
Bollards	**Unknown**	No.	No Info
Fingerposts	**Unknown**	No.	No Info
Trees	**Unknown**	No.	Low
Bus Stop Flag Posts	**Unknown**	No.	No Info
Street Furniture, bicycle racks etc	**Unknown**	No.	No Info
Grit Bins	**1774**	No.	High

Other assets included in this plan are

- Soft estate: Trees, verges, visibility splays and hedgerows
- Drainage connections, soakaways, SUDS in the highway and attenuation assets.

Highway assets which are not covered by this plan are:

- Assets on the PROW network
- Car Parks
- Bus Shelters
- Street name plates
- Bus Lane CCTV equipment
- Assets managed by Highways England
- Car Parking Assets including Pay & Display machines
- Park and Ride sites

1.5 Valuation

The highway infrastructure assets in Staffordshire have been valued in accordance with Whole of Government Accounting (WGA) principles. WGA values the asset based on a replacement with a modern equivalent asset rather than on an historical cost basis. The investment that would be required to completely replace the asset with an 'as new' modern asset is called Gross Replacement Cost (GRC). An assessment of the deterioration in the asset is also used to calculate an amount of depreciation and, by deduction from the GRC, the current value of the asset or Depreciated Replacement Cost (DRC) is obtained. Acquiring assets and disposing of assets will affect both GRC and DRC while maintenance activity on existing assets will affect only the DRC.

The highway asset has a current gross replacement cost of £7.77 billion, excluding land and a depreciated replacement cost of £6.71 billion. The annual depreciation is £38.3m i.e. the amount of annual funding required to maintain the highway asset in a steady state.

Table 2. Summary table of the WGA asset valuation

	£000's	£000's	£000's
Asset Group	**Gross Replacement Cost**	**Depreciated Replacement Cost**	**Annual Depreciation**
Carriageway	5,541,320	5,171,414	18,321
Footways + Cycleways	765,735	721,116	1,225
Structures	1,300,393	746,345	13,814
Traffic Management	31,441	16,740	1,536
Street Furniture	35,777	14,561	827
Total	**7,674,666**	**6,670,176**	**35,723**

In Staffordshire, the Gross Replacement Cost of highway infrastructure assets (excluding land) was valued at £7.76billion.

1.6 Management of the Asset

Infrastructure services are delivered through a number of different contract models depending upon the asset group. Highway maintenance, design and construction services are delivered through the Infrastructure Plus (I+) Strategic Partnership, Street lighting is delivered through a Private Finance Initiative (PFI) and a number of other services are delivered internally.

1.7 Legal requirements

The Council has a many statutory duties which are set out in legislation. For the purpose of this document, the principal duties are:

- As a highway authority, the Council must maintain highways maintainable at public expense. Section 41 of the Highways Act (1980).
- As a local traffic authority, the Council must manage the road network to secure the expeditious movement of traffic on its own network and to facilitate the expeditious movement of traffic on other road networks. Section 16 of the Traffic Management Act (2004).

These duties, as well as the other duties, must be fulfilled above and beyond the objectives of this HIAMP.

1.8 Asset management goals

A number of statements about asset management and supporting principles have been set out in the Highway Asset Management Policy. These have been interpreted for this document as our asset management goals and a set of actions to achieve these goals.

Our Asset Management goals are to:

- Ensure the optimal use and direction of the County Council's resources in maintaining the county's highway infrastructure assets for the benefit of current and future stakeholders
- Take account of the safety of stakeholders, customer expectations, network hierarchy, levels of use, network condition, environmental impact and the available resources to prioritise maintenance interventions and treatment choices.

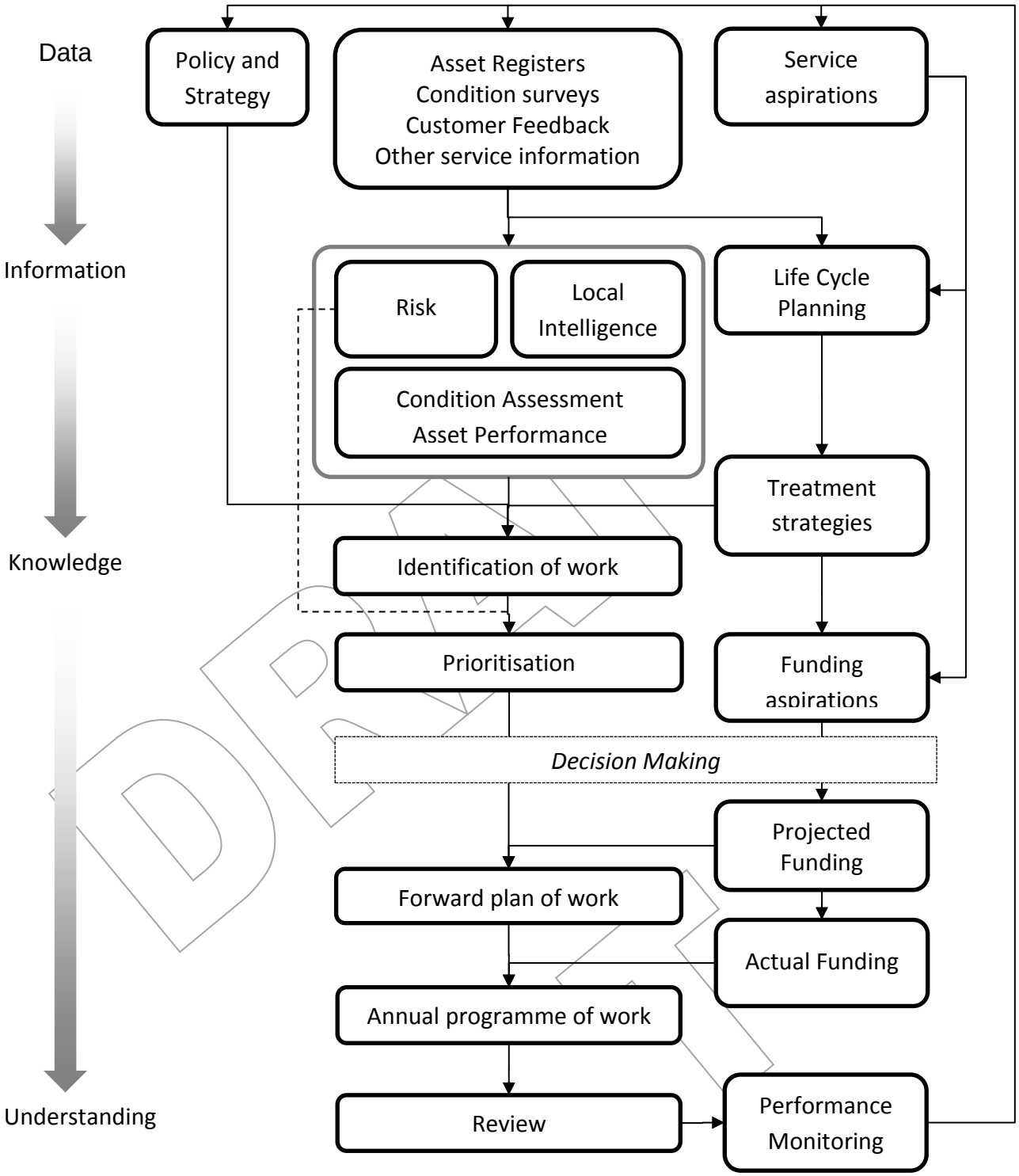
To achieve these goals, we will:

- Adopt an asset management approach.
- Consult with stakeholders.
- Use preventative and restorative treatments in the right place and at the right time.
- Make informed decisions supported by life cycle analysis.
- Develop programmes of work for all key assets.

- Rationalise our assets by removing redundancy and low value items.
- Develop our processes to focus on how our assets can be improved to encourage sustainable travel.
- Account for the environmental impact of our work.
- Improve our decision making through the adoption of a resilient network.
- Endeavour to maintain our winter service networks.
- Collaborate with others.
- Continue to review and challenge our approach.

Our asset management approach is set out as a generic system in Figure 2. This system shows that the use of data is fundamental and develops into understanding throughout the cycle. The items in the system are covered in the relevant sections throughout this HIAMP.

