Balfour Beatty

Herefordshire Council

HEREFORDSHIRE PUBLIC REALM CONTRACT

Transport Asset Management Plan

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Working for Herefordshire

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Executive Summary

This Transport Asset Management Plan (TAMP) details the way that highway maintenance is delivered in Herefordshire. Highway assets are by far the most valuable of the all assets the Council is responsible for; in 2015 these were value as having a gross replacement cost of £5.495 billion.

Utilising an asset management approach enables organisations to realise the best value from their assets. This TAMP details how we have and will continue to establish and deliver a best value highway service for Herefordshire. Best value for highways is established from the objectives and policies detailed in the Council's Corporate Strategy and Local Transport Plan, as well as user priorities from annual surveys and knowledge gained via locality working. The plan details how levels of service for the different assets are established based on this information, including how key performance indicators are developed and measured so that targets are achieved.

This document also sets out the approach that will be utilised for the lifecycle planning of major assets, such as carriageways. We have made use of the 'whole life' approach to asset management. This means looking ahead at how the asset is likely to deteriorate and deciding what might be the best treatments to deliver, and when, over the life of the asset and if done well this approach will provide value for money and a good state of repair in the long term.

To enable informed decision making, having knowledge of our assets and their condition is vital and this plan details how this will be achieved. Our knowledge of our assets is detailed within this document, as well as approaches to managing and improving this information. The TAMP and asset Lifecycle Plans detail how the established priorities are applied to specific assets in determining maintenance decisions and prioritisation.

Like all authorities, Herefordshire is facing significant budgetary pressures. This TAMP enables informed decision making and a framework for establishing the affordable and best value levels of service that can be achieved.

This plan documents the framework that will be used to deliver highway maintenance, it includes medium to long term asset maintenance strategies and details of how maintenance programmes will be developed. Programmes of works that will be undertaken in the short term are identified in Annual Plans. Together these plans will ensure that the Council's objectives are met and the highway continues to make a highly valued contribution to our communities and economy.

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Abbreviations and Acronyms

ADEPT	Association of Directors of Environment, Economy, Planning and Transport
CCS	County Surveyors Society
DFT	Department for Transport
HC	Herefordshire Council
HMEP	Highways Maintenance Efficiency Programme
LA	Local Authority
LTP	Local Transport Plan
MSIG	Midlands Service Improvement Group
PI	Performance Indicator
TAMP	Transport Asset Management Plan
WGA	Whole of Government Accounts

1. Introduction

1.1. Preamble

1.1.1. Herefordshire Council is the highway authority responsible for the highway network in Herefordshire, with the exception of Trunk Roads. It is essential that the safety, availability and long-term integrity of the assets that make up the publically maintainable highway is well managed. Asset Management is recognised as the best-practice approach to the management of infrastructure assets, such as the public highway.

1.1.2. This document is Herefordshire Council's TAMP, it records and communicates the approach to asset management in a single document, informing relevant staff and stakeholders how key highway infrastructure assets are managed over a period of time. Herefordshire Council's asset management objectives and stakeholder needs are utilised in order to produce asset Lifecycle Plans and methodologies for developing a forward programme, and from that programme, annual plans of works and services. To achieve this asset knowledge, data management and decision making on prioritising works and services will be detailed.

1.1.3. This TAMP is a tactical plan. It takes the strategic aims and objectives from Herefordshire Council's Corporate Plan, the Local Transport Plan (LTP), Highways Service Plan and provides direction to other departmental plans, such as the, Forward Programme and Annual Plans and specific Lifecycle Plans for assets. It is written in conjunction with the Highway Management Plan (HMP). The HMP links the legislative framework, industry best practice, statutory requirements and Council policies for highway maintenance together. It sets the minimum levels of service that are to be provided for all publically maintainable highways. The TAMP details the mechanisms that will be deployed as we work towards attaining the Council's objectives as expressed in its LTP, as a minimum the performance required by the HMP, the planned performance of the LCPs. This work being developed, delivered and measured through the Forward Programme and each Annual Plan.

1.2. Background

1.2.1. In 2008 a draft Herefordshire TAMP highlighted the need for further investigation of the transport assets under the authorities ownership, as the detail and quality of records varied across asset classes. In 2009, a data collection survey was undertaken. Life Cycle Plans and a TAMP were subsequently developed and adopted as a working plan in January 2012.

1.2.2. The highway assets covered by this plan are:

- Roads with associated verges and drains, in excess of 3250km
- Public Rights of Way, in the region of 3,380 km
- 758 Bridges, safety barriers and retaining walls
- 14,000 Streetlights
- 25,000 Drainage gullies and highway drainage systems
- Traffic signal sets including Urban Traffic Management Control (UTMC) equipment
- Road signs
- Road markings
- Safety fences
- Trees
- Footways and cycle ways
- Park and Ride facilities
- Bus stops
- Pedestrian crossings

1.2.3. Council assets not covered by this plan are:

- Weather Stations
- Pay and Display Car parks
- Footpaths maintained by the Housing Associations
- Parks maintained by Non-Council Bodies

1.2.4. Assets that have been specifically excluded from this plan are:

- Private Roads
- Private Bridges
- Decorative, seasonal lighting
- Riparian water related infrastructure that does not form part of the road network
- Public open spaces / parks maintained by the Council
- Assets relating to the other five key areas of Council asset ownership (e.g. Buildings and Property, Council Housing, Open Space, Vehicle Fleet and Information and Communications Technology)

1.2.5. Figure 1: provides an overview of the County's principal roads. The highway network encapsulates several of the major assets that Herefordshire Council is charged with managing.

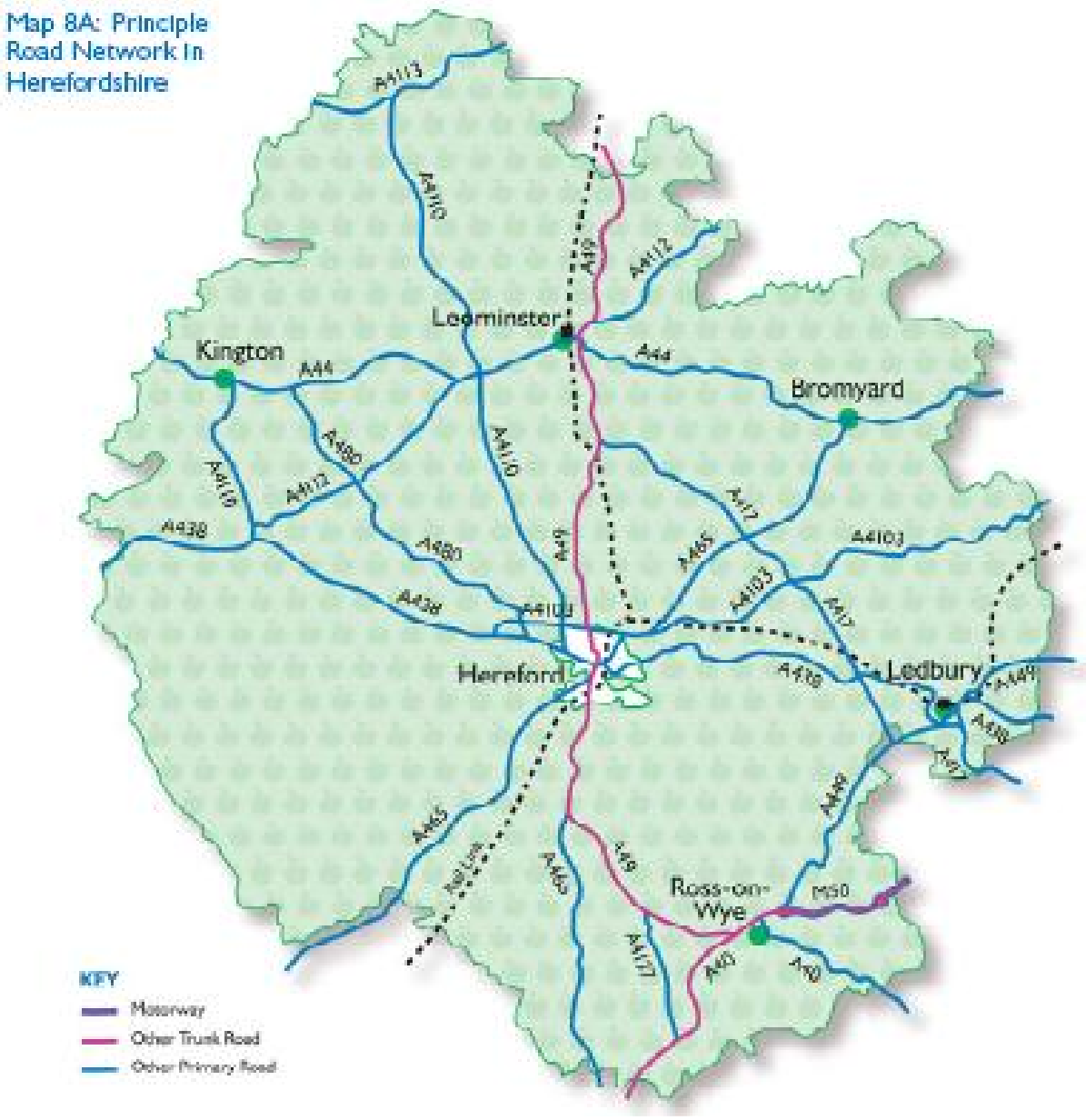

Figure 1: Herefordshire Map

1.3. Stakeholders

1.3.1. Key stakeholders who interact with this TAMP include:

- Council staff, Councillors and Planning Officers
- Council employed providers, consultants and contractors
- The community: Residents, Businesses and Institutions

- Utilities: electricity, gas, telecoms, sewage, water providers
- Government Service Providers: Highways England, Network Rail, Emergency, Social, Educational and Healthcare
- Regulatory Bodies: Environment Agency and English Heritage
- Special Interest Groups, Associations & Non-Government Organisations
- Landowners
- Neighbouring Councils
- Property Developers and their consultants and contractors

1.3.2. To ensure that the service is in line with stakeholder expectations, a Network Public Consultation Survey (NHT) is undertaken on an annual basis. In addition, the locality approach to maintenance utilised by the Council enables intelligence on needs and priorities at a local level to be gained. This informs the prioritisation of investment in works and services for the coming year.

1.3.3. In addition to Herefordshire Council's duties to maintain their assets, the county's infrastructure serviceability is also reliant on certain stakeholders fulfilling their obligations. This document is written on the basis that these duties will be duly untaken and stakeholders will act with due regard to the safety of the community.

1.3.4. The TAMP will be utilised by the highway service to guide their day-to-day activities and capital investment plans.

1.4. Challenges Facing Highway Authorities

1.4.1. Our duties are to maintain operate and the use of our powers to improve highway assets are under increasing pressures, these include:

- **Finite resources**.
- **Mature networks**
- **Increased accountability**
- **Increasing expectations**

1.4.2. In response to these challenges we have chosen to develop and implement asset management as a means of delivering the most appropriate outcomes for our customers within the available resources.

1.5. Asset Management

1.5.1. ADEPT's "Framework for Asset Management" provides the following definition of asset management:

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

1.5.2. The definition brings together themes that define an asset management approach:

- **Strategic Approach** - A systematic process that takes a long term view.
- **Whole of Life** - The whole-life, or life-cycle, of an asset is considered.
- **Optimisation** - Maximising benefits by balancing competing demands.
- **Resource Allocation** - Allocation of resources based on assessed needs.
- **Customer Focus** - Explicit consideration of customer expectations.

1.6. Other Drivers for the use of Transport Asset Management

1.6.1. The principle drivers are the desire to achieve value for money in services and meet the needs of our customers, other drivers are:

- **Whole of Government Accounts** – A regulatory requirement for local authorities to report on the value their assets, of which highway assets make up a large proportion. Asset management enables depreciation to be calculated and thus the valuation.
- **Prudential Code** - Requires local authorities to have explicit regard to option appraisal, asset management planning and strategic planning when making capital investment decisions and to demonstrate that their plans are affordable, prudent and sustainable.
- **Incentive Fund** – Department for Transport's highway maintenance grant funding is becoming increasingly reliant on Local Authorities meeting best-practice asset management criteria. Should Herefordshire not implement an asset management approach, the worst case would be a reduction in funding the region of £5m over the period 2016-2021

1.7. Benefits of Transport Asset Management Plans

1.7.1. Asset management facilitates better decision-making by supporting engineering judgment with financial, economic and engineering analysis. It helps us to better understand and manage the relationship between whole life cost and performance, whilst providing the evidence base for our investment decisions.

1.8. Relationship of TAMP to Key Documents

1.8.1. Herefordshire's policies relating to highway infrastructure are detailed in the Local Transport Plan (LTP). The TAMP details the methodology that will be used to achieve the policy objectives. Highway and Structures Maintenance Plans detail the standards and practices that will be utilised. A Forward Programme and a series of Annual Plans will detail the specific activities that will be undertaken over time to achieve the policy objectives set in the LTP. They also detail the levels of service that are planned to be achieved and the resources required to do this. Figure 2: illustrates how these documents relate to one another. In addition, the LTP supports the strategies outlined in the Council's Corporate Plan, which covers the breadth of Council Services.

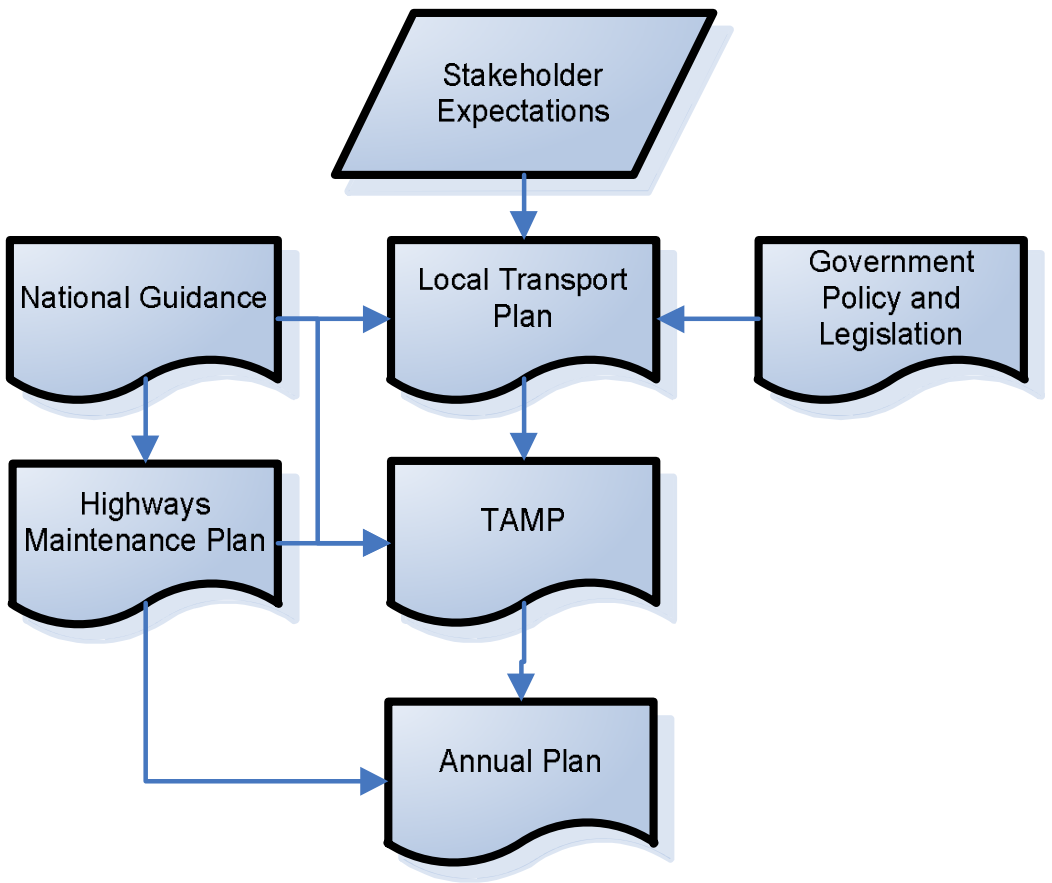

Figure 2: Relationship of Strategic Documents

1.9. TAMP Leadership

1.9.1. Herefordshire Council has communicated its commitment to implementing an asset management approach, endorsed this policy and strategy in its Local Transport Plan, which is published on the Council's website.

1.9.2. The senior leadership team for highways and the public realm comprises of a Strategic Board made up of Council Cabinet members, senior Council Officers and Balfour Beatty executives. This board meets Quarterly to review progress, provide direction and make decisions on key issues associated with these services including asset management.

1.9.3. The person responsible for implementing and leading asset management for highway assets is detailed within the Annual Plan for the Herefordshire's Public Realm.

1.9.4. Balfour Beatty Living Places is responsible for developing the TAMP in line with Council's objectives and then undertaking maintenance of the assets in line with this.