Figure 2. The generic asset management system



2. Current state of assets

2.1 Historical investment summary

Funding for the highway infrastructure is in the form of either capital or revenue and can come from a variety of sources.

Capital investment must be spent on acquiring assets or structural maintenance. Capital investment comes from the central government via the road maintenance grant and local transport grant as well as discretion grants such as the incentive fund scheme and the challenge fund; capital investment can also be raised from within the Council through prudential borrowing or raising capital receipts or by directing revenue funding to capital uses.

Revenue funding is typically spent on all other areas that support the operation of the highway infrastructure such as routine maintenance such as grass cutting and energy for street lighting. Revenue funding comes from the central government revenue support grant and local-raised revenue such as council tax and business rates.

2.1.1 Capital Maintenance

Capital maintenance expenditure is used to add to the value of a fixed asset. Highway works eligible for capital funding include activities that:

a. extend the life of an asset, such as reconstructive resurfacing or preventative treatment schemes
b. enable the construction of improved infrastructure, including the acquisition of land
c. replace an existing feature with an enhanced structure, such as drainage renewal schemes

The Department for Transport (DfT) provides a capital grant to support HIAMP delivery. Table 3 below shows the level of this grant funding from 2015/16 to 2020/21. This includes the basic highway maintenance formula funding and incentivised element and assumes that the County Council remains a level 3 assessment as a highway authority.

Being able to demonstrate the implementation of the national Code of Practice, Well Managed Highway Infrastructure is a key part of the assessment process for the incentive element of the funding.

	Examples of Schemes Funded	2015/16 (£000s)	2016/17 (£000s)	2017/18 (£000s)	2018/19 (£000s)	2019/20 (£000s)	2020/21 (£000s)
Highway Maintenance Capital Funding Formula	Footway and carriageway maintenance, bridges and other structures maintenance	20,076	18,405	17,848	16,154	16,154	16,154
Incentivised Funding Element of the above							
	Level 1		1,114	1,671	3,365	3,365	3,365
	Level 2		1,114	1,504	2,355	1,682	1,009
	Level 3		1,003	1,003	1,009	336	NIL
Total for Level 3 Authority		20,076	19,519	19,519	19,519	19,519	19,519
SCC Top Slice 5%		1003.8	920.25	892.4	807.7	807.7	807.7
Additional Top Slice						500	
Capital budget - footway and carriageway, bridges and other structures		19,072	18,599	18,627	18,711	18,211	18,711

Table 3 – DfT Highway Maintenance Capital Funding Formula and Incentive Fund Grant

The above has been supplemented by additional County Council investment which has been £5m in the current and previous two years, additional one-off funding from DfT such as the pothole action fund and third-party contributions from developers and others.

Capital grant funding from DfT is not ring fenced and it is at the Council's discretion how much it chooses to invest in highway infrastructure asset management provision. Currently 5% per annum is top sliced from the roads and bridges allocation to contribute to corporate capital projects. For 2019/20 an additional £500k is being top sliced to aid the MTFS savings.

2.1.2. Gross Highway Maintenance Budgets

Revenue expenditure on roads and bridges maintenance has reduced from around £11.6m in 2010-11 to £6.8m in 2018-19. Some of the previous revenue expenditure has now been capitalised which has reduced the capital funding available for other works such as preventative and structural maintenance schemes. Capital expenditure on maintenance works has reduced during the same period from £34.0m to £28.8m with the latter now including works previously met from revenue, with a consequent impact on funding for structural and preventative maintenance of roads and bridges.

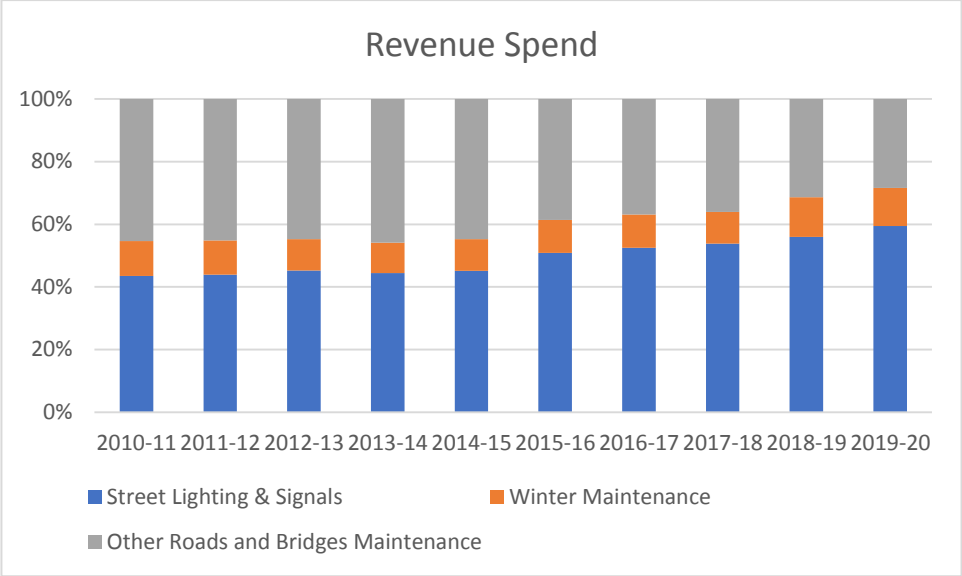


Chart 1a (above) – Percentage revenue spend on services

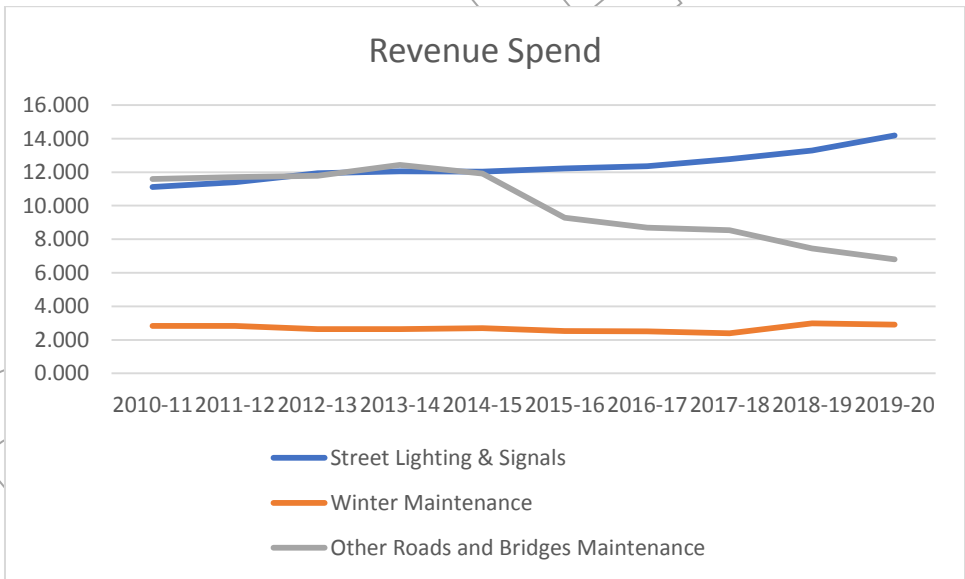


Chart 1b – Revenue spend by year on services

2.1.3. Revenue (routine) maintenance

Revenue expenditure covers day to day expenditure, such as works to maintain the value of a fixed asset. The overall revenue funding for the highway and infrastructure area is approximately £25.3m in 2019/20 annum and is used as follows:

a. PFI net £11.9m, this is after PFI grant of £1.5m, there is also a revenue budget for traffic signals and street lighting works £0.6m

b. £8.4m maintenance operations (includes £3m winter maintenance, £2.6m carriageway/footway repairs, £1.1m gullies cleansing, £1.3m grass cutting and weed spraying, £0.37m depot maintenance and operation).
c. £0.6m bridges (includes drainage, parapets, safety fencing)
d. £1.5m School Crossing Patrols
e. £2.3m staffing and other areas

2.2. Network Hierarchies

The national system of roads classification is intended to direct motorists towards the most suitable routes for reaching their destination. It does this by identifying roads that are best suited for traffic. In the UK, roads excluding motorways fall into the following four categories:

- A-roads
- B-roads
- Classified unnumbered – known unofficially as C-roads
- Unclassified – U-roads.

The national system of road classification does not necessarily reflect the local needs, priorities and actual use of each road in Staffordshire.

The Council has defined a local network hierarchy as recommended by the Code of Practice "Well Maintained Highway Infrastructure" and this is presented in Tables 5,6 and 7.

Road Classification is still used for the collection and presentation of carriageway condition data. Although this does not precisely reflect the road network hierarchy, it is required due to statutory reporting requirements.

The network hierarchy has been formed in order to most appropriately represent the style and use of roads in the county. The hierarchies in the Code of Practice have been used as a basis with the following key amendments. Such factors will include:

- character and volume of traffic;
- current usage and effect of proposed development works;
- routes to important local facilities and to the strategic network (for more information, please refer to the Winter Maintenance Plan);
- designation as a traffic sensitive route;
- accident and other risk assessment;
- potential for use as a diversion route;
- special characteristic of certain assets, e.g. historic structures;
- access to schools, hospitals and medical centres;
- vulnerable users or people with special needs, elderly people's homes etc; and ceremonial routes and special events.

Hierarchies are dynamic and will be regularly reviewed to reflect changes in network characteristics and functionality so that maintenance strategy reflects the current situation, rather than the use expected when the hierarchy was originally defined.

Where major maintenance, construction or other development signalling a change over the long term involves significant traffic diversion, or when congestion in one part of the network results in traffic shift to another part of the network, these changes shall be reflected in the hierarchy and subsequently in the maintenance and network management regimes.

The network hierarchy has been defined in order to optimise both the safety inspection regime but also the highway maintenance strategy. The County Council recognises that due to the function of the asset and customer expectation, different maintenance approaches can be taken to optimise resources. It would be expected that the surface of a high-speed strategic roads is maintained to a higher standard than a rural country lane; the user of the latter should drive at a lower speed as they would reasonably expect a lower ride quality, some surface imperfections and to encounter other road users in the centre of the carriageway. Likewise, pedestrians using a Defined Unmetalled Footpath would be expected to exercise more care than in Primary Walking Zones as the maintenance of these assets would be appropriate to their level of use.

Table 5 Carriageway Hierarchy

Hierarchy Description	**Definition**
Strategic Roads	Principle 'A' roads that form part of a strategic network at a regional level.
Main Distributor	Remaining 'A' roads.
Secondary Distributor	'B' roads, 'C' roads with a total traffic flow >1000 in a 12hr period.
Link Roads	Remaining 'C' roads, roads linking the main and secondary distributor network, 'D' & 'U' roads with exceptionally high traffic flow, industrial estate service roads, residential distributor roads with considerable H.C.V. flow.
Local Access Roads	Remaining 'D' & 'U' roads i.e. residential loop roads, housing estate roads, residential cul-de-sacs, rear access roads, lay-bys, unsurfaced and minor ways.

Table 6 Footway Hierarchy

Hierarchy Description	Definition
Primary Walking Route	City/Town centres, busy urban shopping and business centres with high pedestrian volumes.
Secondary Walking Route	Schools, local shopping precincts, industrial outlets.
Link Footways	Strategic footways in urban areas connecting local access footways to higher category footways (i.e. footways leading to City/Town centres). Footways leading to large employment establishments.
Local Access Footways	Non-strategic housing estate footways, cul-de-sacs, divergent footways & rural footways.

Assignment of a footway to a category takes the following issues into consideration:

- pedestrian volume
- designation as a traffic sensitive pedestrian route
- current usage and proposed usage
- contribution to the quality of public space and streetscene
- age and distribution of the population, proximity of schools or other establishments attracting higher than normal numbers of pedestrians
- accident and other risk assessment; and
- character and traffic use of adjoining carriageway.

Some Public Rights of Way (PROW) may be metalled and within or on the fringe of urban areas. To recognise users' requirements for consistency, these are considered for maintenance consistent with a similar footway and be incorporated in the footway hierarchy, irrespective of their designation.

Table 7 Cycleway Hierarchy

Hierarchy Description	Definition
Cycle Way (part of the carriageway)	Cycle ways forming part of the carriageway for general use; cyclists share the space with other highways users with some cycle provision aided by the placement of signage to promote the use and indicate to other road users the presence of cyclists.
Cycle Way (remote from the	A highway route for cyclists that is not contiguous with the carriageway; it will be an undesignated space with some cycle provision, for example

carriageway)	a small amount of signage, typically a shared cycle / pedestrian path either segregated by a while line or other physical segregation; or equally may be unsegregated. The cycle tracks will be associated with low usage and predominantly, but not solely, used for leisure rather than commuter links.
Cycle Trails	Cycle trails will follow routes though open space and will not necessarily be the responsibility of the Highway Authority but maintained by the authority under local agreements, other powers or duties. The cycle tracks will be associated with low usage and used for leisure rather than commuter links.

Cycle Routes will be maintained and inspected on the same level as the linking footway hierarchy or the adjacent carriageway hierarchy. The highest hierarchy will always be chosen, as part of the risk-based approach.

The limited amount of cycleway asset not linked with a footway asset or an adjacent carriageway asset will be categorised based on use within the Asset management database and maintained and/or inspected accordingly.

2.3. Condition Assessment and Asset Performance

The performance of our assets is assessed using a range of inspections. Each type of inspection has a particular function or objective that collectively ensures that the Council understands the level of performance that the asset is providing.

2.3.1. Safety Inspections

Safety inspections are carried out to identify defects on the highway assets which may present a hazard to the highway user. They are a visual survey which is carried out by a competent highway surveyor (either from a slow moving vehicle, on foot or on a bike) who identifies the hazard, assesses the risk and the nature and priority of the response. Safety inspections are routinely conducted on carriageways, footways and cycleways; however, the scope of the inspection can include any asset which is presenting a hazard.

The Council undertakes safety inspections of the highway according to a risk-based approach. The frequency of inspection and the response to defects is determined by the risk presented to highway users. The method for undertaking safety inspections and dealing with defects is set out in our safety inspection operating procedure.

2.3.2. Service Inspections

Service inspections are undertaken to assess whether the asset is providing service. The most common inspections of this type are street works inspections which allow the Council to take enforcement action under the Traffic Management Act 2004. Other types of service inspections

can include night scouting to determine the correct functioning of highway lighting and retro-reflectometry surveys to check the night-time performance of lining and signs.

2.3.3 Condition Surveys

Condition surveys are undertaken to understand the current performance of the asset and identify future asset management risks. The approach taken will depend on the type of asset and the function upon which information about current and future performance is being sought. Currently the approach to condition surveys is as shown in Table 8 which may be subject to change as asset management approach.

Table 8. Summary of asset condition surveys

Asset type	Survey Reference	Scope	Performance assessed	Performance derived
Carriageways	SCANNER	A, B and C class roads	Surface condition	Structural condition
			Ride quality	
	CVI	Unclassified Roads	Surface condition	Structural condition
	Grip Tester	A & B Class roads plus other secondary distributor roads	Surface friction	-
Footways	FNS	Footways	Surface condition	Structural condition
Structures	CSS BCI	All bridge spans >= 1.5m	Structural and functional condition	-
Lighting	CoP	All columns beyond action age	Risk of structural failure	-

Table 8 provides a summary of condition inspections for each type of asset; further detail on the survey types is given below:

SCANNER A traffic speed survey which measures many properties of the road surface including texture, rutting, roughness and cracking.

Grip Tester A traffic speed survey that measures the friction properties of the surface using a braked wheel towed behind the survey vehicle.

FNS Footway Network Survey is a walked visual inspection that grades the deterioration and extent of deterioration from ‘as-new’ to ‘structurally impaired’.

BCI	A system developed by the County Surveyors Society (now ADEPT) to generate a Bridge Condition Indicator based on the condition of individual elements of the bridge.
CoP	As defined in the current Code of Practice "Well Maintained Highway Infrastructure".