2. Levels of Service & Performance

2.1. Overview

2.1.1. Establishing a relationship between the stakeholder's expectations and the performance framework is vital to understand the overall performance that is being delivered. In addition, it helps to set up a systematic approach to measure progress through asset management principles and contribute to deliver a long-term base asset management strategy. This section focuses on establishing how this link will be achieved, which is summarised in Figure 3:

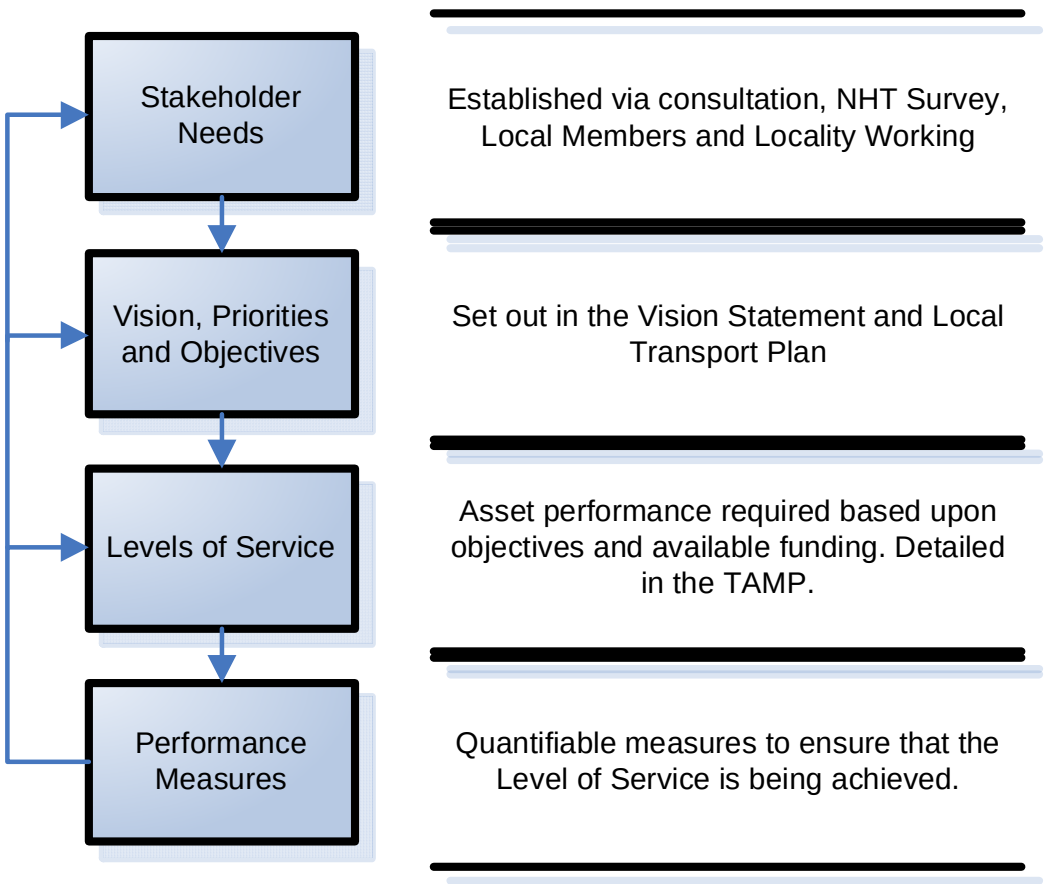

Figure 3: Goals, Objectives, Levels of Service and Performance Measures

2.2. Vision, Priorities and Objectives

2.2.1. This Transport Asset Management Plan (TAMP) is a tactical plan. It takes the strategic vision and objectives from Herefordshire Council's Corporate Plan, the Local Transport Plan (LTP) and provides direction to other departmental plans, such as the Highway Network Management Plan and Highway Maintenance Plan, and links them with legal requirements and best practice.

2.2.2. The Local Transport Policy (LTP) sets out the Council's transport policy and strategy, it provides the strategic link between the TAMP and our corporate objectives. The LTP sets out the objectives and asset management policies that will be followed in order for the county's civil infrastructure to achieve the corporate objectives.

2.2.3. The objective of Highway Maintenance is defined below:

> "The core objectives of highway maintenance is to deliver a safe, serviceable and sustainable network, taking into account the need to contribute to the wider objectives of asset management, integrated transport, corporate policy and continuous improvement" *Ref. Well Maintained Highways.*

2.3. Levels of Service

2.3.1. As defined by the HMEP (2013), levels of service are broad statements that describe the performance of the highway network in terms that stakeholders can understand. They affect the whole network rather than a single focus on individual assets. In addition, they cover asset condition and non-condition demand aspirations, i.e. a representation of how the asset is performing in terms of both delivering the service to users and maintaining its physical integrity at an appropriate level. Overall, the definition of levels of service is vital to:

- ensure that adequate emphasis is given to stakeholder needs and expectations within budget constraints and the focus is given to what is critical;
- ensure that operational activities support the achievement of strategic organisational goals and objectives;
- provide a service that meets statutory standards and obligations;
- adopt and ensure efficiency considerations, where service standards should take account of engineering and economic efficiency requirements which require a long-term approach to optimality;
- link the costs with the benefits of the services provided; and
- measure the overall effectiveness of our approach to the transportation asset management delivered.

2.3.2. The definition of levels of service is not a one-off activity. Instead, the identification and characterisation of these levels is a continuous process that follows the stakeholders' needs and changing priorities over time. Its definition and review takes into account multiple information sources, as it is illustrated in Figure 4:

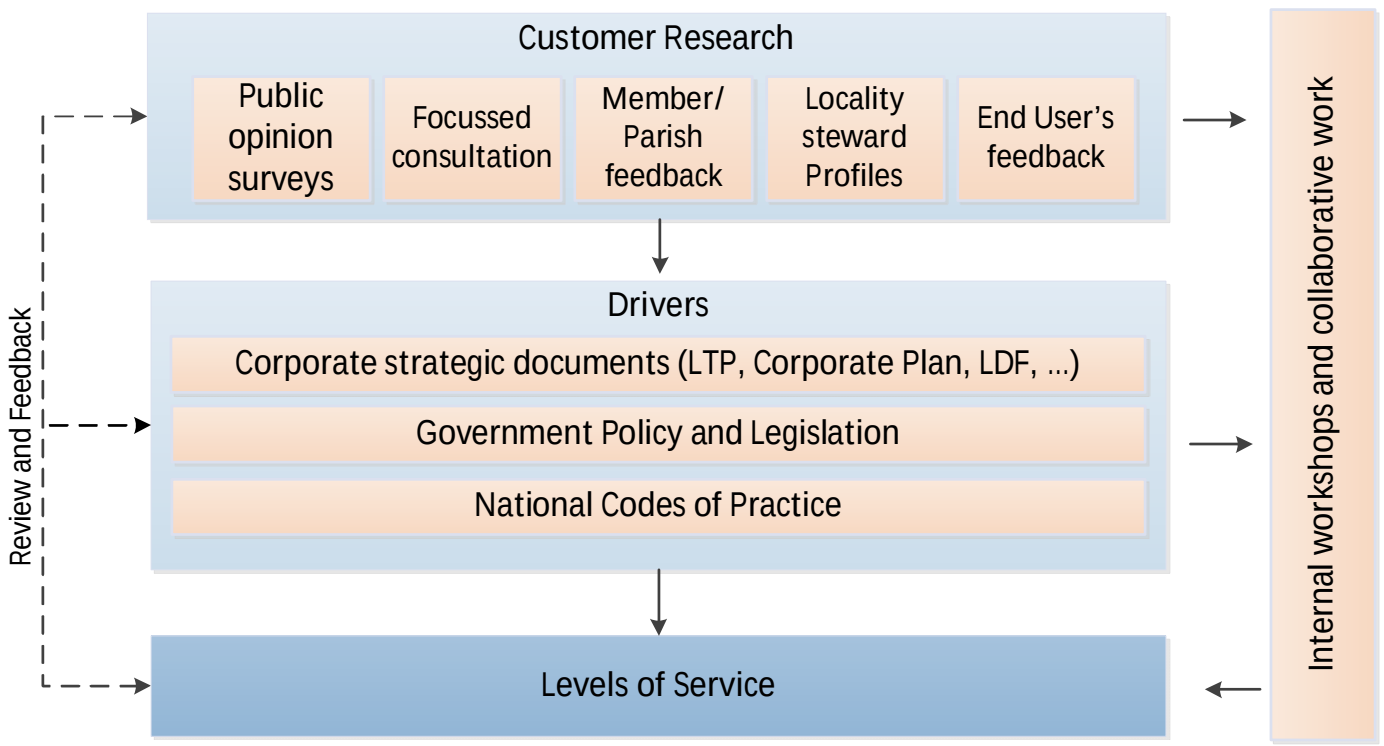

Figure 4: Sources of information to support the development of levels of service

2.4. Identifying Stakeholder Needs

2.4.1. The National Highways & Transportation (NHT) Survey is carried out by an independent organisation nationally on an annual basis by gathering feedback from a random selection of the public across Herefordshire both on their satisfaction and what they consider as important. Figures 5-7 provides examples from the 2015 results. These results are tracked over time and benchmarked with other authorities and can be found at: www.nhtsurveyecontrack.com

2.4.2. Themes include accessibility, public transport, walking and cycling, tackling congestion, road safety, highways maintenance and enforcement. They are also requested to prioritise in order of importance what qualities Herefordshire's road should have and how to spend the budget. This enables customer priorities to be established.

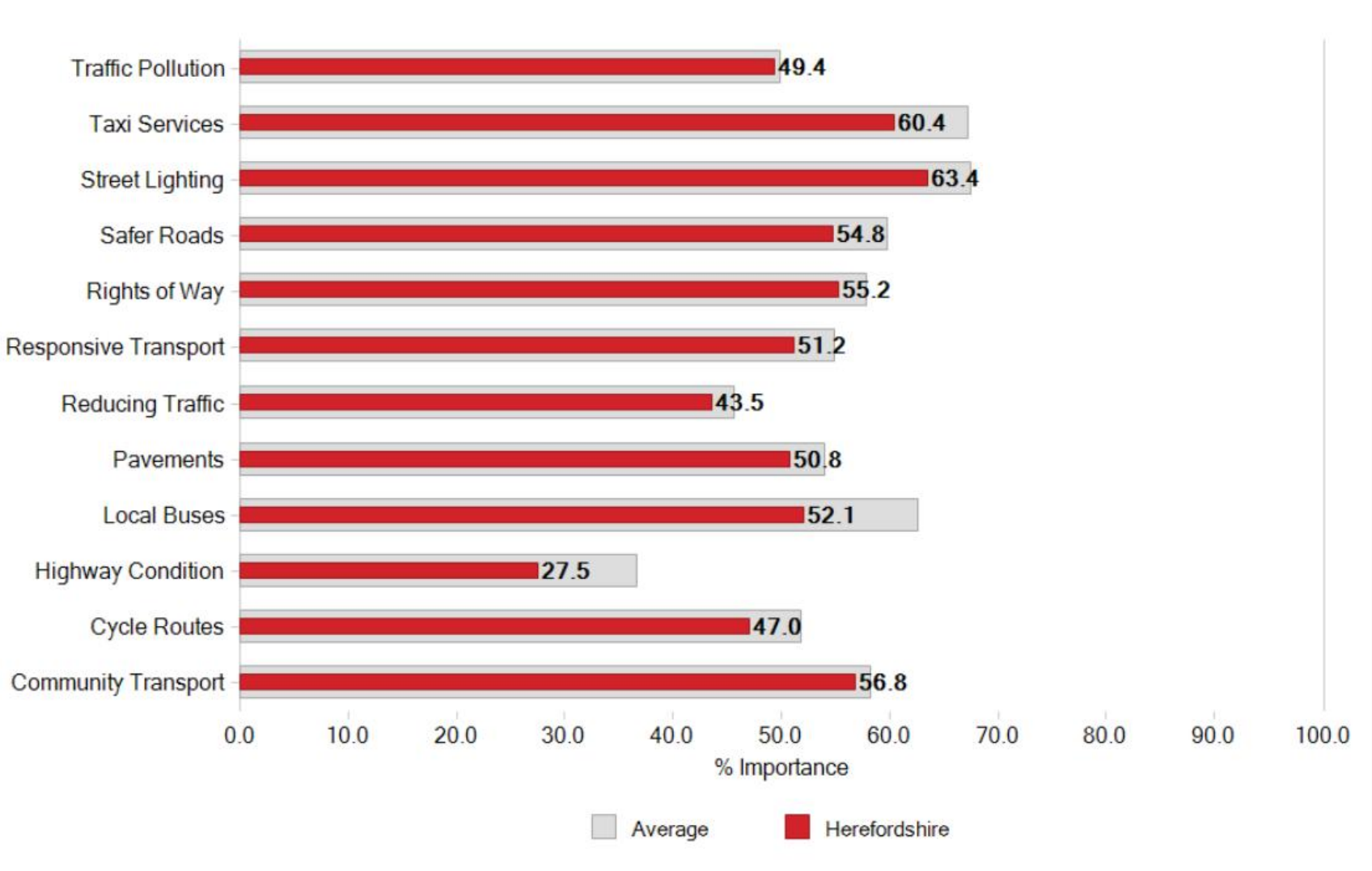

Figure 5: Graph of how satisfied or dissatisfied the public are with areas of service

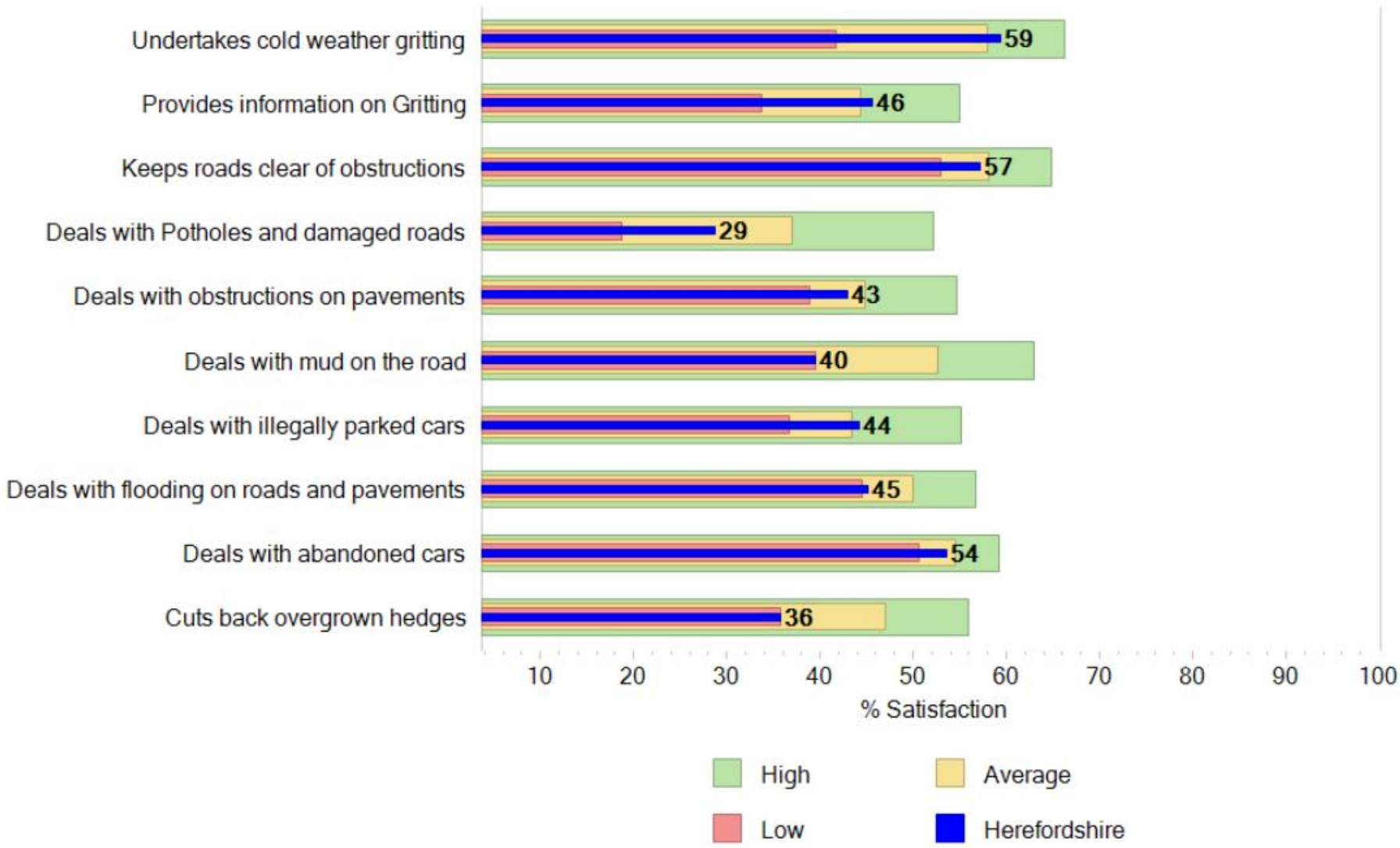

Figure 6: Graph showing how satisfied the public are with the way council deals with certain areas of the service 1 of 2