2.4 Condition of our assets

The latest set of condition indicators for road condition (carriageway) relate to surveys carried out on the network in 2018. The condition survey results are categorised as 'red', 'amber' and 'green'. Roads classified as red are described as "should have been considered for maintenance" and are often beyond repair using preventative maintenance techniques such as surface dressing and more likely to require resurfacing or reconstruction. Roads requiring major maintenance i.e. structural maintenance will continue to deteriorate and lead to an increasing number of safety defects that places additional demands on the reactive maintenance service.

2.4.1. Carriageway

Charts 37a to 37d below show how the condition of the network from carriageway condition surveys from 2010 onwards. The five-year period from 2009/10 to 2013-14 saw an additional investment of £50m primarily in carriageway resurfacing and maintenance.

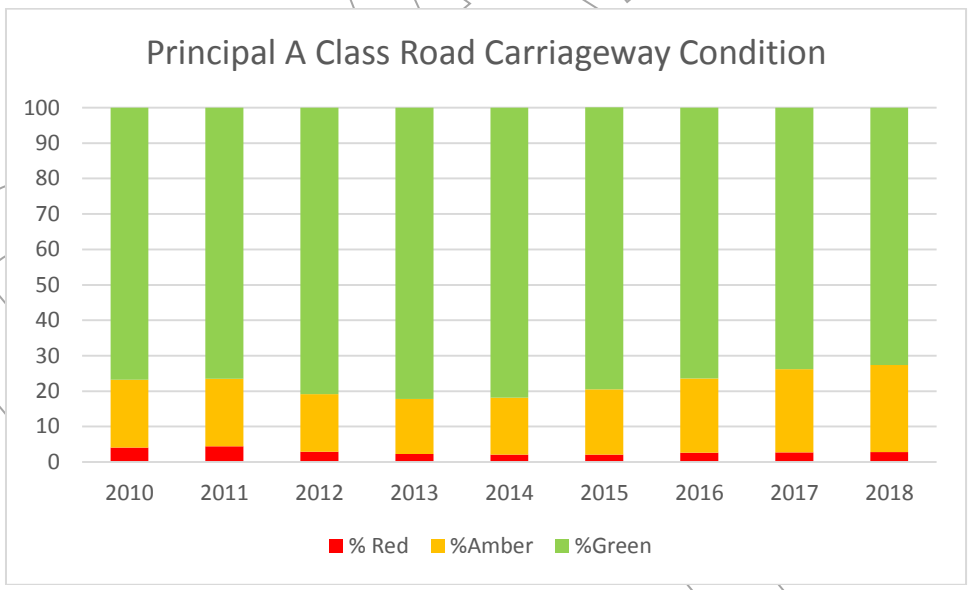


Chart 2a (above) – A Class Road Carriageway Condition

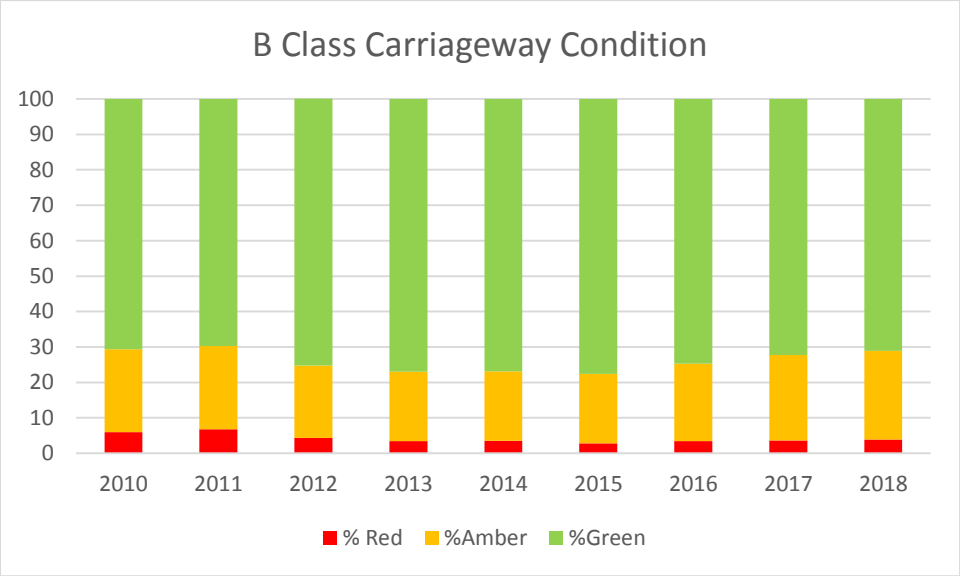


Chart 2b (above) – B Class Road Carriageway Condition

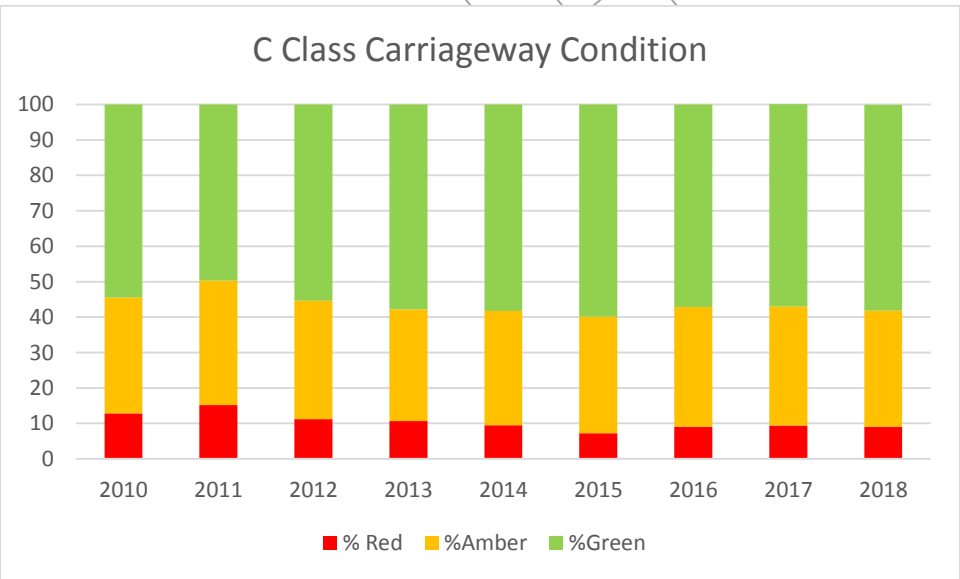


Chart 2c (above) – C Class Road Carriageway Condition

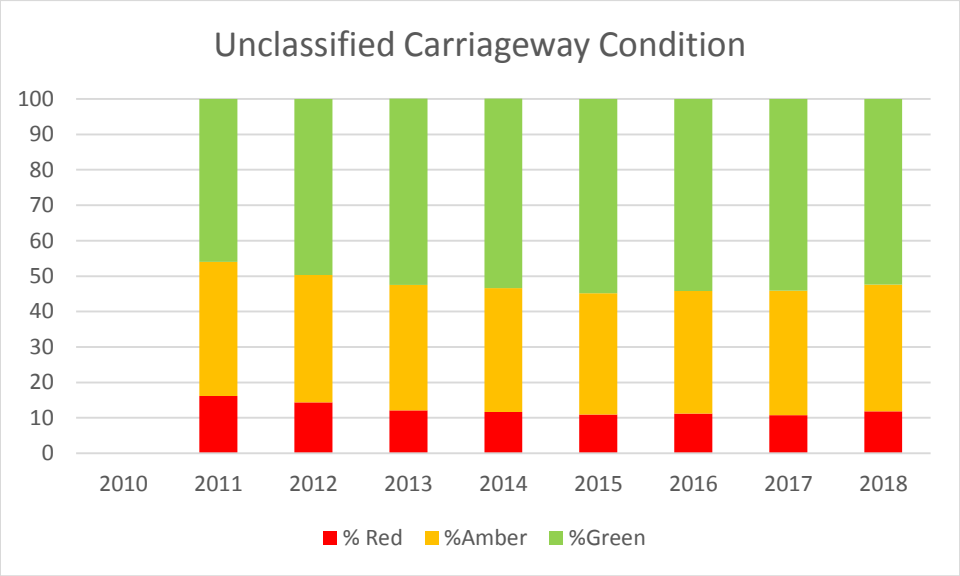


Chart 2d (above) – Unclassified Road Carriageway Condition

2.4.2. Structures

The County Council is responsible for over 1,200 bridges, structures and culverts. These include bridges, sign gantries, culverts, embankments, retaining walls and subways. The 2018 valuation for the gross replacement cost of this asset calculated using a national model developed jointly by partners including DfT, CIPFA, and the UK Bridges Board is £1.3 billion with a yearly depreciation of £14m.

Excluding additional funding secured for St. Peters Bridge and Burton Bridge through the DfT Challenge Fund for 2017/18 and 2018/19, current spending on structures is on average £2.3m per year. Table 44 and Chart 44 below show the historic and predicted (predicted*) future spend on structures including both capital and revenue. At £2.3m total investment per annum, this is significantly below the rate of yearly depreciation of £14m.

											*predicted						
£m	2009/10	2010/11	2011/12	2012/13	2013/14	2014/15	2015/16	2016/17	2017/18	2018/19	2019/20	2020/21*	2021/22*	2022/23*	2023/24*	2024/25*	2025/26*
Capital	3.0	5.0	3.6	1.6	1.6	1.6	1.3	1.4	1.3	1.3	1.8	1.3	1.3	1.3	1.3	1.3	1.3
Revenue	0.9	0.9	0.9	0.9	0.9	0.9	1.0	1.0	1.0	1.0	0.6	1.0	1.0	1.0	1.0	1.0	1.0
Challenge Fund	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.5	2.5							
Total £m	3.9	5.9	4.5	2.5	2.5	2.5	2.3	2.4	4.8	4.8	2.4	2.3	2.3	2.3	2.3	2.3	2.3
Total £m excl. Challenge Fund	3.9	5.9	4.5	2.5	2.5	2.5	2.3	2.4	2.3	2.3	2.4	2.3	2.3	2.3	2.3	2.3	2.3

Capital and Revenue Budgets for Structures £m (above)

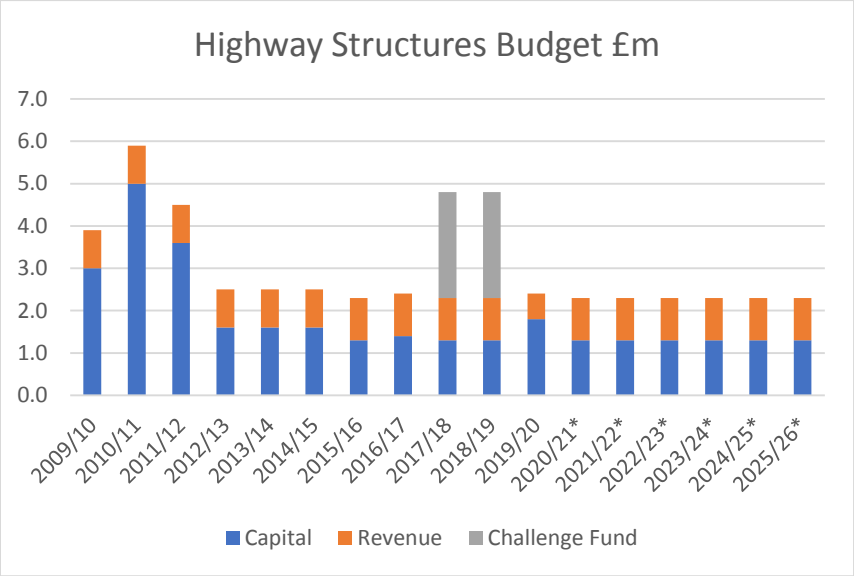


Chart 3 (above) – Capital and Revenue Budgets for Structures £m

The condition of bridges 5m or more in length is calculated annually based on inspections to generate a condition score for each individual bridge and overall the Bridge Stock Condition Index (BSCI). The BSCI is scored out of 100 and for structures in Staffordshire this score is shown below in Table 45 and Chart 45. In 2009/10 the average BSCI average score was 87.8, by 2025/26, based on current spend levels at 2019/20 the average score is predicted to reduce to 73.5. The average score is based on overall condition, the critical score is based on key structural such as main beams, columns and piers and is predicted to decline from 74.6 in 2019/20 to 67.2 in 2025/26.

£m	2009/10	2010/11	2011/12	2012/13	2013/14	2014/15	2015/16	2016/17	2017/18	2018/19	2019/20*	2020/21*	2021/22*	2022/23*	2023/24*	2024/25*	2025/26*
BCIS (ave)	87.8	87.7	87.3	87.2	86.7	86.6	86.3	86.4	85.0	84.4	83.0	81.5	80.7	79.4	78.1	75.8	73.5
BCIS (crit)	78.8	78.3	77.4	77.3	76.5	73.3	75.9	75.9	75.7	75.3	74.6	73.7	72.3	71.6	70.7	69.4	67.2

Bridge Stock Condition Indicators (above)

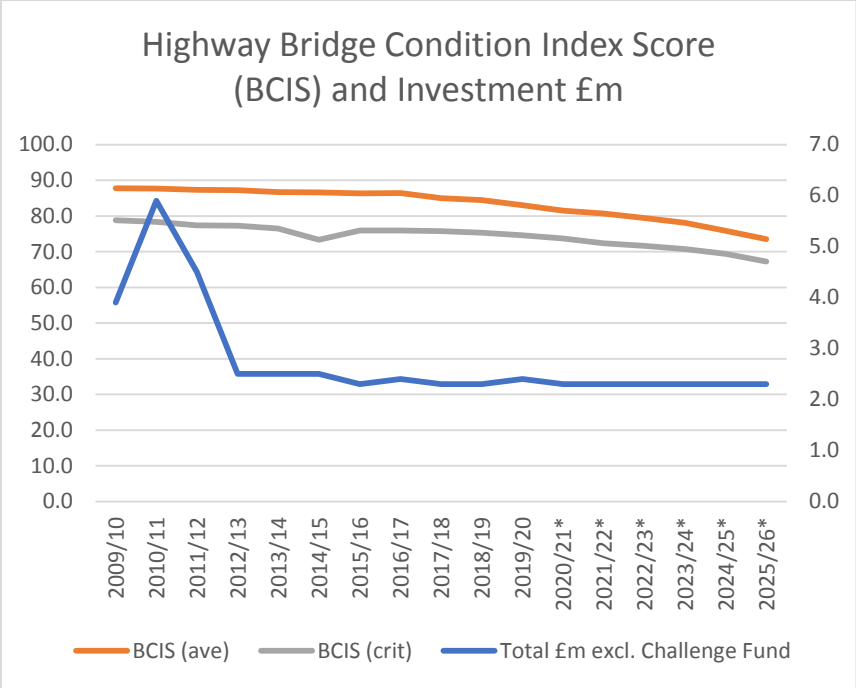


Chart 4 (above) – Bridge Condition Index Score and Budget £m

3. Service Aspirations

3.1 Stakeholder expectations

The Council monitors stakeholder expectations using the National Highways and Transport (NHT) customer satisfaction survey and through *ad-hoc* consultation exercises as shown in Figure 3.

The County Council participates in the NHT customer satisfaction survey each year and the outcomes of this survey are used to inform asset management planning. As well as the levels of satisfaction that are also reported levels of service, of particular relevance to this plan in the context of dealing with the challenge set out in the MTFS, is the levels of service which are not acceptable to reduce.

Winter service is important to stakeholders and this is reflected in the priorities from both sources of feedback. The maintenance of roads, highway drainage and pavements were similarly highlighted in both sources of feedback indicating a strong and consistent expectation about the service to be provided on these assets.

These priorities are acknowledged in this HIAMP and will be considered as the asset management approach is developed.

3.2 Levels of service

The County Council's asset management goals are to:

- Ensure the optimal use and direction of the County Council's resources in maintaining the county's highway assets for the benefit of current and future stakeholders

- Take account of the safety of stakeholders, customer expectations, network hierarchy, levels of use, network condition, environmental impact and the available resources to prioritise maintenance interventions and treatment choices.