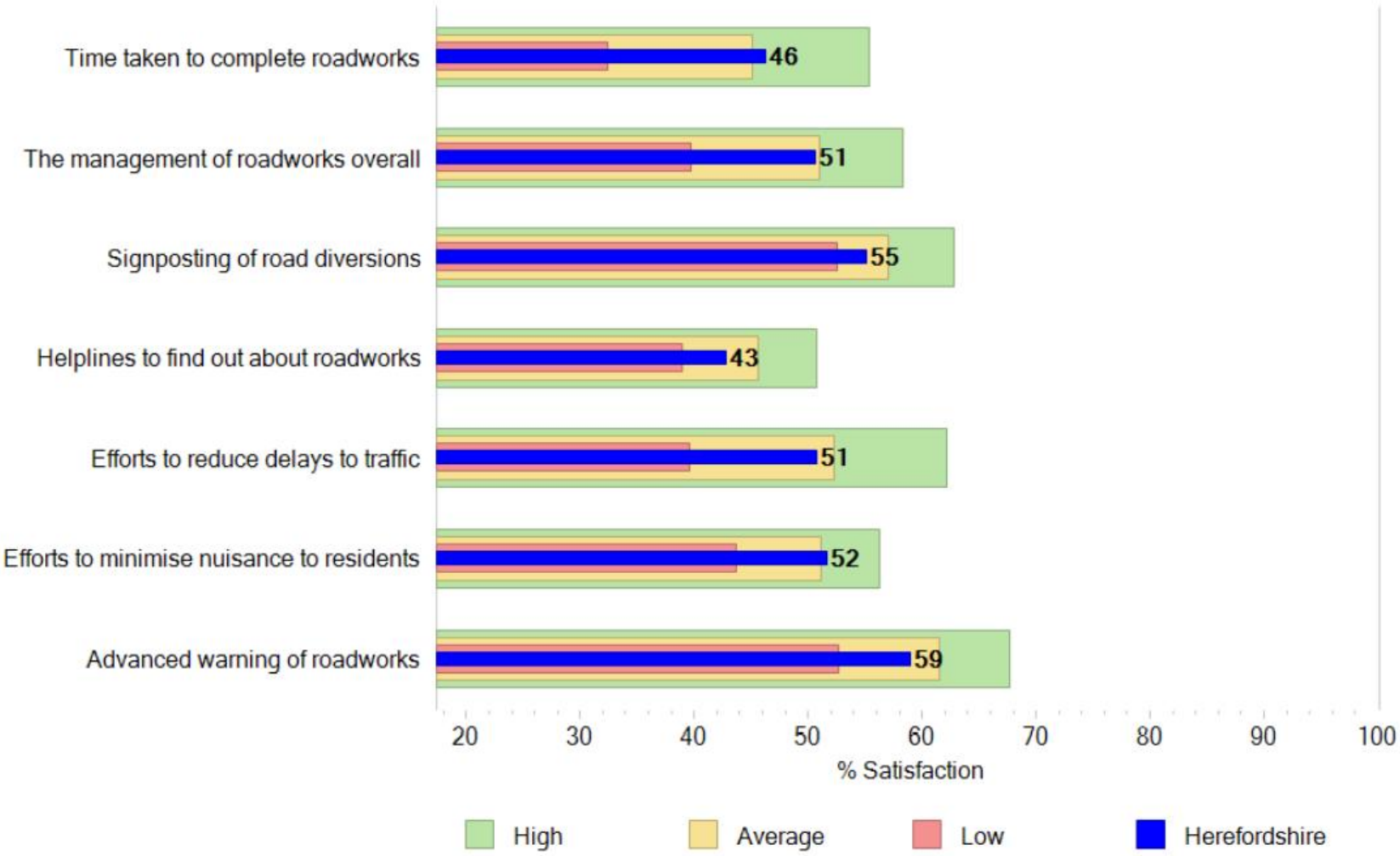

Figure 7: Graph showing how satisfied the public are with the way council deals with certain areas of the service 2 of 2

Priority of Service Objectives for Herefordshire, NHT 2015

2.4.3. As part of the embedded Annual Planning process and aligned with the communication strategy more focussed consultation takes place with identified key stakeholders on an on-going basis. This includes review of services against budget with strategic clients and assessment of need through Ward Members and Parish Councillors. Consultation takes place through road shows, briefings, drop in sessions and one to one discussion through the Locality Stewards with feedback captured and incorporated in determining levels of service. On an operational level, customers also provide their feedback through Herefordshire Council website or through the call centre.

2.4.4. We recognise that consultation is an on-going process, with results obtained being a snapshot at points in time. As the TAMP evolves, the NHT Survey will continue to be used to update and inform Levels of Service together with the feedback from other key stakeholders such as members and parish councils through the Locality Stewards, annual planning consultations and lessons learnt workshops.

2.5. *Developing* Service levels

2.5.1. Levels of Service (LoS) are defined by considering the existing condition of assets, best practice, strategic objectives, the availability of resources, statutory duties associated with certain assets' minimum performance levels and engaging with stakeholders about their service priorities. It is common to have competing demands for maintenance investment across asset classes and in order to develop LoS, an understanding of the requirements that govern the delivery of the service is needed reflecting the Statutory Duties of the Council, level of financial constraint together with customer expectations.

2.5.2. Service Objectives have been derived following best practice guidelines, such as the Code of Practice for Highway Maintenance and Framework for Highways Asset Management taking into account stakeholder priorities.

2.5.3. Table 1: compares the levels of service developed with the main transportation objectives defined in the LTP. This high level analysis helps to understand the strong existing link between the levels of service defined and such political and strategic principles taking into account stakeholder needs. To this end, a qualitative comparative analysis based on major, moderate and minor indicators is used.

Table 1: Review of Levels of Service from LTP

		Objectives				
		Enable economic growth	Provide a good quality transport network for all users	Promote healthy lifestyles	Make journeys safer, easier and healthier	Ensure access to services for those living in rural areas
Levels of Service	Safety	Minor	Major	Minor	Major	Moderate
	Serviceability	Moderate	Major	Moderate	Moderate	Moderate
	Affordability	Major	Major	Minor	Moderate	Moderate
	Availability and Accessibility	Moderate	Major	Moderate	Major	Major
	Protect the Environment	Minor	Minor	Major	Moderate	Moderate

2.5.4. The derived service levels are detailed below in Table 2: Examples of what is covered in each service objective are given below, these will be developed as the TAMP evolves and through our Annual Plans:

Table 2: Levels of Service

Current Levels of Service			
Level of Service		**Aim**	**Application within the TAMP**
Safety	Provide a safe highway network	To increase personal safety, security and reduce the number and risk of accidents by promoting a road environment that is safe for all users.	▪ Keeping the surface of roads in good condition ▪ Improving drainage – keeping roads clear of standing water and water that could cause carriageway deterioration or safety concerns ▪ Keeping the surface of footways in good condition ▪ Safe place for pedestrians, cyclists and horse riders to share the road with motor vehicles ▪ Safe place for pedestrians to walk and cross streets ▪ Resurfacing roads ▪ Providing and maintaining street lights
Serviceability	Ensure the serviceability of the highway network	Ability of the highway network to provide service ensuring its “fit for purpose” by maximising the integrity of the physical assets over the whole	▪ Use lifecycle plans to ensure asset availability and serviceability ▪ Keeping the surface of roads in good condition ▪ Improving drainage – keeping roads clear of standing water and water that

		lifecycle.	could cause carriageway deterioration or safety concerns ■ Keeping the surface of footways in good condition ■ Well-designed junctions ■ Resurfacing the road ■ The provision and maintaining of street lights ■ Ensure the public realm is maintained managing stakeholder expectations ■ Improve consultation and feedback with customers, respond effectively to enquiries and complaints, involve customers in decisions where appropriate.
Affordability	Ensure that maintenance of the highway network remains affordable	Make a cost effective use of budget and resources across the network in order to deliver the intended services within acceptable performance levels	■ Provide Value for Money, ensuring resources are well used ■ Consideration of the needs of all users in new schemes, especially vulnerable users ■ Risk based approach to inspection and maintenance ■ Needs based prioritised approach to delivery
Availability & Accessibility	Allow the highway network to remain available and accessible for all users	To provide fair and safe access for all customers to the services, which reflects effectiveness of the highway network as a means of transport for all users. This includes reducing traffic congestion and improving journey time reliability.	■ Safe and easy car and cycle parking ■ Road works that take place as quickly as possible to minimise traffic disruption ■ TAMP will appreciate the rural nature of the county as well as its urban transport networks ■ Consideration of the needs of all users in new schemes, especially vulnerable users ■ Minimise asset downtime ■ Reliability for journeys in all weathers ■ Making public transport more accessible ■ Consider stakeholder needs in prioritising works. Ensure effective communication occurs.
Protect the environment	Consider the environmental impact when undertaking maintenance	To protect and improve the environment for example by monitoring and reducing the carbon footprint of the	■ Protect and improve the environment ■ Measures to reduce emissions and improve air quality, reduce congestion and improve journey time.

		council's activities; improving the 'green estate' managed by the council, etc. This objective may be achieved through the delivery of the above priority objectives, and should underpin all our activities.	▪ Minimise environmental impact, via considering whole-life cost, utilising recycled materials where possible.

2.5.5. Taking into account the need to deliver improving services often within budget constraints as well the need to focus on wider aspects when providing a mature asset management approach, it is proposed to further refine and embed new elements of levels of services. These are proposed and highlighted below.

Table 3: Levels of Service

Aspects		Purpose
Resilience	Enhance collaboration through resilient business processes and services	Promote collaboration between Herefordshire's neighbouring authorities and create resilient decision-making processes within service delivery. Eg flooding strategy, network management of utilities
Public realm	Enhance social contribution and value, now and in the future	Provide reliable working and living conditions and make cost-effective investment decisions. Consider local impact. Utilise and enhance local businesses, skills etc
User service / quality	Improve user satisfaction	Enhance overall quality of the services delivered and promote efficient and effective communication services via user feedback and consultation. Provide easy to access real time information and proactive communications
Trust	Improve user trust in the asset management services	Increase our overall reputation of Herefordshire Council.

2.6. Performance Framework

2.6.1. The performance management framework is a tool that links levels of service to performance measures and targets. This framework aims to support management decision-making processes associated with the highway service delivery. Further detail is provided in the LTP's Asset Management Policy Statement.

2.6.2. Performance measures show how well services are being delivered and the processes used to deliver them. They need to reflect performance in each of the service levels defined using a range of input output and outcome measures. Performance measures are quantitative indicators of the extent to which an activity meets a specific objective by addressing:

- how well is the Council performing;
- if aims, goals, objectives and levels of service are being met;
- if users are being satisfied; and
- if there is enough control on the processes and delivery.

2.6.3. Performance measures are delivered and measured through clearly defined Performance Indicators (PI). They reflect the Council's vision and objectives and the stakeholders needs and expectations. These indicators take into account what is to be delivered, how it will be achieved and how to define and measure it accurately. A PI defines a measurement expressed as a percentage, index, rate or other comparison that is monitored at regular intervals and is compared to one or more criterion. Good performance measures should be SMART:

- specific: have a specific target;
- measureable: quantifiable;
- achievable: measure the degree of improvement toward the target when it has not been reached.
- relevant: it should give more insight on the performance in obtaining the respective level of service.
- time bound: performance should be measured over a period of time or provide a snapshot at a particular time.

2.6.4. PI are used as a relative measure against a pre-set standard over a defined period of time and highlight areas for investigation and improvement. It is important to develop appropriate PI's that add value and not for the sake of measuring activity and should be clearly linked to Level of Service and achievement of the identified objectives.

2.6.5. When a full set of performance measures is developed and documented, targets and thresholds are assigned against each measure. These targets reflect - in broad statements - the quality of service performance. Achieving targets does not necessarily guarantee economical or optimal management of the services delivered. However, it provides a good indication of performance, which is vital to support multiple levels of decision-making.

2.6.6. As we continuously seek to identify a hierarchy for performance indicators and target related (technical) indicators to be used (low level data), on the one end of the scale, to a simple indicator understood at the other end (high level data). The definition of these measures and targets require collaboration and commitment with key decision-makers and service providers involved in the three governing asset management levels: strategic, tactical and operational. Table 4: provides an example

Table 4: Example Performance Indicators

LEVEL OF MANAGEMENT	PERFORMANCE INDICATOR (PI) (examples)				
	Asset type	Ref	Technical level of service	Frequency	Format
Strategic	Network	S 1	The number of people killed or seriously injured in road traffic accidents	Annual	Percentage
Tactical	Highways and Footways	O 6	The percentage of Highway inspections completed on time when measured against the predefined schedule.	Monthly	Percentage
Operational	Highways and Footways	O 1	The percentage of Category 1 Defects made safe within HMP set timescale from the Time of Notification.	Monthly	Percentage

Levels of Service Performance Scale

2.6.7. The definition of a high-level performance scale provides a consistent means to report the overall service delivery. Thus, when performance measures are developed and linked to levels of service, individual measures should be banded and described in qualitative terms. This allows performance to be described in a way that is easily understood by all. To this end, very detailed information at a low level can be condensed or aggregated into progressively fewer items at successively higher levels which may be measured by three class values (Figure 8)

- Good performance (target): meets or exceeds recognised current good practice and meets and exceeds minimum national and local requirements and/or basic information;
- Fair performance (threshold): meets the minimum national and local requirements and/or basic information;
- Poor performance (below threshold): does not meet the minimum national and/or local requirements and/or poor/no information.

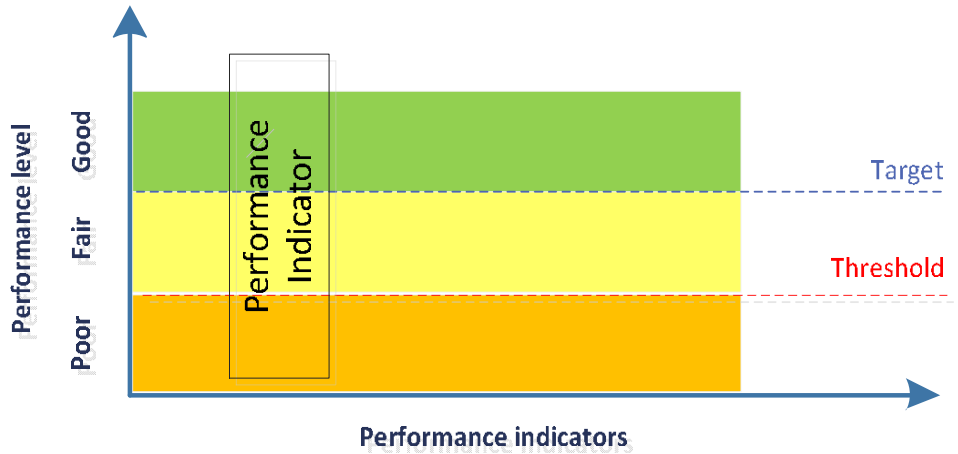

Figure 8: Setting Performance Indicator Ranges

Whenever it is possible, the use of weighting factors is encouraged to allocate a relative importance and contribution of each measure against the corresponding level of service.

2.7. Reviewing and Managing Performance

2.7.1. A number of measures already exist as part of contractual arrangement for delivery:

- Strategic Performance Indicators aligned to Herefordshire Council's strategic outcomes to ensure the service is designed and delivered to maximise the achievement of identified objectives. Outcome focussed where possible and measured annually to include improving road condition, reducing impact on the environment and increasing customer satisfaction.
- Operations Performance Indicators a set of measures reported monthly to encouraging delivery to operational excellence These provide information on the effectiveness of operational aspects in delivering to the expectations of this TAMP these indicators provide monitoring information on how the plan is being delivered on the ground and management information on how the processes defined by this TAMP are functioning, highlighting any improvement actions required.
- Management information either aligned to business performance or assets and are designed to monitor and identify improvements and report general performance of the asset.

2.7.2. These and those agreed as part of the performance framework development will be reviewed on an annual basis through the annual planning process. This process is led by asset owners and key strategic clients and involves consultation with key stakeholders, reviewing performance in the previous year. Thresholds for the measures are agreed and set in line with expected levels of service as identified above.

2.7.3. The details of how the service will satisfy the agreed levels of service through operational activities will also be agreed and defined through the Forward Programme and then the Annual Plan and contract performance framework

2.7.4. Performance is reported monthly through the provision of dashboards and narrative reports and forms the basis of the review monthly by the Operations Board and Annual Plan cluster group and quarterly by the Strategic Partnership Board with data used to inform decisions and improvement actions.

2.7.5. Performance information is more useful when past results are able to be presented for comparison and trends can be established. The information gathered during the measuring period of 3 to 5 years will show areas of performance lower than the targets fixed, indicating whether is an isolated issue or trend behaviour.

2.7.6. Funding is one key element to achieving these targets and therefore there is a natural sensitivity between targets and funding. To understand this sensitivity for each asset the Life Cycle Plans will be further developed to model various spending scenarios and how they affect achieving targets.

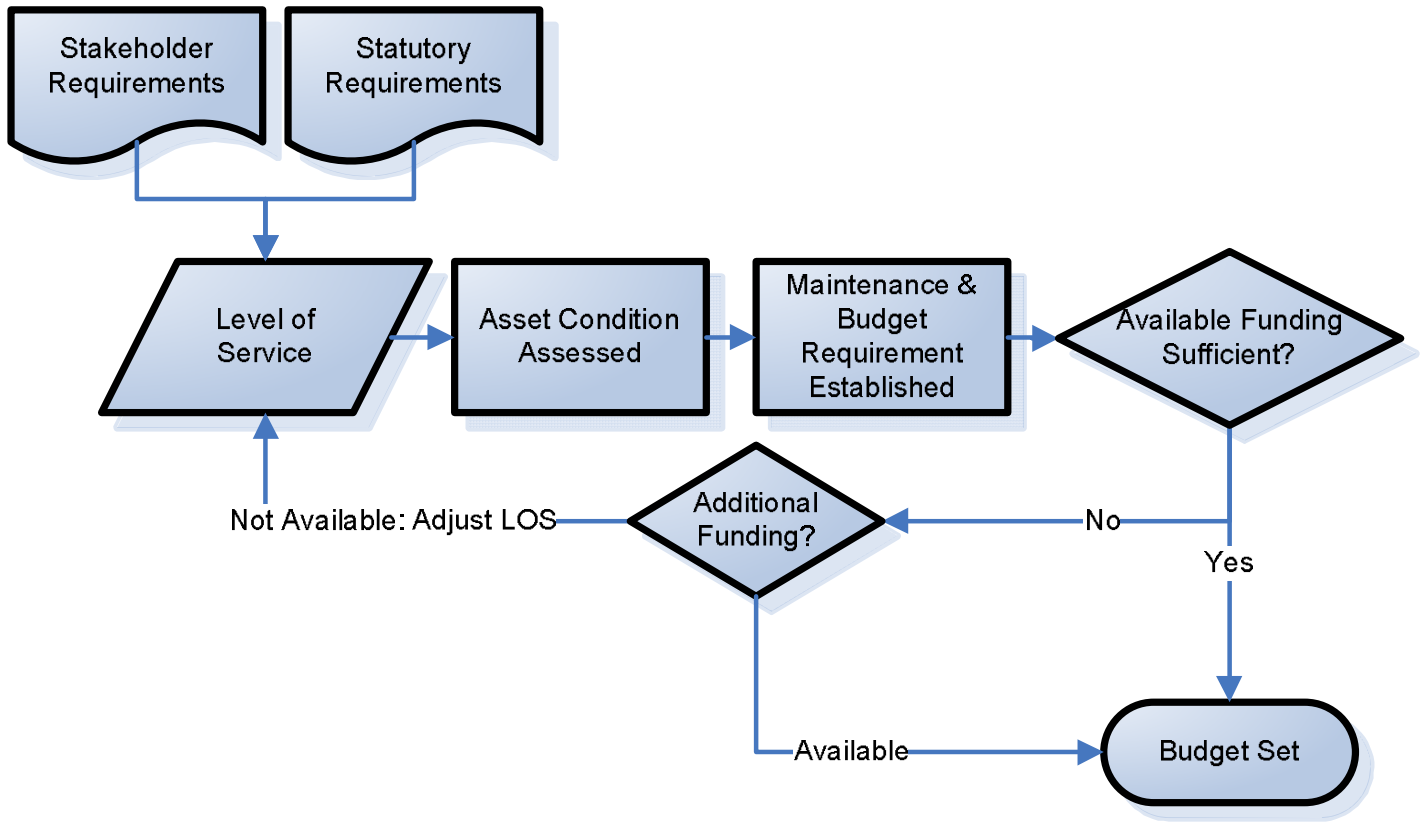

Figure 9: Funding in developing level of service

2.8. Understanding Best Value

2.8.1. Assigning costs to levels of service will prove useful in determining priorities for investment to achieve the desired 'level of excellence'. The following questions will be considered when approaching this step:

- What are the activities to concentrate on to achieve the targets?
- What are the risks associated with not delivering the agreed levels of excellence?
- Who will be responsible for achieving the agreed levels of excellence?
- How and when will any required change be implemented?
- What is the effect of service level changes on the asset lifecycle?

2.8.2. The cost of delivery the service against assets is managed as part of the Forward Programme and Annual Planning process

2.8.3. Any improvement actions identified during the development of the Levels of Service will be listed on the Business Improvement and Innovation Register and managed through the Continuous Improvement Cluster Group. The aim is to provide an 'Optimum Service' while ensuring the minimum whole life cost to maintain the asset.

2.9. Service Options

2.9.1. Setting service options allows comparison and brings consistency to the various competing resource demands. The full details on the minimum and optimum service options will be in place after agreements have been reached between individual asset owners and the Annual Plan Task Group.

2.9.2. As the Life Cycle Plans develop they will be able to perform 'what if' scenarios against the service options.

2.9.3. Service options for the asset groups are:

- Statutory minimum - All legislative requirements are met but intervention to support forward planning and programme delivery are not implemented.
- Current Level of service - Current standards are met but no investment for enhancement to meet public expectations.
- Optimum Level of Service - Interventions are programmed based on budget to meet the levels of service targets.
- Targeted Level of Service - Interventions are targeted to meet customer expectations but may not necessarily benefit the network or assets as a whole.
- Managed Decline – Where a service is above the current statutory minimum, investment in maintenance will be planned to gradually reduce the level of service to the statutory minimum.

2.9.4. Annually through the Annual Planning process we will evaluate service options, available funding and budgets, review and update options and level of service for major asset groups on the basis of which informed decisions on budget allocation can be made. This will include:

- A list of service options as defined in the lifecycle plans. Each option to include cost, anticipated impact on levels of service and associated risk.
- An evaluation of competing demands on an asset by asset basis. This process needs to be developed and shall prioritise the needs of individual assets against each other to fulfil stakeholder, policy, engineering and statutory requirements.
- A comparison of the asset demands with other works/activities, such as safety/ improvement schemes and major projects.

2.10. Service Inspection Audits

2.10.1. As the main source of data for establishing the condition of many assets, the performance of the Service Inspections requires monitoring to ensure both the quantity and quality of the information. Whilst the quantity shall be monitored as part of the compliance monitoring process, the quality aspect needs to be measured through these audits. The definition of each shall include the following information:

- The proportion of the collected data to be checked
- Any specifics in terms of the spread/composition of the audit
- Timing of the audit (i.e. during or following collection)
- The process by which the data shall be checked
- How the data coverage shall be checked.
- How the shall the results be reported

2.10.2. The Council will undertake auditing on an annual basis of their highway service provider to ensure quality of data.

Condition Survey Audits

2.10.3. Similar to service inspection audits, condition survey data requires auditing for quality and coverage. These audits need to be defined in the same terms as Service Inspection Audits.

- SCANNER
- SCRIM
- UKPMS Coarse Visual Inspection
- FNS
- UKPMS Detailed Visual Inspection or Footway Network Surveys

Compliance Monitoring

2.10.4. To ensure the systems and procedures supporting the asset management process are being complied with, checks need to be made to ensure defined deadlines and specifications are being followed and that timing, quantities and required actions are happening in line with this plan's expectations. This is managed through audit plan.

2.11. Performance Measure List

2.11.1. Levels of Service Performance Indicators have been identified from existing measures, and from former measures where data already exists and will be retained and built on. Additionally, BBLP with the Council will continue to develop new Local Performance Indicators to measure continual improvement in meeting the customer focused objectives. These indicators are reviewed and any new measures identified through the Forward Programme and Annual Planning process taking into account levels of service in line with budget availability.

2.11.2. Table 5: sets out the service's high level Strategic Performance Indicators, this list is by no means exhaustive and will be reviewed regularly to ensure it is 'fit for purpose' in supporting the objectives of the authority. Through the Annual Planning process these KPI's will be reviewed, targets and thresholds set on an on-going basis, and inline with the process set out in this document, taking into account levels of service, stakeholder needs.

Table 5: Strategic Performance Indicators

Ref.	Indicator	Safety	Serviceability	Affordability	Availability and Accessibility	Protect the Environment
S1	KSI	x	x			
S2	Road condition : A's	x	x	x		
S3	Road condition : B's	x	x	x		
S4	Road condition : C's	x	x	x		
S5	Road condition : U's	x	x	x		
S6	Footway condition		x		x	
S7	Bridge condition		x	x	x	
S8	Third party claim	x	x		x	
S9	Resilience to floods		x		x	x
S10	Skills & employability		x			
S11	Local Labour			x		
S12	CO2					x
S13	Reuse & recycling					x

S14	Community projects		x		x	x
S15	Customer satisfaction		x		x	
S16	Continuous improvement	x	x	x	x	x
S17	AP within budget			x		

3. Knowledge of our Assets

3.1. Overview

3.1.1. This section focuses on the collection and maintenance of highway network data within the TAMP framework. Having sufficiently detailed information about assets is vital to ensuring that maintenance can be appropriately planned. Without properly managing asset data, the objectives of Herefordshire Council, as well as their statutory duties as a local authority, will not be achieved. Furthermore, understanding asset condition is crucial to ensuring the required performance is achieved. To ensure information is gathered, validated, registered, stored, shared, utilised effectively and its completeness is understood, a quality system will be implemented in accordance with national standards.

3.1.2. Although it is possible to collect data for every single attribute for every asset across the network, this would not be cost-effective or beneficial. For example, it is not appropriate to collect detailed condition data and detailed attributes for a low risk and non-critical item. Asset data will be collected based upon need, which has been established by either a risk-based approach or statutory requirement.

3.1.3. The county's assets have three separate components, or levels, which are:

- **Asset groups**: defines the group of individual assets which are held; some of the asset groups maintained include Highways, PROW, Structures, Drainage, Programme works etc.
- **Individual asset**: is a single, more specific dataset which is held within an asset group. Examples of these include Highway Network, Footpaths, Road Bridges, Rail Bridges, Drainage Pipes, Bus Shelters etc.
- **Asset attributes**: define the underlying data, or metadata, of the individual asset in tabular format. Depending on the individual asset this information could cover various aspects of the asset including address, condition, date recorded, responsible authority, geometric measurements, councillor comments, materials used etc.

3.1.4. This chapter outlines the data that is currently held by BBLP on behalf of the Council, the strategies associated with asset data and how any deficit in data will be addressed within the TAMP framework.

3.2. Existing Data

3.2.1. Herefordshire is predominantly a rural county covering approximately 2,200 km^2, with a broad range of highway assets. Subsequently, the asset base is large and diverse. Due to the size of the asset base and its development over a long period, records are not fully digitised. Appendix 1 details the information that is needed for asset management decision making, data that is held and action plans to address any shortfalls. Asset data collection need is assessed using a risk based and cost/benefit approach. This means that for low risk assets, where detailed knowledge is not important and would be costly to gather, such as buried drainage assets, these may only be known for problem areas.

3.2.2. There is greater confidence in datasets where data collection has been carried out by data specialists. Examples of this are the road condition surveys which are carried out annually by a survey company or bridge data from inspections carried out by our Engineers.

3.2.3. Different assets have varying levels of inspection and reporting routines depending on the frequency of their usage, as a result data currency varies across data attributes.

3.2.4. While the first TAMP was in development, it was established via gap analysis that a significant deficit existed in the asset data. To address this issue a comprehensive survey of the highway network was commissioned and then undertaken in September 2009 by RouteMapper. At present the asset database is substantial, however it is not complete for certain assets such as road gullies. For some asset types, e.g. Street Furniture duplication also exists. Ideally further key asset attributes would also be known to help optimise and plan maintenance works. Where it is deemed worthwhile, programmes of asset data collection will be undertaken. Where possible this will be done on an on-going basis, alongside ordinary duties, to minimise cost and to enable continuing expansion of our knowledge of the assets.

3.3. Existing Asset Data Storage & Management

3.3.1. Data is stored in two primary locations which enable unique functions but are still able to operate concurrently. Specialist software is utilised for some specific assets.

MapInfo

- A GIS system developed by Pitney Bowes which is able to capture, store, manipulate, analyse, manage, and present all types of geospatial data.
- MapInfo enables the application of spatial analyses in support of potential highway works; mapping of outlining Council assets; investigations regarding the spatial relationships between assets and; the application of geometric and attribute amendments to Council assets.
- Assets held within MapInfo hold unique asset identifiers for referencing purposes as well as a number of other attributes covering asset condition, location and maintenance information.
- Using hotlinks, the system is able to link spatial datasets to other associated documents which cannot be stored in a spatial database; examples of these include digital photographs and technical drawings.
- MapInfo Viewer is used by Council staff to view the data stored within MapInfo. To maintain data quality, editing is not possible through MapInfo Viewer. Users are able to view various asset layers as well as interrogate the layers to acquire detailed attribute information regarding single features.
- The software is fully integrated into the Council's enterprise asset management system.

Confirm

- An enterprise asset management system and database, also developed by Pitney Bowes, which is integrated on both desktop and mobile devices across the Council.
- Assets are viewed spatially on a basemap similarly to MapInfo Viewer. Users are able to record new assets and log potential jobs and enquiries associated with a particular asset along the highway network.
- Being from the same developer, Confirm and MapInfo integrate together to enable easy viewing of geospatial data and the provision of maintenance services.
- Data is exported from Confirm into MapInfo using reports which document all attributes as well as providing co-ordinate information for GIS integration.
- The interoperability between Confirm and MapInfo has allowed the Confirm system to become the primary tool for data collection across the Council for most assets.
- The software has the ability to log, respond and action enquiries that are raised against assets. It is also used to plan cyclical inspection and maintenance activities. The reporting functionality allows benchmarking of performance to be undertaken.

Individual databases

- Other Council datasets are held in the following electronic systems. The asset group, individual asset and attribute file structure remains the same across the different systems. Where specific software is utilised it is because the software offers specific additional features that are needed over that offered by the main software systems utilised.
- Road condition data that has been recorded via surveys are stored in a UKPMS system which is maintained by WDM outside of the Council. Condition surveys are carried out annually for carriageways, footways and cycle ways. Data from the surveys is stored in the Horizons system that is used to develop and map potential highway scheme works. Further details on this system is included in the Carriageways LCP.
- BMX/AMX has been adopted for the Council's bridge asset database.
- Other datasets are stored in Excel spread sheets which are gradually being incorporated into Confirm & MapInfo.
- Historically paper records were also used which are gradually being digitised.

3.4. Data Management Related to the TAMP

3.4.1. Within the context of the TAMP, the purpose of retaining data is to enable staff to have access to information about asset condition, operation and performance characteristics to allow them to make informed asset management decisions.

3.4.2. To ensure that decisions are based upon high quality data a consistent approach to data management will be adopted. This process will follow recognised quality standards, such as ISO9001.

3.4.3. A strategic goal of data management will be the use of the minimum number of data stores as possible. Minimising the number of storage locations, clearly defining the structure of the data and where asset data will be stored will enable consistent data to be available. MapInfo and Confirm will be utilised as the primary storage databases, other than the other specialist databases list above.

3.4.4. Staff will be able to view and interrogate this data via desktop views.

3.4.5. Datasets holding attributes that cover transient information such as asset condition naturally become out of date over time. To ensure data quality is maintained, the following considerations have been made:

- Asset additions and removal updates must be applied regularly on the systems when new information is received, this also applies to the attribute data of existing assets.
- Asset condition monitoring and subsequent monitoring will be carried out on a regular basis where required, specific actions are detailed in the asset lifecycle plans.

3.5. Asset Register

3.5.1. Maintaining an asset register is fundamental in meeting asset information requirements. The Council's central asset register is held primarily across the integrated MapInfo and Confirm system. It is important that the central asset register maintains suitable functionality and accessibility, which is ensured by:

- Reviewing business requirements for the collection and maintenance of asset data.
- Assigning unique identifiers for each asset for referencing purposes
- Applying data updates when necessary
- Ensuring those who need to use the data have the necessary viewing rights
- Effective data management exercises e.g. gap-analyses.

3.5.2. Processes will be put in place to ensure the completion of such tasks, these are detailed in Appendix A. The methods of delivery will differ across individual datasets and will evolve as they are optimised throughout the programme.

3.5.3. Asset inspection routines vary across asset types with a large proportion currently being reactive as opposed to pro-active. Routine/pro-active inspections tend to be carried out by Locality Stewards, Technicians and Engineers who complete monthly, quarterly and annual inspections along walked and driven routes across Herefordshire. These are undertaken in line with the HMP. As knowledge of our asset base increases over time it is intended that the number of pro-active inspections will increase, this will be on particularly higher-risk assets and locations that have been identified. Issues and defects are raised on the Confirm system; an automated process passes such jobs to the responsible department. The Locality Stewards also carry out reactive inspections when issues or complaints are raised by the public, again this is carried out using the Confirm system. Bridge inspections are also carried out on a pro-active basis by the Structures Department, further detail can be found in the HMP and Structures LCP.

3.6. Data Collection

3.6.1. At present, inventory, condition and maintenance information varies in detail across each highway asset. For example:

- Carriageway and footway surface condition data collection is well formalised, statutory inspections are undertaken monthly, quarterly or yearly dependent upon the categorisation of the road. However, carriageway structural construction data is only available for recent schemes.
- Bridge data is comprehensive as they are inspected in detail, recorded and reviewed on a semi-annual basis. Culverts are currently reviewed at a low level of detail across the County. Gaps currently exist in the retaining wall location data however this information is due to be developed during Principal Inspections. Safety fencing data has been digitised and is available to use.
- Data on street lighting, traffic management, highway verges, road markings and drainage is limited. However where risk has been identified, data collection is underway to address short-falls.

3.6.2. To enable the implementation of the TAMP, it is vital that all asset inventories and condition data is captured in accessible and appropriate data sets such as MapInfo, ESRI or CAD formats.

3.6.3. The quality, depth, validity and coverage of data will be monitored on an ongoing basis. For optional data where a need is identified for further collection, and there is a business case for collection, then an asset data collection programme will be established.

3.6.4. Certain data is collected for statutory reporting purposes, such as carriage condition. We will continue to review statutory reporting requirements as they evolve and adjust our inspection regimes as required.

3.6.5. Where specific data collection surveys are not economic, data collection will be carried out by staff undertaking routine inspections and those carrying out reactive work e.g. potholing.

3.6.6. Validation and verification of data will be ensured by following formal processes outlined in the Data Management Procedure.

3.6.7. Data collection remains a key element in the continued development of TAMP. Before data collection is carried out for any asset, particularly new datasets, the required attributes will be considered and established. These considerations ensure that data collection exercises are efficient and cost-effective,

3.6.8. Where significant data quality issues are identified there is a need to consider whether the dataset in question should remain in the central shared system or be a standalone dataset. Any change of location will be implemented until quality issues are rectified and the data becomes suitable for shared use within the Council.