3.3 Life cycle planning

In line with current national guidance and good practice, Staffordshire is using a simplified network-based approach to life-cycling but developing a more section-based lifecycle approach to managing its carriageway, footway and structures maintenance activities. Considering how long specific maintenance treatments last, the relative cost of treatments and the levels of service to be provided are essential pre-requisites to good asset management.

A key component is maximising the life of an asset whilst minimising the budget and resource implications. The asset lifecycle plans consider the whole life costs using and the investment required to maintain the asset over the long term, i.e. 15 – 20 years for most highway assets. However, this will be over a much longer term for Highway Structures, dependent on the nature of the structure.

This approach enables planned maintenance to be carried out on the network at the right time in order to achieve value for money, delivering the agreed Levels of Service and achieving the performance monitoring objectives, providing opportunities for continuous improvement.

3.4 Works Programme

By developing financial models associated with lifecycle planning, this Strategy will enable a 1 – 3, 5, 10 and 15 year forward works 'strategic' budget to be identified for all transport assets.

It will also provide clear indications as to the nature of planned maintenance required to maintain the network by considering asset condition and lifecycle costs against the provision of the desired levels of service, and ultimately, deliver the budget and works programme.

The Forward Works Plan will provide a work bank that can be prioritised in the Highways Service Plan within the available budget. The Forward Works Plan will show the collective works backlog, it shall make clear what level of funding is required to reduce the backlog and provide the agreed Levels of Service. Thus, making a better case for additional funding to maintain this vital asset.

The prioritisation of the schemes identified within the forward programme will be determined annually by available budget, condition and risk through the Operation Commissioning Board and consultation with Elected Members, and these will be the basis of the Annual Highway Maintenance Service Plan.

4. Delivery Plan

4.1 Engagement

There are over 6,000 miles of highway network in Staffordshire that are managed by the County Council, as well as pavements, verges, drainage, and large numbers of street lights, traffic signals and structures such as bridges.

We need to ensure that residents, motorists and businesses are informed about work on our highways, our services, and any changes to them. Our communications need to be informative, timely and easily accessible.

We are developing a Communications Strategy to set out how we are going to do this. Through our communications, we aim to inform the public and stakeholders about road works, highway activities and issues, as well as changes to our asset management and maintenance approach. We will also encourage people to access "self-service" information through information available on our website.

This Communication Strategy will consist of a detailed Communications Plan document which is available online and the key information which is set out below.

Aims

The aim of our communications is to:

- Inform the public about physical road works, operational highways issues (inc defect repairs, winter maintenance etc) and value-for-money highways and transport activities in a timely manner.
- Communicate proposed changes to highways asset management in Staffordshire, encourage public engagement through our communications and raise awareness about changes if these are adopted.
- Encourage people to make the best use of reporting channels – eg 'self-serve' via our website.
- Ensure the public is aware of funding bids awarded to the council to help maintain and enhance the local transport network.

Key Messages

Our key messages regarding Asset Management that will be communicated are:

- We will prioritise high risk repairs when responding to highway defects. This may mean other repairs could take longer than before, but we will be clear about timescales.
- We will focus on planned maintenance work to help slow down the deterioration of roads.
- Preventative work will be carried out on a "risk based" approach and determined on how roads are "categorised" in a new classification of highways.
- We are exploring new, and more efficient ways of working. This includes working with Parish Councils to manage/deliver some aspects of Highways Maintenance (e.g.

environmental works) and making use of emerging technology (e.g. for a targeted approach to gulley cleansing) to deliver cost savings.
- Keeping winter services, such as gritting, at current service levels.

More generally, we will communicate that we are working hard to maintain the standard of our roads, although increased budget pressures mean we will have to focus on maintenance, and larger schemes that help support growth/economy. We will provide details of any major road schemes or highway related consultations.

We will highlight action we are taking to keep the network up and running such as emergency repairs, closures due to extreme weather, any planned maintenance and gritting. We will also provide winter driving advice and let people know how they can find out about services and maintenance work (eg grass cutting schedules) online, together with consultations on future schemes.

Key Groups/Stakeholders

We will seek to communicate with a wide range of people and organisations that have a stake in Staffordshire's road network. This includes, but is not limited to:

- Elected Members
- Residents
- Road Users (Pedestrians, Cyclists, Horse Riders, Bus Users, Disabled Users, Motorists)
- Businesses
- Representative groups
- Neighbouring Local Authorities
- Staffordshire County Council staff
- Emergency Services
- District/Borough Councils

Communication methods used

We have a number of communication methods available, including:

- Social media (Twitter & Facebook page)
- Press releases
- Traditional media and digital
- Local radio stations
- Staffordshire Council resident's newsletter
- Parish Councils' Highways Newsletter
- Stakeholder Workshops
- Council Website
- Local TV/News
- Door-to-door letters / leaflets
- Public Meetings / Exhibitions

- Partners' Channels

Monitoring Review and evaluation

It's important that we regularly monitor and review the effectiveness of our communications. Key indicators of audience awareness and the effectiveness of our communications will be:

- Media Coverage (Volume, Tone, Positive/Negative)
- Social Media Coverage
- Website Use
- Use of self-serve functions via the SCC website
- Level of response to consultations
- Satisfaction levels from surveys
- Queries/Feedback from members of the public

We will formally review and evaluate our communication activities annually. This will include a review of the indicators above where appropriate, together with service user feedback and management discussions.

Further Details

Further details can be found as part of the Asset Management Communications Strategy can be found at LINK TBC. This contains a full breakdown of our communication plans including timelines of planned communication work.

4.2 Customer Feedback

It is vital that stakeholders can contact the County Council to request service to deal with current issues and to register priorities for future work. Our customer feedback process is set out in Figure 3. Two types of feedback have been identified. Request is a current or imminent issue which the customer wishes to be resolved; resolution of this issue may be achieved by carrying out work or providing adequate information to the customer about the result of their request. A priority is more strategic information. Infrastructure assets must deliver value for the customer and therefore these links are essential to understand customer needs and maintain relevant knowledge to inform this HIAMP.