3.7. Sharing Data

3.7.1. The majority of the asset data can be accessed via ‘map layers’ within MapInfo Viewer and in Confirm by those who require access in the Council. The ability to control layers as well as interrogating the layers for further information has improved ease of access for all users. Maintaining accurate and current data within the shared repository remains a key element in maintaining the high standards of output from the TAMP. Confidence in asset data is maintained by applying read-only locks on the majority of data reducing the risks of accidental or unnecessary changes to the asset database.

4. Lifecycle Planning

4.1. Introduction

4.1.1. Lifecycle planning involves detailing the long-term strategy for managing a group of assets with the intention of meeting the required level of service while minimising whole life costs. It takes account of the funding constraints, predicts future performance and details maintenance strategies that will be utilised. Lifecycle Plans (LCPs) for specific asset groups are appended to this document.

4.1.2. In accordance with National Guidance, LCPs are only developed for assets that have the greatest value, are viewed as high risk or are critical. Where an asset group does not have a Lifecycle Plan developed a risk based approach, as detailed in Section 7, will be utilised. The following asset groups have LCPs:

- Carriageways
- Footways & Cycle Tracks
- Structures
- Drainage
- Street Lighting, Illuminated Signs and Bollards
- Traffic Signals UTC and Pedestrian Crossings

4.1.3. The lifecycle of an asset follows the path shown in Figure 10:

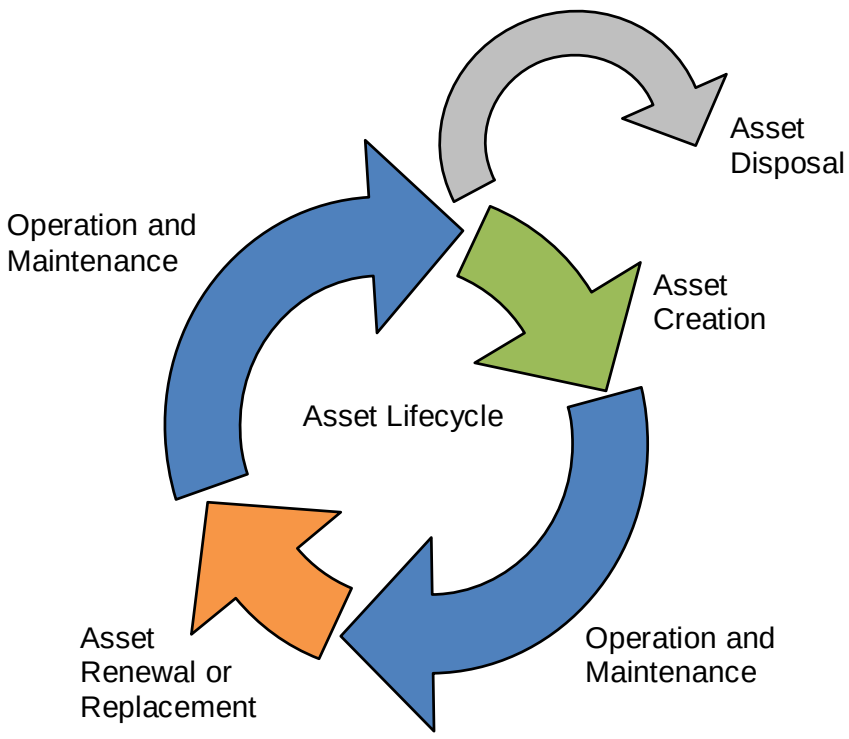

Figure 10: Asset Lifecycle

4.1.4. LCPs for individual asset groups will align with Figure 10: and describe how the asset is created, operated, maintained and disposed. Inspection, testing, routine, programmed and reactive maintenance requirements will be detailed. The LCP will also consider, where appropriate:

- Available funding verses the Levels of Service
- If a performance gap exists between current condition and Levels of Service
- Expected deterioration mechanisms
- Rates of deterioration
- Service Lives
- Required Levels of Service
- Available maintenance techniques, their impact and their costs

- The lifecycle plan that delivers the minimum whole life cost
- Disposal options
- Sustainability

4.1.5. The purpose of a LCP is to establish the investment strategy for an asset group that is affordable and delivers the required performance at the minimum cost.

4.2. Lifecycle Plans Structure

4.2.1. The LCPs have been modelled following guidance developed through our participation in the Midlands Service Improvement Group (MSIG). The MSIG Generic Highway Asset Management Plan template is used but with sections added or removed for clarity.

4.2.2. LCPs will cover the following areas, the detail required in each of these will be appropriate to the asset being considered:

- Introduction - Description of the Asset
- Asset Data Inventory - Information about the number or amount of asset(s) including their condition where known and information about their hierarchy. Service life / deterioration rates of the assets
- Levels of Service – Identify the required asset performance, aligned with the HMP, details of performance targets, indicators and demand aspirations.
- Available Capital (Renewal) and Revenue (Routine) Maintenance budget
- Option Identification – Inspection and maintenance options and costs, including performance gaps and lifecycle options
- Maintenance and Investment Strategy – Including optimisation, how investment will be prioritised, budget considerations, risk assessments and on-going monitoring and reviewing and agreed Levels of Service, to provide the most efficient and effective way of achieving performance targets.
- Forward Programme – known schemes to address defects that are anticipated to undertaken in the medium term
- Reporting and monitoring - Including performance measurement, and improvement actions
- Asset Valuation - Including Gross Replacement Cost, Depreciation and Impairment.

4.3. Maintenance Strategy

4.3.1. Maintenance Strategies for asset groups will be selected to meet LTP objectives, minimise whole life cost, meet statutory requirements, meet performance targets and manage risk. A number of different options can be utilised depending on the nature of the asset, these include:

- Do minimum maintenance – e.g. routine maintenance only, localised defect repair to maintain safety
- Reducing level of serviceability – e.g. below its prior level of service
- Sustaining serviceability – e.g. steady state, patching and surface dressing of carriageway
- Prioritised performance improvement to target assets – e.g. footway improvements near social infrastructure
- Enhanced level of performance to meet performance targets – e.g. where additional funding is being sour

4.4. Prioritisation of Works and Services

4.4.1. Investment prioritisation will be based upon one of the following techniques:

- Risk Based Evaluation – focused on minimising risk at the minimum cost. Risk evaluation is utilised for decision making
- Whole Life Cost – cost/benefit analysis where maintenance is prioritised based upon the lowest net present value
- Multi Criteria Analysis – maintenance schemes are assessed against criteria that align with levels of service

4.4.2. Lifecycle Plans will align with the above approach, as well as the asset management policies and objectives of the LTP.

4.5. Summary of LCP information

Table 6: Summary of LCP Information

Asset	Total	Gross Replacement Value	Current Annual Investment (2014-15 Capital)	Prioritisation
Carriageways	3270 km	£2,500 million	£3.5 million	Whole Life Cost Risk
Paved Footways and cycle tracks	869 km	£171 million	£100,000	Whole Life Cost Risk
Highways Structures	724 no.	£261 million	£750,000	Risk Based Evaluation
Safety Fences	7434 m			Steady State
Drainage	9259	Unknown	£300,000	Multi Criteria Analysis
Traffic Signals	68 sets	£9 million	£25,500	Risk Based Evaluation
Street Lighting	14,098 no.	£15 million	£4,800,000*	Risk Based Evaluation

* Major Investment programme underway converting halogen bulbs to LED

5. Financial

5.1. Introduction

5.1.1. This section describes funding arrangements required to deliver the life-cycle plans and levels of service via the reactive and planned maintenance programmes. Where funding is insufficient it details the approach that will be undertaken to address this. In addition, the approach to asset valuation is also detailed.

5.2. Sources of Finance

5.2.1. The principal source of funding for Transportation and Highways maintenance and investment are:

- Capital
- Revenue
- Derived Income

5.2.2. Potential sources of additional funding include:

- Prudential Code
- Commuted Sums
- Network Changes (De-trunking, adoptions, etc.)
- PFI credits
- Other borrowing / third party investment
- Efficiencies
- Specific Government funding grants

5.2.3. The challenge is to utilise these sources of funding to deliver the required level of service. This is demonstrated below:

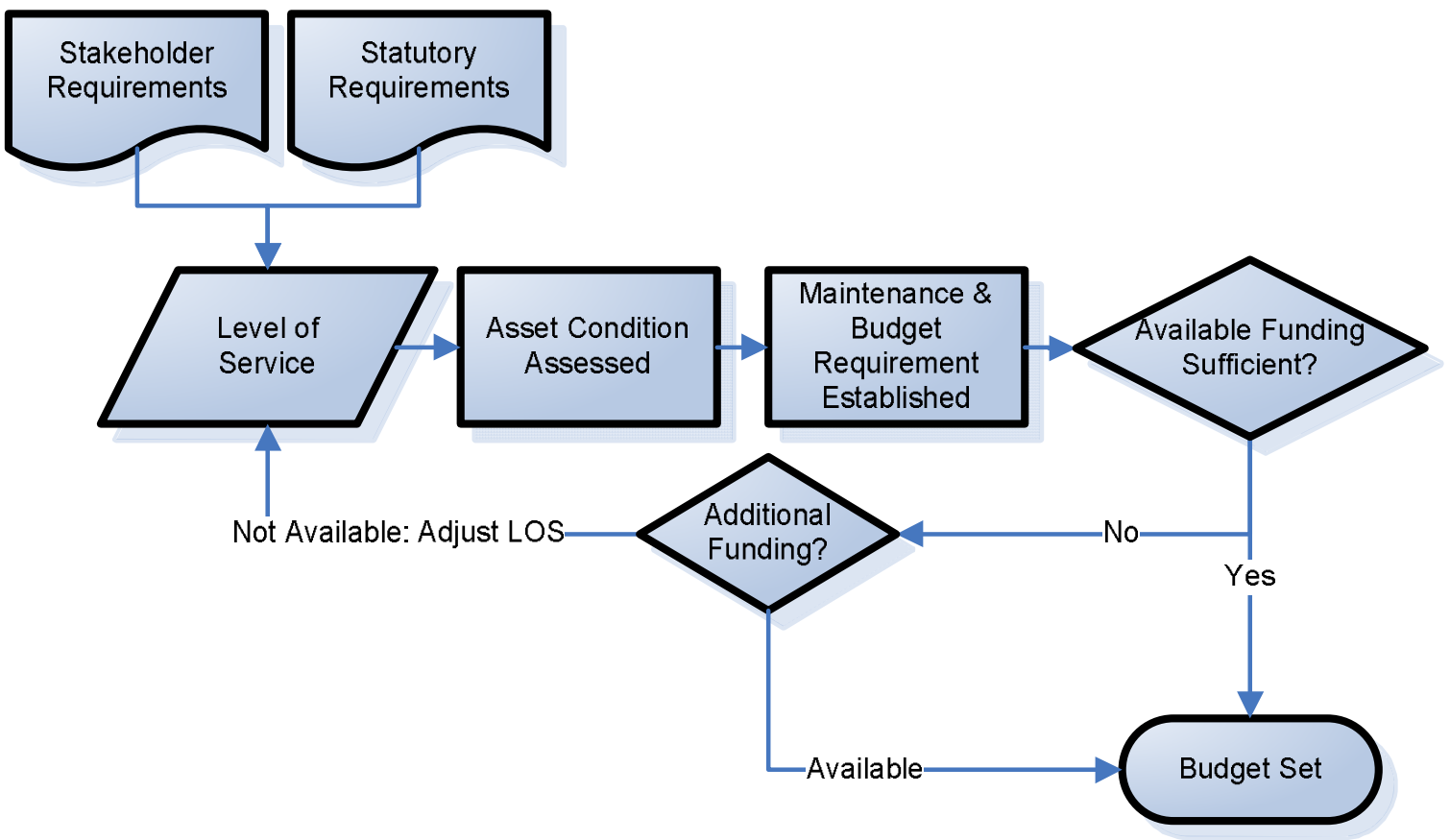

Figure 11: Level of Service and Budget Setting

5.2.4. Where principal budget sources are insufficient to deliver the planned level of service, the use of additional funding via other potential sources will be explored.

5.2.5. If borrowing is proposed to be utilised as a source of additional funding it will be justified by an investment case, the value of investing now to reduce overall maintenance costs will be demonstrated. This investment case will be subjected to scrutiny and approval by the Council.

5.2.6. Should available funding be insufficient to meet the planned level of service then the level of service will be adjusted, in consultation with stakeholders, to a level that can be achieved.

5.3. Annual Plan

5.3.1. The planned budget and service for each asset group will be developed each year and detailed in an Annual Plan. This will detail the works that will be undertaken to sustain the agreed levels of service.

5.3.2. Allocation and optimisation of budgets between areas of service is distributed in accordance with prioritisation process detailed in Section 6.6

5.3.3. In most years the percentage split in spending allocation will remain relatively constant, although certain large investments may be made in specific high-value schemes from time-to time. Between the Major Asset Groups, budgetary allocation in recent years has been as follows:

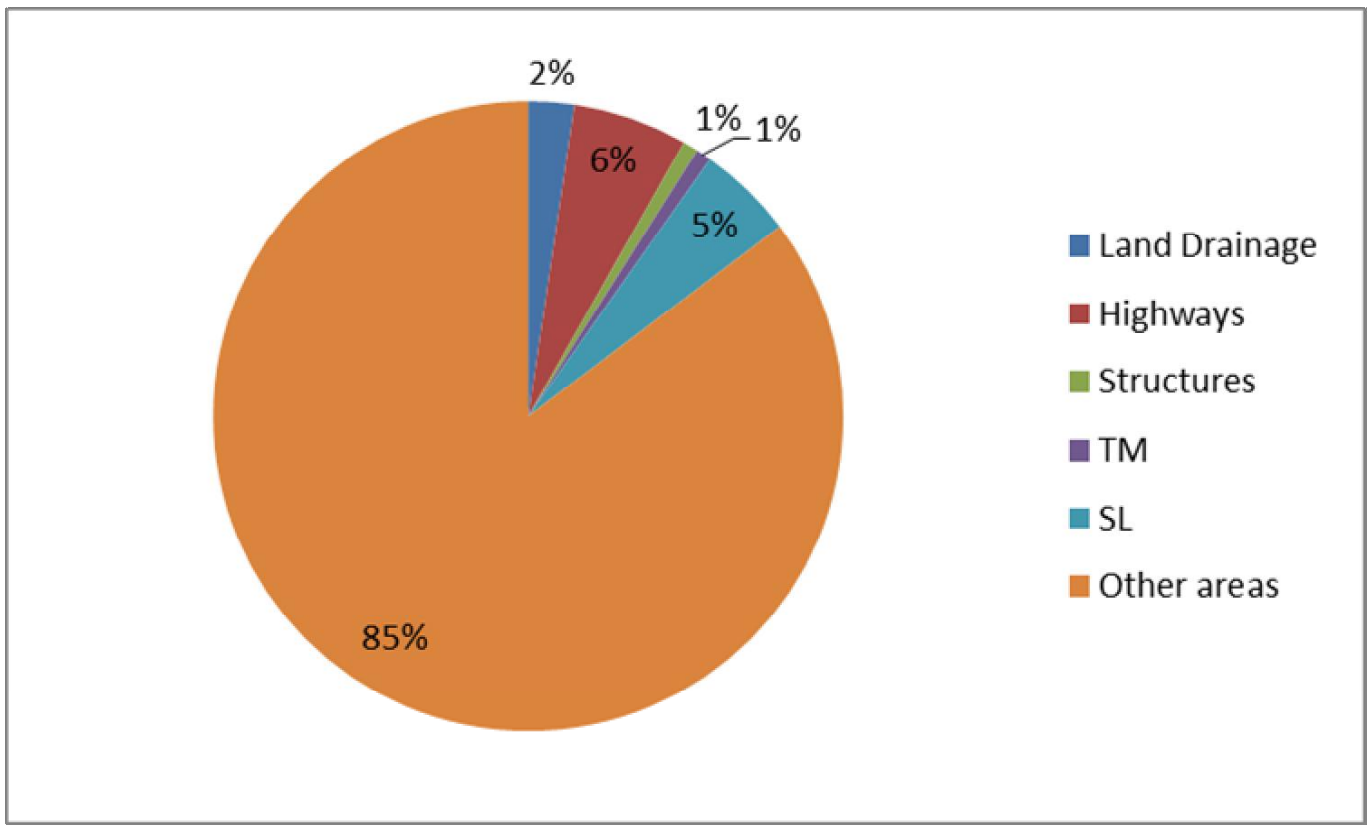

Figure 12: Indicative Revenue Budget Allocation

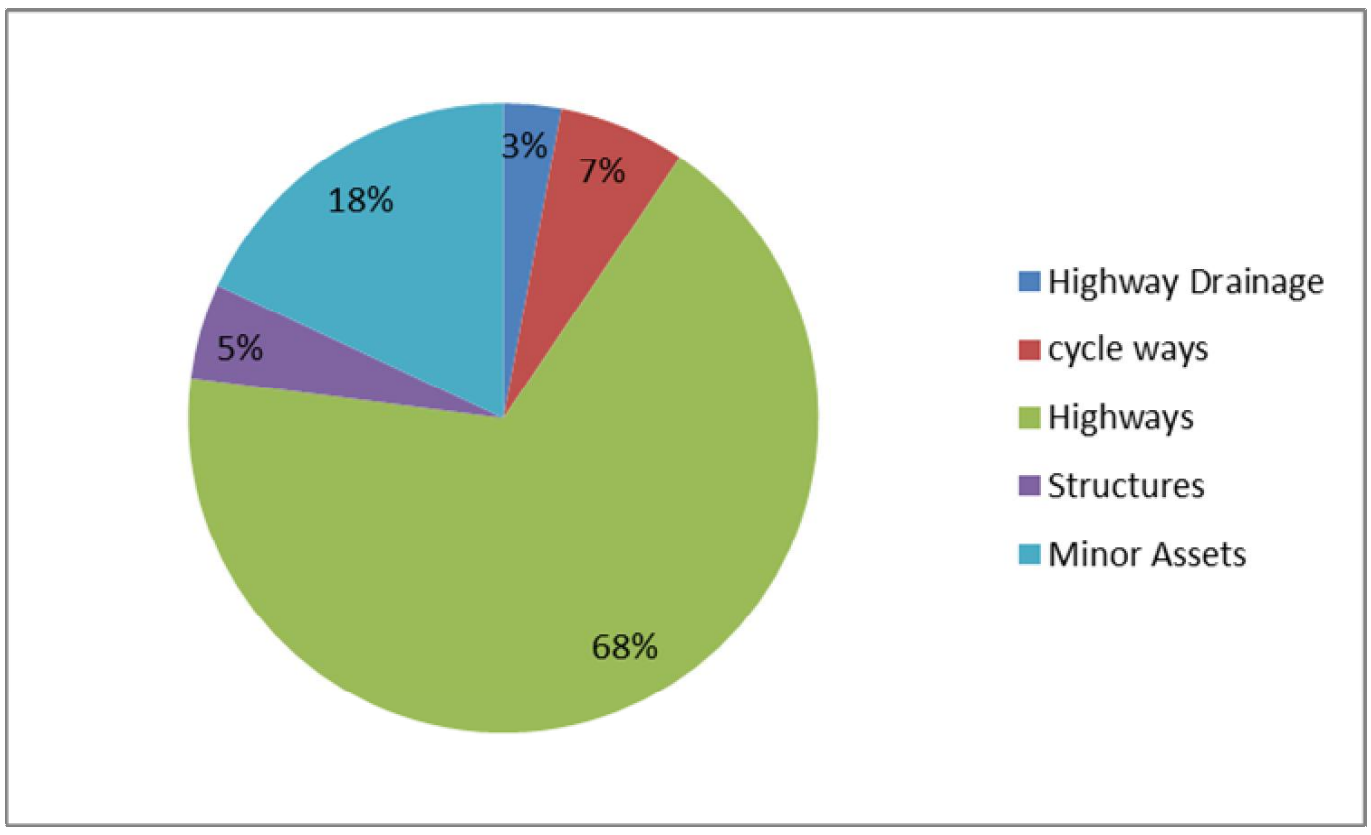

Figure 13: Indicative Capital Budget Allocation

5.3.4. The Capital maintenance programme is supported by a revenue funded programme, which targets routine and repetitive maintenance activities including winter maintenance, street lighting, public rights of way and Street Scene.

5.3.5. Understanding the condition of assets and their associated risks across the network allows budgetary decisions be made from an informed position. In addition understanding the whole life cost and life cycle options for assets allows investment decisions to be made or, where appropriate, delayed.

5.4. Financial Budgeting and Planning

5.4.1. Financial statements will provide a systematic link between the services delivered and the resources consumed, incorporating reliable and material information that can be compared with other similar data in a consistent manner. Financial management systems will recognise the need for the delegation of financial accountability to be consistent with delivering high standards of customer responsiveness. They should, preferably, enable easy electronic data exchange between the client and the service provider. Budgeting principles for highway maintenance will provide the necessary levels of flexibility in order to deliver value for money based on the following considerations:

- The integration of scheme planning and programming, within the context of asset management, is likely to require greater flexibility than has previously been the case.
- The differing life expectancy of various treatments and their future implications for the balance of capital/revenue funding.
- The seasonal and weather sensitive nature of many treatments and the service as a whole.
- The uncertainties in predicting winter and severe weather Service costs..
- The increasing trend in weather emergencies and the need to provide for these.

5.4.2. The highways maintenance budget will reflect the *Code of Practice on Local Authority Accounting in the UK,* based on a rolling minimum 3-year period and be included as part of the TAMP. It will be subject to appropriate monitoring arrangements that will form a key aspect of contract management for the delivery of best value.

5.5. Asset Valuation

5.5.1. Transportation and highway infrastructure represent makes up largest asset owned by the Council. We recognise the importance of these assets and the service they provide to users. The value of the assets will be calculated annually so that investment in maintenance and improvements can be measured against deterioration in condition. This will ensure that a balance can be established in developing maintenance budgeting policies.

5.5.2. The Council is obliged to provide asset valuations to central government for consolidation within the Whole of Government Accounts. This will be undertaken in line with government set accounting standards and provided in accordance with set timescales. A summary of valuations for 2015 is provided below in Table 7:

5.5.3. Gross replacement cost valuation (GRC) is a valuation figure of the cost of replacing the asset with a modern equivalent asset using standardised unit rates. Accumulated consumption (AC) is the depreciation in value due to age, usage, deterioration, damage, obsolescence and reduced service level. Depreciated replacement cost (DRC) is equal to GRC – AC.

Table 7: Summary of Asset Valuation and Depreciation 2015

Asset Type	Carriageway	Footways Cycle tracks	Structures	Lighting	Traffic Mgmt.	Street Furniture	Total
	Figures below - £,000s						
Gross Replacement Cost Closing Balance	2,503,106	171,391	261,092	15,078	9,093	23,284	5,494,663
Closing Net Book Value (DRC)	2,400,906	88,378	179,870	6,470	5,273	10,525	5,203,041
% depreciated	4%	49%	31%	57%	42%	55%	5%
Accumulated Depreciation Opening Balance	93,888	82,760	78,682	8,075	3,411	11,077	277,893
Accumulated Depreciation Closing Balance: (i.e. the sum needed to restore the asset to new condition)	102,200	83,013	81,222	8,609	3,820	12,759	291,623
In year Depreciation (amount needed to be invested to keep asset condition at a steady state)	8,312	253	2,540	533	409	1,682	13,730
Rate of annual deterioration	0.0037%	0.0028%	0.014%	0.08%	0.078 %	0.16%	0.0026%
2016/17 budget (£,000)	1,600	33	294	83	66	30	2,400
% of actual budget vs. depreciation-deterioration	19%	15%	12%	16%	16%	2%	15%

6. Service Delivery

6.1. Introduction

6.1.1. The undertaking of targeted and value-optimised maintenance is the tangible outcome of the asset management planning process. These maintenance works will align with the strategy laid out in this document to enable the Levels of Service to be achieved. Works will be delivered via annually planned capital, planned cyclical and reactive emergency and routine works.

6.1.2. Activities are programmed and prioritised in respect of:

- **Statutory requirements** - where the Council has an obligation to maintain the network in a safe and useable state as required by the Highways Act, the New Roads and Street Works Act, and as identified by safety inspections and condition surveys.
- **Core objectives** - Wherever possible it is attempted to achieve a balance between the core objectives, but the inventory type, condition, usage and available budget generally determine the relative priorities.
- **Maintenance category** - once the required work has been considered in respect of the statutory requirement and the core objectives, a decision is made as to the type of work carried out: reactive, routine or programmed. It may be that the required work will require a combination of the maintenance categories to ensure a steady state condition over the asset's lifecycle. This concept will be dealt with in more detail in the specific Lifecycle Plans
- **Risk Based Approach** – Where appropriate, a risk based approach that is detailed in the HMP and the asset specific LCPs.

6.2. Reactive Maintenance

6.2.1. Urgent works will address defects that present a safety risk or where structural deterioration is imminent.

6.3. Planned cyclical

6.3.1. Planned cyclical maintenance will be pro-actively undertaken to ensure the serviceability of certain assets. This will be targeted at assets where failure or falling below the required level of service is not acceptable. For example flood-preventing drainage assets such as grills.

6.4. Non-Urgent Programmed Maintenance

6.4.1. Defects that do not present a safety risk or where the asset condition is stable in the short term will be dealt with via the capital works programme. The development of the works programme involves the identification, prioritisation, optimisation, development of an annual programme of schemes and then their delivery. This section describes how this will be undertaken.

6.4.2. The process for how defects will be dealt with via programmed activities is detailed below:

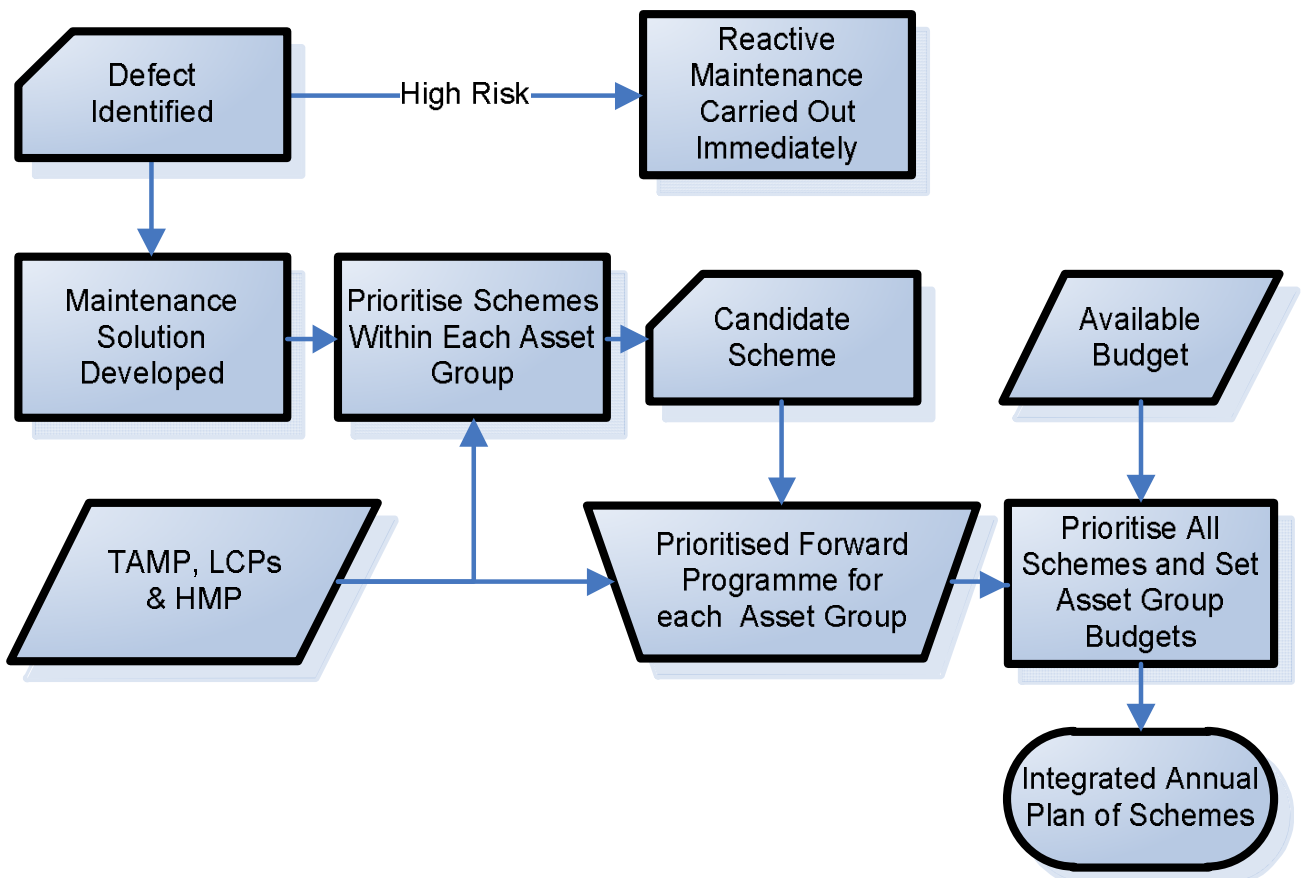

Figure 14: Defect Resolution and the Forward Programme

6.5. Identification of Candidate Schemes

6.5.1. Defects are typically identified by one of the following pathways:

- During routine asset inspections.
- During non-asset inspections, such as safety inspections.
- Enquiries stemming from routine inspections that are then investigated by Asset Management staff.
- Enquiries from stakeholders that are then investigated by Asset Management staff.

6.5.2. Defects will be initially reviewed and categorised based on the risk they present. Defects that result in a high safety/structural risk or need minor non-urgent repairs will be resolved within an appropriate timescale via reactive maintenance. Defects that do not represent an imminent safety/structural risk will be logged as a candidate scheme within each asset group for consideration in the Forward Programme of works.

6.6. Prioritisation, Forward Programme and Annual Plan

6.6.1. Each individual asset group will have a desired level of service identified by its Lifecycle Plan and Annual Plan which defines the standard required for that asset. To ensure the budget is utilised in the most effective way possible to achieve the required level of service, candidate schemes will be assessed and prioritised within their asset group. The assessment will take account of the following factors associated with the LTP objectives:

- Safety
- Socio-economic
- Environmental
- Value of Money
- Stakeholder engagement
- Whole-life Costing
- Risk

6.6.2. We actively seek feedback and comments from Council Members and Parish Councillors before, during and after highways works. We talk to local Councillors to find out about their priorities and consult on a regular basis to ensure we are delivering against the political objectives. We are keen to ensure that we address the key highway issues faced by local people and carry out effective consultation with local Councillors as part of our aim to give everyone an opportunity to have their say.

6.6.3. Key Stakeholders will be consulted during the development of prioritisation systems.

6.6.4. Within each asset group the prioritised schemes will make up a forward programme of maintenance works. This will typically cover a three to five year period of works and indicatively indicate future maintenance investment works.

6.6.5. Annually a holistic approach will be utilised to consider priorities between asset groups and allocate budget between them. Based upon the available annual budget for an asset group, an Annual Plan of works that will be delivered will be developed. This process will include consultation with key stakeholders. If the level of service for an asset group is unable to be achieved based on the allocated of budget then the level of service and budget will be reviewed and revised as necessary.

6.6.6. The Annual Plan will be made up of each year's activity as required to progress the top priority schemes identified in the Forward Programme within each asset group and that that can be pursued within the available budget.

6.7. Delivery

6.7.1. Delivery of the Annual Plan of works will be project managed to ensure it is delivered to cost and programme.

6.8. Variations to the Annual Plan

6.8.1. Should a defect arise that cannot be resolved by minor reactive maintenance works and where failure to resolve the issue could result in injury or structural collapse the works will be considered against schemes in the current Annual Plan of works. If practical and the defect is assessed to be of higher priority than current schemes the defect will be replaced by the lowest priority scheme. Otherwise it will be reprogrammed in the forward programme for future years.

7. Risk Management

7.1. Introduction

7.1.1. A risk can be defined as:

> "an uncertain event, which, should it occur, will have an effect on the desired performance of an asset or series of assets. It consists of a combination of the likelihood of a perceived threat or opportunity occurring, and the magnitude of its impact on the objectives…" "

7.1.2. The implementation of the Asset Management Plan requires the management of a variety of risks at strategic, tactical and operational levels. The likelihood and consequences of these risks are used to inform and support the approach to asset management and inform key decisions including performance, investment and the implementation of works programmes.

7.1.3. When identifying and evaluating risks the most commonly understood risks relate to safety. However there is a wide range of other risks which are important to the asset management process and are routinely considered. These include:

- Safety
- Reputation
- Asset loss or damage
- Service reduction or failure
- Operational delivery
- Environmental
- Financial
- Contractual

7.1.4. Risk and review processes are also considered for significant events like accidents, incidents or the impacts of climate change to ensure the appropriate contingency planning is in place and business continuity is managed.

7.2. Approach to Risk Management

7.2.1. Risks are managed at the appropriate level using the Council's Performance, Risk and Opportunity Framework, enabling comparison of risks across the service delivery.

- 'Corporate' high level risks such as corporate reputation, business continuity, legal and financial risk for both Herefordshire Council and Balfour Beatty Living Places are identified and reviewed by senior decision makers and reported to the Strategic Management Board.
- 'Strategic' and 'Tactical' risks affecting the management of the highway infrastructure are considered centrally (through SHE policies and procedures), and locally within the Herefordshire Public Realm contract team and reported to the Operations Board.
- 'Operational' risks are managed locally as part of the delivery of operational activities, through the Herefordshire Public Realm Contract.

7.2.2. When considering risks associated with asset management, an assessment will provide an understanding of:

- Which assets are critical to the local community, have the highest economic importance and contribute to the wider function of the network
- What affects the delivery of the required level of service, including stakeholder expectations
- The level of funding needed to maintain performance

- What level of risk is acceptable
- Options to mitigate risks identified as unacceptable

7.2.3. This plan shall adopt partnership risk management processes to assess and adapt mitigation measures to identified risks.

7.2.4. Risks are managed at an appropriate level within the organisation where control measures can be implemented. Where risks cannot be managed at lower levels they will be elevated to the appropriate level.

7.3. Critical Assets

7.3.1. A view of critical assets informs the Asset Management Plan, and the decision processes, these are detailed in the specific LCPs. Assessing the consequence or impact of an asset failure requires consideration of safety, health and environmental impacts as well as an understanding of the function the asset performs. Critical asset are those that are essential for supporting the social and business needs of local and / or national economy.

7.3.2. Where critical assets and infrastructure are identified, adequate management of the assets via a risk based plan, including appropriate investment, shall be considered as part of the Lifecycle Plan to ensure they are sufficiently resilient to cope with potential threats.

7.3.3. Critical assets and infrastructure are identified within individual asset group lifecycle plans.

7.4. Identifying Risks

7.4.1. At the strategic and tactical level examples of risks considered as part of the TAMP include:

Planning Risks	Strategic planning Asset management strategy Performance and level of service Asset management planning Funding and investment Climate Change / weather events and environmental
Management Risks	Leadership and organisation Stakeholder and communication Information and data People, including competency Financial IT and asset management systems
Delivery Risks	Procurement Cost Works programming Scheme identification and design Contract management Project management
Asset Risks	Risks common to all assets including investment, performance and loss of service Risks associated with specific asset groups and types (such as severe consequence of failure, accessibility and construction)

7.4.2. A detailed risk register, recording all relevant risks, agreed mitigation and assignment of risks will be managed and reviewed by the individual asset group leads. The information will inform the prioritisation of investment, which is detailed annual as part of the asset group's Annual Plan annexe.

7.4.3. A Risk Action Plan consolidating the risk register, evaluation, mitigation, resources, timeframes and responsibilities will be maintained. This information will form part of the asset group's Annual Plan annexe and support the lifecycle planning process and works programming processes.

8. Monitoring and Continual Improvement

8.1.1. Asset performance and the delivery of the service through the Asset Management system is monitored through a measurement framework. As well as monitoring the performance of assets, the performance of the asset management system as a whole is measured (i.e. it's effectiveness and efficiency of processes and activities in place for Transport asset Management). This is a clear requirement of the Plan Do Check Act approach, Figure 15:

Figure 15: Plan Do Check Act

8.1.2. Performance measures include regularly updated Performance Dashboards used to monitor key elements of the service on a month by month basis, presenting summary information. Monitoring of the effectiveness of our approach to asset management, it's processes and procedures will be completed through internal and external audit at annual intervals. This ensures the asset management system conforms, and the expectations of stakeholders and the Business Operating Model are met.

8.1.3. The performance measures and targets are aligned to the Herefordshire Public Realm vision and goals, as outlined in the LTP. The performance measures provide feedback and understanding about the physical asset and are an essential part of risk management and the Asset Management Decision Making process.

8.1.4. **Levels of Service** - A key aspect of the delivery of Highway Infrastructure services is the link between Levels of Service and how they relate to asset users and community priorities. Performance measures are used to monitor whether the service delivered is meeting the agreed Levels of Service.

8.1.5. Performance measures to monitor, record and report on service delivery relative to the agreed range of levels of service are detailed in Section 2 of this TAMP. The performance measures include nationally recognised indicators as well as key performance indicators.

8.1.6. Performance targets are reviewed and agreed on an annual basis to ensure they remain affordable and reflect the levels of service and aims and objectives of the Herefordshire Public Realm.

8.1.7. **Social Value** – The Public Services (Social Value) Act 2012 requires us to consider securing social, economic and environmental benefits when delivering services. Monitoring of these benefits is focused through the Involved Community Investment Programme. Delivered across all projects and depots, Involved sets requirements which are broken down into three areas :

- Employment & Skills – Graduate programme, apprenticeships, work experience
- Community Engagement – Volunteering, mentoring, Considerate Constructors Scheme and charitable fundraising
- Supporting Local Business – Local procurement and SME procurement spend and social enterprises

8.1.8. Opportunities for improvement are identified during internal audit. Information from audits monitors the appropriateness and effectiveness of the asset system and enables objectives for continual improvement to be set.

8.1.9. Improvement actions will be programmed and monitored by the following activity check points:

Table 8: Monitoring Check Points

1. Performance Indicators	Monthly monitoring for those aspects that can be reported monthly.
2. Improvement and Innovation Register	Business Improvement and Innovation Register kept and managed through the Continuous Improvement Cluster Group.
3. Annual Planning and Reporting	The annual programme and budget setting cycle will in future incorporate an annual plan report that will detail performance to date of the asset and performance of the management team in delivering the contents of the improvement action plan.
4. The Transport Asset Management Plan	A formal review will be carry out at 2nd, 5th and 10th years but annually reporting on progress.

8.2. Improvement Action Plan

8.2.1. The current Improvement Action Plan has been derived from the information and data available to produce the TAMP including the workshops and public consultation. The below actions are being addressed via a continuous improvement cluster group.

Table 9: Improvement Action Plan

Action No.	Improvement Action	Priority
1	On-going review and update the Asset Data Matrix GAP Analysis, included in Appendix A.	Low
2	Where identified in the Asset Data Matrix, collection of asset data to enable asset management.	Medium
3	Develop a joint Data Quality Management System, in line with ISO 19157, ISO 9000 & ISO 19158 and implemented.	High
4	Develop and implement inspection/assessment regime for retaining wall and small structures. Developed as part of the Structures LCMP.	High
5	Develop Asset Management approach for Street Lighting and Traffic Signals.	High
6	Develop and implement Communications Strategy	Medium
7	Develop 3 year forward programmes of maintenance works for all major asset groups.	Medium
8	Identification of a Resilience Network, in accordance with the 2014 Transport Resilience Review	Medium
9	Contingency Plans are in place or Critical Assets	Medium
10	Update policies to ensure maintain the Resilience Network influences decision making processes	Medium
11	The Appetite to risk is to be clarified and documented	Medium
12	‘Lessons Learnt’ to be documented	Medium
13	HMP Update to include recommendations of 2012 HMEP Pothole Review and implementation of update approach	Medium

Action No.	Improvement Action	Priority
14	Achieve accreditation to BS11000 for collaborative working with the supply chain	Medium
15	Undertake a Lean Review using the HMEP Lean Toolkit on the highway maintenance service	Medium
16	Identify Critical Assets for each major asset class	Medium