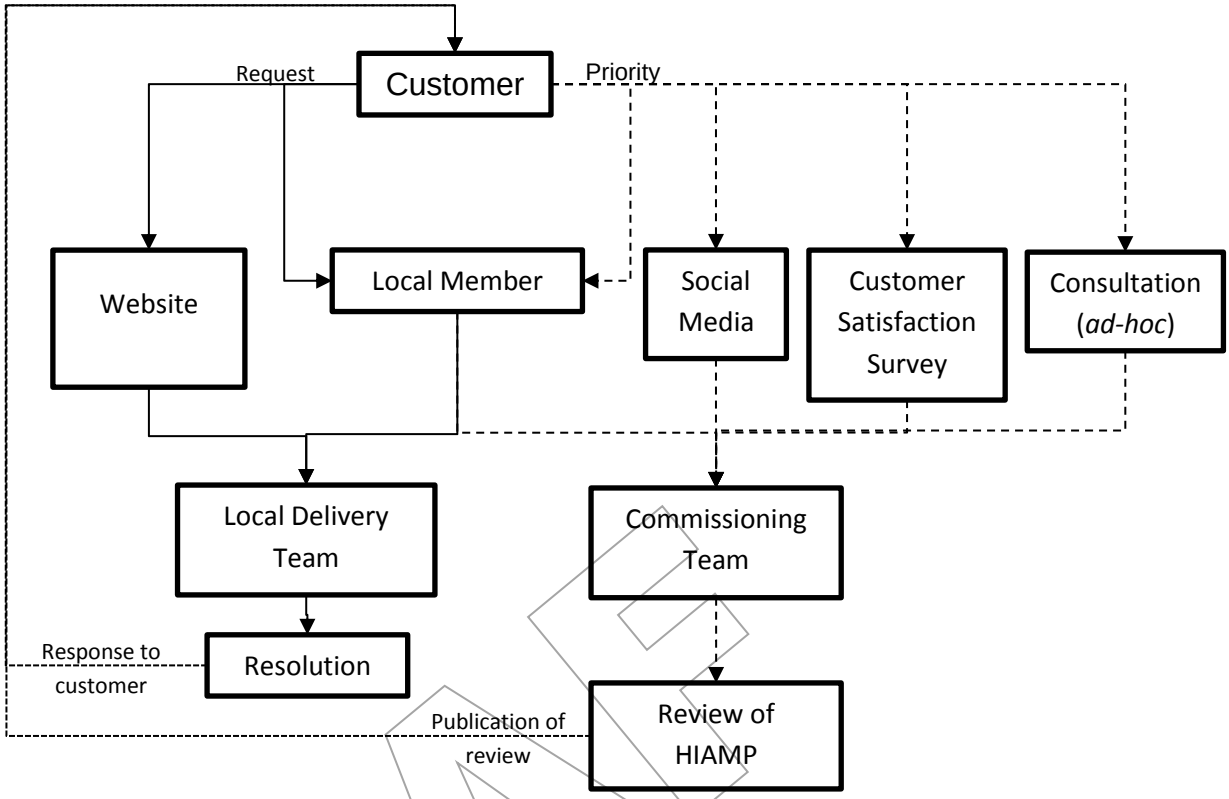


Figure 3: Customer feedback

In the diagram above, a request could be simple service or a petition. A customer may be an individual, an organisation or a collective.

4.3. Best Practice – Collaboration and Knowledge Sharing

The Midlands Highway Alliance, the Midlands Service Improvement Group is a collaborative alliance for adjacent/peer authorities to share knowledge and good practice. Staffordshire was one of the founding members and remains active in leading in innovation. Many of Staffordshire's processes that ensure the implementation of this Plan, have been developed in conjunction with other local authorities within the MHA/MSIG Alliance. The County Council will also be enhanced by benchmarking our data with other similar authorities through the Alliance and the NHT customer satisfaction survey/CQC Efficiency Network.

4.4 Data Management

Highway asset data is managed by the Highway Data team. The asset registers exist in our Integrated Highway Management System, Pavement Management System or Geographical Information System.

The Council has a robust data management regime and will be updating the data management plan. The data management plan defines the key aspects of the data.

A data hierarchy has been adopted which uses three levels:

- Asset Group e.g. street lighting
- Asset Type e.g. Heritage column
- Component. e.g. Luminaire

Storage requirements are defined by activity and asset group as well as the team responsible for management of the data.

A high-level gap analysis will be undertaken on the Council asset data to define key improvement actions in the data management plan:

- Complete an exhaustive review into the existence, quality, currency and use of data and information relating to highway asset management.
- Help to define a specification for all datasets relating to highway asset management, including defined protocols for data management, review and retention.
- Review the suitability of the proposed asset groupings, data storage systems and data management roles and responsibilities following the above actions.

4.5 Principles of a risk-based approach

Risk is an intrinsic element of the management of highway infrastructure assets, it cannot be removed entirely but it must be managed. To optimise the value of the available resources, risk must be understood in order to make the best decisions.

The approach to understanding risk is set out in this plan as it applies to all aspects of how we will manage our assets and includes strategic, tactical and operational risks. The key actions of this risk-based approach are:

- Understanding our statutory duties and ensuring that these are fulfilled.
- Identifying the value and criticality of the County Council's assets and operations to fulfil the asset management objectives and achieving the levels of service.
- Gathering sufficient and appropriate information (evidence) to support risk-based decisions.
- Ensuring staff have sufficient knowledge and competency to make risk-based decisions.
- Identifying and prioritising risks associated with the assets using systems that are consistent with the County Council's corporate approach to risk management.
- Implementing appropriate controls.
- Documenting risk-based decisions ensuring that the whole approach is transparent.
- Applying the risk-based approach equitably for all stakeholders and in all locations.
- Communicating the approach and the outcomes of where it is applied to stakeholders.

Well Managed Highway Infrastructure states that "a risk-based approach should be adopted for all aspects of highway infrastructure maintenance". This approach should be in accordance

with local needs (including safety), priorities and affordability. It is acknowledged that for each aspect of highway infrastructure maintenance, there will be a range of risk types which need to be considered. The County Council will use a framework that considers the following types of risk when adopting a risk-based approach:

- Safety of all highway users
- Fulfilling our legal duties
- Financial loss for the County Council
- Impacts on the economy
- Impacts on, and generated by, the environment
- Accessibility or availability
- Equitability
- Reputation and customer satisfaction

This HIAMP sets in place the over-arching approach which will be deployed as operational procedures. Examples are how this approach will be used are:

- Developing a resilient network which allows improved decision making to ensure that economic activity and access to key services are maintained. Using this network to better understand the value of our assets.
- Updating the network hierarchy to enable the County Council to undertake inspections at appropriate frequencies and respond to defects within appropriate timescales.
- Defining appropriate cleansing regimes for drainage using improved understanding of the current performance of the assets.

We will develop and maintain our operational procedures throughout the life of this plan.

4.6 Developing a works programme

There are many stages to developing a works programme; this includes identifying work, prioritisation the work identified, developing the work in a forward plan and finally the annual programme of work as shown in Figure 2.

Identifying work will involve the consideration of current condition of the asset against the required performance and consideration of risk. Local intelligence is an important part of this process, not only to inform about constraints but also to provide engineering solutions which takes into account locally known risks. Prioritisation of the work ensures that for the resources available the County Council generates the maximum value. The precise process will be tailored to the individual asset groups according to the strategies set out in the life cycle plans but the resources and delivery are considered together as in integrated programme of work. Operating procedures formally set out the methods for identifying and prioritising work.

Programmes of work are essential to deliver this asset management plan. The benefits of a works programme are:

- Reducing risk by planning ahead, hazards which will affect the delivery work can be identified and actions taken to mitigate risk.

- Increasing efficiency by enabling multiple work types to be schedule in an optimum fashion and enabling the supply chain to provide the optimum solution.
- Increasing transparency by communicating the programme to stakeholders enabling them to see the process of delivery and improve stakeholder satisfaction.

The County Council aspires to produce a three-year integrated programme of work in line with asset maintenance strategies using a risk-based approach that is based on available condition data and intelligence of reactive work history, local concerns and engineering experience. The work is prioritised to achieve asset outcomes as defined in the levels of service.

The programme of work is split into an annual works programme and a forward plan of work.

The annual works programme is defined for the forthcoming financial year. Schemes in this list will be fully developed and a schedule for delivery can be accurately defined based on the actual funding available.

The forward plan of work is defined for Years 2, 3 and beyond. This programme is comprised of schemes that are being developed through the design and procurement process. This stage of the programme provides the opportunity to consult with stakeholders and the supply chain. Initially the wider programme will be formed of candidate schemes which are the County Council's earliest intelligence or aspirations for work that is required. The programme will be continually revised and refined until such point that it becomes the works programme.

The annual works programme will be published on the County Council's website.

4.7 Investment aspirations

Each of the asset life cycle plans present the future budgets with a forecast of asset condition where available. The asset management approach set out in this plan requires that the demand for funding across all key assets is considered as one. Considering each of the life cycle plans the following observations can be formed:

- The condition of carriageways is forecast to decline over the period of this plan at the expected levels of funding. The carriageway asset represents the greatest value infrastructure asset as shown in Table 2; this presents a significant risk for the asset as a whole.
- The condition of other assets such as footways and traffic signals are also forecast to decline.

Overall the current budget is insufficient to maintain the asset in its current condition. The majority of the deficit is attributable to the carriageway asset. If appropriate levels of investment in the asset are not made, the levels of service and other outcomes of this plan are at risk. The asset management approach will continue to be developed to update these funding aspirations and the Council will work to identify additional sources of funding to address any deficiencies or to revise its long-term service aspirations.

5. Risks

5.1 Managing risk

The analysis of risk applies to asset management from a variety of different perspectives. These range from the broad strategic and corporate risks, such as the loss of the asset or a significant change in the corporate budget, to those affecting discrete processes or assets such as the risk that an individual defect might present to stakeholders.

Risk is present throughout asset management because of the extensive treatment options possible with decisions, often made without full understanding of the asset, how it will perform or the consequences of failure. Combined with a variety of uncertain external factors influencing the performance of the network, including weather and changes in budget provision, risk is ever present.

It is not possible to eliminate all risk from asset management. This means that while some mitigation is possible, the usual approach will be to understand the degree of risk and its possible consequences. This then needs to be balanced against the cost of reducing or eliminating the risk as well as the benefits of accommodating the risk.

Risks affecting our strategic objectives are managed across different levels of the organisation involving monthly review and assessment. The likelihood and severity are factored to provide a score which is subsequently converted to a traffic light Red, Amber, Green RAG rating. Significant strategic or corporate risks are reported through the management chain and consideration given to further mitigation.

More specific risks associated with the maintenance of highway assets will be assessed against an understanding of the strategic importance of the asset or assets concerned. Fundamental to this will include consideration of the local road hierarchy and our Resilient Network. For example, an identical pothole on two different carriageways, both carrying the same volume of traffic would have the same impact if a vehicle collides with it. However, it will have a higher priority on one of the carriageways if it is part of a link with more strategic importance.

The County Council maintains and reviews a number of risk registers in a multi-level risk management framework as Shown in Figure 4.

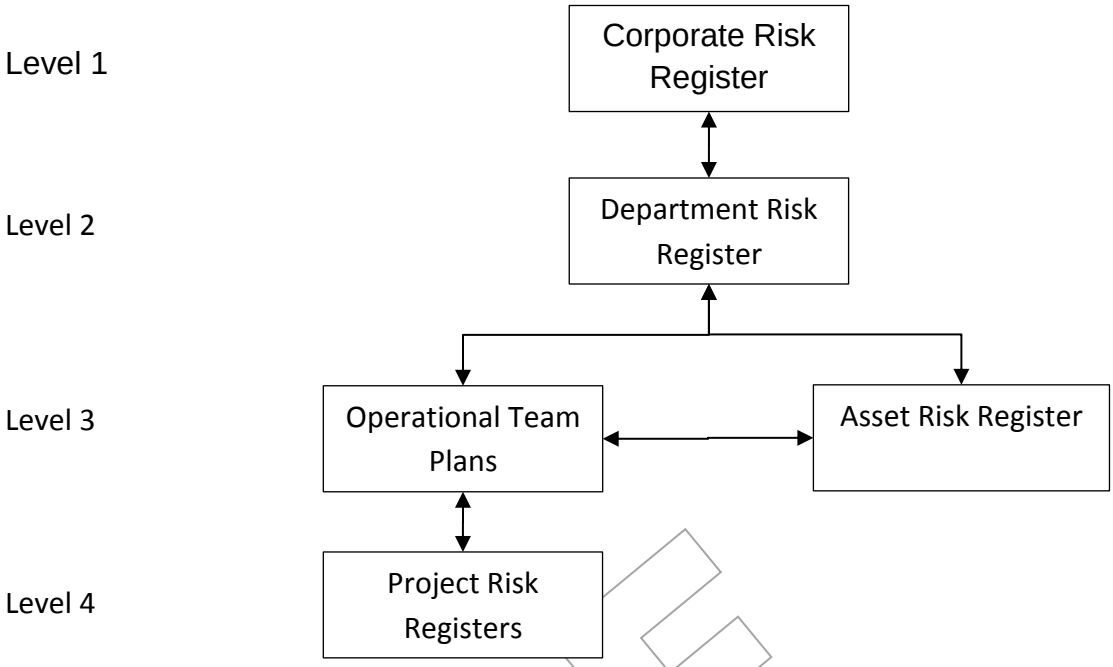


Figure 4. The risk management framework

Risks are captured and managed in Levels 3 and 4. These risks can be escalated to the department risk register and subsequently can be escalated to the corporate risk register as required. Some risks will exist in both the operational team plans and the asset risk register.

The asset risk register facilitates the management across all asset groups. It includes:

- Assets at risk that will affect the overall delivery of the plan.
- Assets at risk that will affect the resilience of the highway network.

The register quantifies and assessing the risk together with the proposed action and investment to mitigate the risk. The asset risk register is one of the inputs to the formation of the integrated works programme and it will be reviewed at least annually.

5.2 Climate change and the environment

In recent years, several extreme weather events have had a significant impact on transport infrastructure in the UK. It is accepted that these events are becoming more frequent and this is likely due to climate change. In managing the highway, the County Council needs to adapt its approach to consider climate change in the decisions it make.

Climate change is not a local phenomenon but the activities of the County Council will make a contribution to this threat. The County Council will take account of the environmental impact of its maintenance treatments and services and where feasible, either reduce or mitigate these impacts. The County Council will also seek to maximise the serviceable life of assets and therefore reduce the frequency of asset renewals. Considerations shall include:

- Deploying of preventative treatment strategies, where viable, to retard deterioration in the asset.
- Using recycled materials or the use of low temperature asphalt to minimise carbon emissions.
- Collaborating with the supply chain to reduce emissions arising from the transport of materials.
- Scheduling work to minimise congestion as a result of maintenance interventions.

The County Council has adopted an emissions reduction target of 80% by 2050, from a 1990 baseline. We have also adopted a short-term target to reduce our emissions by an average of 3% each year.

5.3 Network Resilience

The County Council must also consider the resilience of the highway network. It will do this by:

- Defining a resilient network which focuses resources on sustaining a functioning network during extreme weather, major incidents and other disruptions.
- Taking a risk-based approach to the way the service is delivered which accounts for risk to, and generated by, the environment.
- Recognising the importance of winter service to highway users

The County Council currently treat the carriageway network on a precautionary basis in advance of any forecast of ice or snow. Footways are only treated when there is prolonged snow or ice. This service is very highly valued by stakeholders. An annual review of winter service routes will continue but no any overall reduction in service level is anticipated.

5.4 Network Growth and Demand

The highway asset is constantly evolving to support the needs of the people of Staffordshire; assets are added and removed as a result of highway schemes commissioned by Staffordshire County Council and private developers. The evolution of the asset is heavily influenced by the economic activity of Staffordshire. It is anticipated that the asset will increase in length by 10km per annum.

Alongside the anticipated growth in asset size it is envisaged that overall network demand will increase by 7% between 2016 and 2021

5.5 Competences and Training

The County Council recognises that competencies and training are critical to the delivery of this plan. Effective management of the highway network requires professional well-trained staff. A competency framework for all key asset management staff is used to identify the individual competency requirements. All key staff will be assessed against this framework as part of the annual review process and staff development requirements are captured at a team level.

6. Governance

Asset management of highway infrastructure in Staffordshire will continue to develop following publication of this plan. The HIAMP document and its supporting information should evolve as learning is gathered.

The delivery of this HIAMP will be overseen by the Operation Commissioning Board. A report on progress and recommendations for changes to the HIAMP will be provided to the Executive. It is anticipated that the review will be undertaken at least every two years.

7. Appendix 1 – Delivery Framework

The HIAM Policy, Strategy and Plan explain the high-level principles adopted to deliver effective highway infrastructure asset management

The documents listed in the table below promote the asset management framework and are the suite of detailed information that support these principles.

Document	Review/Delivery Status
Highway Infrastructure Asset Management Policy	2019
Highway Infrastructure Asset Management Strategy	2019
Highway Infrastructure Asset Management Plan	2019
Resilient Network & Maintenance Hierarchy	2019
Asset Data Management Policy	2020
Asset Inventory Policy	2020
Asset Condition & Service Inspection Policy	2020
Highway Safety Inspection Manual	2020
Lifecycle Planning	2021
Asset Prioritisation Plan	2021
Forward Works Plan	2020
Planned Maintenance Policy	2020
Reactive Maintenance Policy	2020
Asset Risk Policy	2020
Asset Risk Register	2020
Service Levels & Performance	2021
Asset Valuation Policy	2020
Skid Resistance Policy	2019
High Friction Surfacing Policy	2020
Stainability Policy	2021
Flood Risk Policy	2021
The Management of Trees Policy	2020
The Maintenance of Grass and Weed Control Policy	2021
Speed Limit Policy	2021
Winter Service Policy	2020
Design Guide for Maintenance	2022
Decommissioning Policy	2022
Competency Framework	2020
Communication Strategy	2020