Appendix A – Asset Data Matrix and GAP Analysis

Asset Classsification and Inventory Data Review

Classification of Highway Assets			Attributes (What is required)					Asset Team Custodian		Survey / Data Knowledge (What we have)				Data Management					Data Collection (Strategy for Achieving Target Inventory Knowledge)					Maintenance & Inspection						
Level 1 Asset Feature	Level 2 Asset group	Level 3 Components	Attribute 1	Attribute 2	Attribute 3	Attribute 4	Attribute 5	Data Lead	Risk assessment: Catergory	% Inventory Complete	Confidence: Green = High Amber = Med Red = Low	Date or status of survey	Method of Survey or Condition assessment	Data to be stored in GIS (Y/N)	Data to be stored in HORIZONS (Y/N)	Data Transfer HC / BBLP Herefordshire	Data to be stored in Confirm (Y/N)	Asset Register held on:	Already held (Y/N)	Further Data collection required? (Y/N)	Proposed Collection by	Data Validation Interval / FREQ	Validation (10% of Inventory)	Maintenance Approach	Inspection Regime	Interval	Inspector	Inspection Regime In place	Maintenance Works	Comments
Carriageway	Pavement Construction	Hierarchy & Location	Road number	PMS reference	USRN	Simple XSP		Craig Doyle	Ancillary	100%		Historic	Review GIS & UKPMS database	N	Y	N	N	UKPMS / GIS	Y		/		UNK	Reactive / Corrective	Scheduled	Monthly	Specialist Sub-contract: WMD	Y	N/A	Review of Heirarchy required
	Flexible	Carriageway dimensions	Length	Width	Area			Craig Doyle	Ancillary	50%		Historic - Ongoing	GIS / Visual Inspection	N	Y	N	N	UKPMS / GIS	Y	Y	/		UNK	Reactive / Corrective	Scheduled	Monthly	Specialist Sub-contract: WMD	Y	N/A	Collection of width of carriageway / Approximate rd width given by road classification in HORIZONS
	Flexible Composite	Pavement Layers	Material	Thickness				Craig Doyle	Ancillary	10%		Ongoing	Visual Inspection	N	Y	N	N	UKPMS / GIS	N	Y	Historic Records		UNK	Reactive / Corrective	Scheduled	UNK	LS / Assm Technician	Y	N/A	
	Rigid Concrete	Road Condition Indices	Survey type	RCI				Craig Doyle	Safety	100%		2015	SCANNER & CVI surveys	N	Y	N	N	UKPMS	Y	N	/		UNK	Reactive / Corrective	Scheduled	Yearly	Specialist Sub-contract: WMD	N	N/A	2015 Data to be imported into HORIZONS
	Rigid Composite	Programme of Works	Unique_ID / Location	Type	Date	Material	Length of Treatment	Joe Neil / Samuel Bareham	Ancillary	100%		Ongoing	Visual Inspection	Y	Y	N	N	GIS	N	Y	Mapping Records / Visual Inspection		UNK	Preventative	Scheduled	UNK	Highways Operative / Assm Technician	N/A	Planned	Material type data to be identified through hard copy records in order to map binder sites / intervention levels
		Traffic calming	Yes / No	Type	Number of TC features			Asset Team Lead	Safety	0%		Ongoing	Visual Inspection/Deskop	UNK	UNK	UNK	UNK	UNK	N	Y	Part of inventory data collection		UNK	Preventative	Scheduled	UNK	UNK	N	N	Requires full network assessment and data framework / specification. Output needed: Initial desktop exercise with input
		Highway Extents	Unique_ID / Location	Remarks / Ref	Drawn By / Date Created			Andy Byng HC	Tertiary	75%		Ongoing	Historical Records / Site Inspection	Y	N	Y	N	GIS	Y	Y	Mapping Records / Visual Inspection		UNK	N/A	N/A	N/A	N/A	N/A	N/A	
		Car Parks	Object_ID	Establishment_Name	Area sq m	Surface Type		Samuel Bareham	Tertiary	50%		2014	UNK	Y	N	N	N	GIS	Y	Y	/		UNK	UNK	UNK	UNK	UNK	UNK	N	
		Anti Skid Sites	Unique_ID / Location	Condition	Cost Data	Approx Length	Method of Application	Mark Lewis HC	Safety	75%		2016	Historical Records	Y	Y	N	Y	UNK	Y	Y	Site Visit - Visual Inspection		UNK	Reactive / Corrective	UNK	UNK	UNK	UNK	Reactive / Preventative	Length and LSG Site data created - Mark Lewis AT to undertake further detailed site analysis in order to calculate maint costing -
		Accident Data	Location	Severity	Description			Mark Lewis HC	Safety	100%		Ongoing	Visual Inspection/Deskop	Y	Y	Y	N	UNK	Y	Y	/		UNK	Preventative	Scheduled	UNK	UNK	N	N	Data to be input into Confirm / Routine Maint Req against Acc Sites - Walked Inspection, Currently part of monthly driven insp
		Kerbs	Type	Length	Kerb height	Condition		Asset Team Lead	Safety	0%		Ongoing	Desktop Exercise	UNK	UNK	N	N	N/A	N	/	Footway DVI Survey - already commissioned		UNK	Reactive / Corrective	AD HOC	UNK	Locality Stewards	UNK	Reactive Repair Works	Route Mapper Data ?
		Line markings	Location	Type (TSRGD)	Condition rating			Asset Team Lead	Safety	0%		Ongoing	Visual Inspection	UNK	UNK	N	N	N/A	N	/	Part of inventory data collection Requires clarification re level of compliance with		UNK	Reactive / Corrective	Scheduled - Driven / Night	Yearly	Locality Stewards	Y	Reactive Repair Works	Route Mapper Data ?
		Road studs A + B rds	Location	Number	Type	Colour	Gap Size	Asset Team Lead	Safety	100%		2010	Asset Survey	Y	N	N	N	GIS	Y	Y	Part of inventory data collection		UNK	Reactive / Corrective	Scheduled - Driven / Night	Yearly	Locality Stewards	Y	Reactive Repair Works	
		Visibility Fences	Unique_ID / Location	Type	Ownership	Length / Height	Condition	Asset Team Lead	Safety	100%		Ongoing	Visual Inspection / Desktop Exercise	Y	N	N	Y	Confirm / GIS	N	Y	Mapping records / visual inspection		UNK	Reactive / corrective	Scheduled	UNK	Locality Stewards	Y	N	Initial VIS FENCES Layer created 14/09/2015
Footways & Cycle tracks	(attached to the road or segregated)																													
	Pedestrian areas		Length	Width	Area			Craig Doyle	Ancillary	0%		Ongoing	Visual Inspection	Y	Y	N	N	GIS / UKPMS	N	Y	Footway DVI Survey - except stand alone cycletrack		UNK	Reactive / Corrective	Scheduled	/	UNK	N	/	
	Footway (Roadside)	Footway Dimensions	Survey Type	Condition Indices	Footway Hierarchy	PMS reference	Simple XSP	Samuel Bareham	Safety	0%		2014?	FNS Survey	Y	Y	N	Y	GIS / UKPMS	N	Y	Historic Records / Mapping Digitisation Exercise REQ		UNK	Reactive / Corrective	Scheduled	/	LS / Assm Technician	Y	Y	Footway alignment is mirror of road centreline being of insufficent accuracy with Horizons
	Divorced Footpaths	Condition	Location	Length	Footway Hierarchy	condition		Samuel Bareham	Safety	100%		2014 / 2015	GIS / FNS Survey	Y	Y	N	Y	GIS / UKPMS	Y	Y	/		UNK	Reactive / Corrective	Scheduled	Annual	LS / Assm Technician	N	Reactive	80 FNS Errors (Naming Conventions / Corrupt Data) - COMPLETE Data Validation - TO BE COMPLETED
	Cycletracks	Surface types	Location	Length	Cycleway Hierarchy	Tarmac Ulticlour	Material Type	Samuel Bareham	Ancillary	0%		Ongoing	Desktop Exercise / Previous Records	Y	Y	Y	Y	GIS / UKPMS	N	Y	Footway DVI Survey - already commissioned		UNK	Reactive / corrective	/	/	UNK	N	Reactive	Hard Copy Plans produced by Minor Plans Team. To be electronically captured within GIS
	PROW	Footpath	Reference	Parish Num	From / To	Notes		Mike Mable	Ancillary	100%		Ogoing	UNK	Y	Y	Y	Y	GIS / PROW TEAM	Y	/	/		UNK	Reactive	Reactive	/	Locality Stewards / PROW Team	/	Reactive	
		Bridleway	Reference	Parish Num	From / To	Notes		Mike Mable	Ancillary	100%		Ongoing	UNK	Y	N	Y	Y	GIS / PROW TEAM	Y	/	/		UNK	Reactive	Reactive	/	Locality Stewards / PROW Team	/	Reactive	
		Byway	Reference	Parish Num	From / To	Notes		Mike Mable	Ancillary	100%		Ongoing	UNK	Y	N	Y	Y	GIS / PROW TEAM	Y	/	/		UNK	Reactive	Reactive	/	Locality Stewards / PROW Team	/	Reactive	
		Restricted Byway	Reference	Parish Num	From / To	Notes		Mike Mable	Ancillary	100%		Ongoing	UNK	Y	N	Y	Y	GIS / PROW TEAM	Y	/	/		UNK	Reactive	Reactive	/	Locality Stewards / PROW Team	/	Reactive	
		All Circular Walks	Name	Reference	Section	Status	Length km	Mike Mable	Ancillary	100%		Ongoing	UNK	Y	N	Y	N	GIS / PROW TEAM	Y	/	/		UNK	Reactive	Reactive	/	Locality Stewards / PROW Team	/	Reactive	
Street furniture	Transport	Traffic signs (non-illuminated)	Location	Type (TSRGD)	Mounting	Unique ID	Condition	Asset Team Lead	Safety	0%		Ongoing	Visual Inspection	Y	N	N	Y	GIS	N	Y	Part of inventory data collection		UNK	UNK	Scheduled	/	Locality Stewards	UNK	UNK	
	Highway	Pedestrian barriers	Location	Type	Condition			Asset Team Lead	Safety	100%		Ongoing	Visual Inspection	Y	N	N	Y	GIS	Y	N	/		UNK	Reactive / Corrective	Scheduled	/	Locality Stewards	UNK	UNK	ASSET GROUP: HW06 / 177 As @ 14/09/2015
	Streetscene/amenity	Street name plates	Location	Type (Material)	Mounting	Condition		Asset Team Lead	Tertiary	0%		Ongoing	Visual Inspection	Y	N	N	/	GIS	N	Y	Part of inventory data collection		UNK	UNK	Scheduled	/	Locality Stewards	N	Cleansing / Repair Works	
		Slippery Road Signs	Location	Direction of Travel	Distance Covered Plate	Condition	Photo Link	Craig Doyle	Safety	100%		Oct-15	Visual Inspection	Y	N	N	Y	Confirm	Y	N	Site Survey / Visual Inspection		UNK	Cyclical / Reactive	Scheduled	/	Locality Stewards / ASSM Team	N	Reactive	Full data review undertaken Oct 15, input into Confirm in order to be able to raise enq, defects, jobs against assets COMPLETE
		Bollards	Location	Type	Function	Condition		Asset Team Lead	Safety	0%		Ongoing	Visual Inspection	/	N	N		GIS	N	Y	Part of inventory data collection		UNK	Reactive	UNK	UNK	Locality Stewards	UNK	UNK	
		Bus Shelters	Unique_ID	ATCO Code	Owner	Condition	Date Last Cleaned / Inspected	Herefordshire Passenger Transport team / Asset Team	Safety	UNK		Ongoing		Y	N	N	Y	Omnibus / Confirm	Y	Y	Data Share - Hfds Passenger Trans Team		UNK	Cyclical / Reactive	Scheduled	Annually	Locality Stewards	N	Cleansing / Repair Works	Desire to link Herefordshire Passenger Transport team Bus Shelter Inventory database (Omniflag), with our CONFIRM database.
		Grit bins	Unique_ID	Location	Type	Capacity	Condition	Nick Davies/Contractor	Safety	100%		Ongoing	Cyclical Grit Bin filling	Y	N	Y	Y	Confirm	Y	/	/		UNK	Cyclical / Reactive	WINT MAINT Scheduled	Annually (Seasonal)	Locality Stewards	N	Reactive	
		Life Buoy Data	Unique_ID	Location	Condition			Asset Team Lead	Safety	100%		UNK	Visual Condition Assessment	Y	N	N	Y	Confirm	Y	Y	/		UNK	Cyclical / Reactive	Scheduled	Weekly	Locality Stewards / Street Cleansing	Y	/	
		Seating & Benches	Location	Type	Material	Condition		Asset Team Lead	Tertiary	0%		Ongoing	Visual Inspection	Y	N	N	N	GIS	N	Y	Part of inventory data collection		UNK	Reactive / Corrective	/	/	Locality Stewards	N	UNK	
		Verge marker posts	Location	Type	Height	Condition		Asset Team Lead	Safety	0%		Ongoing	Visual Inspection	Y	N	N	Y	GIS	N	Y	Part of inventory data collection		UNK	UNK	UNK	UNK	Locality Stewards	N	UNK	
		Cattle Grids	Location	Dimensions	Insp / Schedule	Condition		George Shingler	Safety	50%		Ongoing	Visual Inspection	Y	N	N	Y	GIS	Y	Y	Mapping records / visual inspection		UNK	Cyclical	Scheduled	Annually	Locality Stewards	N	Cleansing	Data held to be validated / completed. Data to be input into Confirm - Darren Merrill - COMPLETE FEB 16
		Trees	Location	Type	Condition	Height	Photo Link	Sean Pockett	Tertiary	100%		North H - 2010 South H - 2012	Condition Survey	Y	N	N	Y	GIS	Y	Y	/		UNK	Reactive	/	/	Locality Stewards	N	Cut	Survey carried out by Future Arbor Ltd 2010/2012 Data to be input into confirm through project undertaken by
	Street Cleansing	Litter Bins	Unique_ID	Location	Type	Condition	Date Last Cleaned	Tom Hill	Tertiary	100%		/	Routine Bin Emptying	Y	N	Y	Y	Confirm	Y	/	Visual Inspection / Routine Maintenance		UNK	Cyclical	Scheduled	Various	Street Cleansing Team	N	Cleansing	Assets being collected in confirm / Street Cleansing Routes currently under review. Adoption of 347 FCC Bins @ 15 Jan 15 -
		Dog Waste Bin	Unique_ID	Location	Type	Condition	Date Last Cleaned	Tom Hill	Tertiary	100%		/	Routine Bin Emptying	Y	N	Y	Y	Confirm	Y	/	Visual Inspection / Routine Maintenance		UNK	Cyclical	Scheduled	Various	Street Cleansing Team	N	Cleansing	
		Needle Bin	Unique_ID	Location	Type	Condition	Date Last Cleaned	Tom Hill	Tertiary	100%		/	Routine Bin Emptying	Y	N	Y	Y	Confirm	Y	/	Visual Inspection / Routine Maintenance		UNK	Cyclical	Scheduled	Various	Street Cleansing Team	N	Cleansing	
	Property	Address Find	Address Details	Easting / Northing	Organisation/Classification	Tertiary Description		HOOPLE HC	Tertiary	100%		/	UNK	Y	N	Y	N	GIS	Y	/	/		UNK	N/A	N/A	N/A	N/A	N/A	N/A	
		Herefordshire Housing	Object_ID	Title	Plan	Area		HOOPLE HC	Tertiary	100%		/	UNK	Y	N	Y	N	GIS	Y	/	/		UNK	N/A	N/A	N/A	N/A	N/A	N/A	
Vegetation	BBLP	All Grass Areas	Location	Site Code	Cut Type	Area sq m	Cut FREQ	Sean Pockett	Tertiary	100%		Ongoing	Visual Inspection	Y	N	Y	Y	Confirm / GIS	Y	Y	AD HOC - Locality Stewards		UNK	Cyclical	Scheduled	Various	Locality Stewards	Y	Cut	
		Visibility Splay	Location	Route Area	Site Ref	Area SqM	Insp / Schedule	Sean Pockett	Safety	100%		Oct-14	Site survey / Visual Inspection	Y	N	N	Y	Confirm / GIS	Y	/	AD HOC - Locality Stewards		UNK	Cyclical	Scheduled	Various	Locality Stewards	Y	Cut	Data to be input in Confirm through desktop exercise, merging local knowledge, accident site data and highway vis fence data.
		Roadside Verges Botanical	Location	Site No	Length	Species	Insp / Schedule	Sean Pockett	Tertiary	100%		Jul-14	Visual Inspection	Y	N	N	Y	Confirm / GIS	Y	/	AD HOC - Locality Stewards		UNK	Cyclical	Scheduled	Various	Locality Stewards	N	Plant	Data to be input into Confirm for scheduled maintenance
		Japanese Knotweed / Ragwort	Location	Asset Description	Insp / Schedule			Sean Pockett	Safety	100%		Complete	Visual Inspection / Schedule	Y	N	N	Currently not held within Confirm	GIS	Y	Y	AD HOC - Locality Stewards		UNK	Reactive	AD HOC	Various	Locality Stewards	N	Removal	Data created from old records 24/06/2015.Confirm import file to be created and insp regime
	HC	HC Grass	Location	Site ID	Maint Schedule (Priority)	Area SqM		HC	Safety	100%		Ongoing		Y	N	N	N	GIS	Y	N	AD HOC - Locality Stewards		UNK	Cyclical	Scheduled	Various	Locality Stewards	Y	Cut	
		Establishments / Property	Location	Property Type / Subtype	Area SqM			HC	Ancillary	100%		Ongoing	UNK	Y	N	N	N	GIS	Y	N	AD HOC - Locality Stewards		UNK	UNK	AD HOC	UNK	Locality Stewards	N	/	
		HC Hedges	Location	Site ID	Cut Freq	Cut Detail	Area SqM	HC	Safety	100%		Ongoing	UNK	Y	N	N	N	GIS	Y	N	AD HOC - Locality Stewards		UNK	Reactive	AD HOC	UNK	Locality Stewards	N	Reactive	
		HC Play_Areas	Location	Asset Description	Condition / Rating	Insp / Schedule		HC	Safety	100%				Y	N	N	N	GIS	Y	Y	AD HOC - Locality Stewards		UNK	Reactive	AD HOC	UNK	Locality Stewards	N	Reactive Repair Works	
		HC Seasonal Beds	Location	Site Name / ID	Type	Area SqM	Condition	HC	Tertiary	100%		Review Planned	UNK	Y	N	N	N	GIS	Y	Y	AD HOC - Locality Stewards		UNK	Reactive	Scheduled	UNK	Locality Stewards	N	Seasonal	
		HC Shrubs	Location	Site Name	Area SqM	Condition		HC	Tertiary	100%				Y	N	N	Y	Confirm / GIS	Y	Y	AD HOC - Locality Stewards		UNK	UNK	UNK	UNK	UNK	N	Seasonal	Data to be input into confirm. Import file built. Inspection Regime to be created within Confirm - COMPLETE Asset Type
Bridges / Structures	Cantilever road sign	All elements identified on the CSS inspection proforma	Location	Number				Chris Wright	Safety	100%		Ongoing	Visual Inspection	Y	N	N	UNK	AMX	Y	N	Part of inventory data collection		UNK	Reactive	Reactive	As required	Bridge Inspector	N	Reactive	
	Chamber / Cellar / Vault		Location	Extents				Chris Wright	Safety	75%		Historic	Visual Inspection	Y	N	N	UNK	AMX	Y	N	Not part of current inventory data proposals		UNK	Reactive	Reactive	As required	Bridge Inspector	N	Reactive	
	Culverts (not structures)	Small water carrying structures are considered road drainage	Location	Extents	Sizes	Safe Access	Maint. Regime	Joel Hockenhull	Safety	75%		Historic	Visual Inspection	Y	N	Y	Y	Confirm	Y	N	Mapping records / visual inspection		UNK	Reactive	Reactive	Various	Drainage Technician	N	Reactive	Historic Records kept by divisonal surveyors
	Retaining Walls (not Structures)		Unique_ID	Location	Drawings Held	Comments		Chris Wright	Safety	80%		Historic	Visual Inspection	Y	N	N	Y	AMX	N	Y	Mapping records / visual inspection		UNK	Reactive	Scheduled	Every 2 Years	Bridge Inspector	Y	Reactive	
	Bridge - Road / Rail / Footway		Unique_ID	Location	Span	Description		Chris Wright	Safety	100%		Historic	Visual Inspection	Y	N	Y	Y	AMX	Y	N	Needs inputting onto CONFIRM		UNK	Preventative	Scheduled	Bi-annual + Principal every 6 years	Bridge Inspector	Y	Reactive	Data to be input into confirm in order for operatives to be able to raise defects against - COMPLETE FEB 16 - AMX Development
	Assessed Load Limits		Unique_ID	Location	40T LIMIT	Axle Load	Ownership	Chris Wright	Safety	100%		Historic	Visual Inspection	Y	N	Y	N	GIS	Y	N	/		UNK	N/A	N/A	N/A	N/A	N	Reactive	
	Highway Safety Barrier/Fences		Location	Type	Compliance	Condition		Chris Wright / Jess Erhabor	Safety	90%		Ongoing	Visual Inspection	Y	N	Y	Y	AMX	Y	N	Needs inputting onto CONFIRM		UNK	Reactive	Scheduled	Every 2 Years	Barrier Inspector	Y	Reactive	Assets on A40 Ross to County Bury to be confirmed. Asset prioritised into forward programme of works for 2016,
	Sign / signal gantries & cantelver road signs		Location	Length				Chris Wright	Safety	100%		Ongoing	Visual Inspection	Y	N	N	UNK	AMX	N	Y	Part of inventory data collection		UNK	Reactive	Scheduled	Every 2 Years	Bridge Inspector	Y	Reactive	
	Structural earthworks (Embankm'ts & cuttings		Location	Extents				Chris Wright	Safety	100%		Ongoing	Visual Inspection	Y	N	N	N	AMX	N	Y	Mapping records / visual inspection		UNK	Reactive	Scheduled	Every 2 Years	Bridge Inspector	Y	Reactive	
	Subway : pipe		Location	Extents				Chris Wright	UNK	0%		UNK	UNK	Y	N	N	N	AMX	N	Y	Not part of current inventory data proposals		UNK	Reactive	Scheduled	Every 2 Years	Bridge Inspector	Y	Reactive	
	Underpass / subway: peds		Location	Extents				Chris Wright	UNK	0%		UNK	UNK	Y	N	N	N	AMX	N	Y	Part of inventory data collection		UNK	Reactive	Scheduled	Every 2 Years	Bridge Inspector	Y	Reactive	
	Underpass: vehicular		Location	Extents				Chris Wright	UNK	0%		UNK	UNK	Y	N	N	N	AMX	N	Y	Part of inventory data collection		UNK	Reactive	Scheduled	Every 2 Years	Bridge Inspector	Y	Reactive	
	Rock Slopes		UNK	UNK	UNK	UNK	UNK	Asset Team Lead	UNK	0%		UNK	UNK	Y	N	N	N	GIS	N	Y	/		UNK	Reactive	Reactive	As required	Bridge Inspector	N	Reactive	
	PROW Structures Span > 7.5m		Unique_ID	Location	Span	Description		Chris Wright	UNK	100%		Ongoing	Visual Inspection	Y	N	Y	Y	AMX	Y	Y	PROW Team		UNK	Reactive	Scheduled	Every 2 Years	Bridge Inspector	Y	Reactive	Significant suspension bridges on Footway/PROW network
	Special Structure		Location	Extents				Chris Wright	UNK	100%		Ongoing	Visual Inspection	Y	N	N	Y	AMX	N	UNK	/		UNK	Reactive	Scheduled	Every 2 Years	Bridge Inspector	Y	Reactive	
Drainage	Highway Drainage	Gullies	Location	Type	Condition	Insp_regime	Date of last Insp	Joel Hockenhull	Ancillary	50%		Ongoing	Routine Gully Maintenance	Y	N	N	Y	Confirm / GIS	N	Y	Hand held GPS		UNK	Preventative + Reactive	Risk Based Preventative	N/A	N/A	N/A	High risk: 6monthly Medium risk: Annual Low risk: Reactive	Risk based approach to identify preventative maintenance where required, reactive maintenance for low risk gullies. (poor coverage in BUA). Data capture exercise to be undertaken in
		Drains	Location	Alignment	Diameter			Joel Hockenhull	Ancillary	0%		Ongoing	Alignment by jetting, Size by	Y	N	N	Y	UNK	N	Y	Hand held GPS		UNK	Preventative + Reactive	Scheduled	10 years	Drainage Field Technician	N	Cleansing	Cleansing history to be built up and flooding records reviewed. Up to 10 years in low risk areas.

Asset Classsification and Inventory Data Review

Classification of Highway Assets				Attributes (What is required)						Asset Team Custodian		Survey / Data Knowledge (What we have)				Data Management					Data Collection (Strategy for Achieving Target Inventory Knowledge)					Maintenance & Inspection						
Level 1 Asset Feature	Level 2 Asset group	Level 3 Components		Attribute 1	Attribute 2	Attribute 3	Attribute 4	Attribute 5		Data Lead	Risk assessment: Category	% Inventory Complete	Confidence: Green = High Amber = Med Red = Low	Date or status of survey	Method of Survey or Condition assessment	Data to be stored in GIS (Y/N)	Data to be stored in HORIZONS (Y/N)	Data Transfer HC / B&LF Herefordshire	Data to be stored in Confirm (Y/N)	Asset Register held on:	Already held (Y/N)	Further Data collection required? (Y/N)	Proposed Collection by	Data Validation Interval / FREQ	Validation (50% of Inventory)	Maintenance Approach	Inspection Regime	Interval	Inspector	Inspection Regime in place	Maintenance Works	Comments
		Covers / Chambers		Location	Type	Condition	Size			Joel Hockenhull	Ancillary	0%		Ongoing	Technician survey	Y	N	N	Y	UNK	N	Y	Site Sketches, GPS		UNK	Reactive	Reactive	N/A	Drainage Field Technician	N	Cleaning	
		Oil Interceptors		Location	Type	Condition	Size			Joel Hockenhull	Ancillary	0%		Ongoing	Technician survey	Y	N	N	Y	UNK	N	Y	Experienced Staff, Site Inspections		UNK	Preventative	UNK	annually	UNK	UNK	UNK	HC maintained oil interceptors to be identified on GIS for annual cleansing.
		Soakaways		Location	Diameter	Depth				Joel Hockenhull	Ancillary	0%		Ongoing	Resolution of poor drainage	Y	N	N	Y	UNK	N	Y	Reactive inspection		UNK	Reactive	Not possible to inspect	N/A	N/A	N/A	Reactive	Locality Stewards to ID issues should they arrive.
		Filter Drains/Fin Drains		Location	Diameter	Depth				Joel Hockenhull	Ancillary	0%		Ongoing	Resolution of poor drainage	Y	N	N	Y	UNK	N	Y	Reactive inspection		UNK	Reactive	Not possible to inspect	N/A	N/A	N/A	Reactive	Records are scarce, monitor and cleanse gravel on reactive basis
		Grips		Location	Type	Ditch	Condition			Joel Hockenhull	Ancillary	33%		Ongoing	Routine Maintenance	Y	N	N	Y	GIS	N	Y	Hand held GPS		UNK	Reactive	Reactive	N/A	Drainage Field Technician	N	Reactive	Cleared as required. Cyclical clearance rate on primary routes to be defined based on traffic flow. High risk assets identified and cyclical programme in place
		Trash Screens on Highway Drains		Location	Size					Joel Hockenhull	Ancillary	0%		Ongoing	Routine Maintenance	Y	N	N	Y	UNK	N	Y	Reactive inspection GPS		UNK	Preventative	Risk Based Preventative	Monthly	Locality Stewards	UNK	As necessary	
		Piped Grips/Kerb Offlets/Kerany Blocks		Location	Alignment	Diameter				Joel Hockenhull	Ancillary	0%		Ongoing	Routine Gully Maintenance	Y	N	N	Y	UNK	N	Y	Reactive inspection		UNK	Preventative + Reactive	Risk Based Preventative	3 years max	N/A	N	High risk: Annaithly Medium risk: Annual Low risk: 3 years	Based on assessed flood risk and historic reactive performance data. Moderate risk areas may extend to three years. Piped grips to be monitored annually.
		Manholes / Catchpits		Location	Type	Condition	Sizes			Joel Hockenhull	Ancillary	25%		Ongoing	Technician survey	Y	N	N	Y	GIS	N	Y	Site Sketches, GPS		UNK	Reactive	Reactive	N/A	Drainage Field Technician	N	Cleaning	
		Culverts (Adj / Road / Priority)		Location	Dimensions	Alignment	Condition	Size		Joel Hockenhull	Ancillary	50%		Ongoing	Visual Inspection	Y	N	N	Y	Confirm / GIS	N	Y	Site Sketches, GPS, CCTV		UNK	Reactive	Reactive	N/A	CCTV Inspection	N	Reactive	
		Hydro brakes & Tank Sewers		Location	Make & Model					Joel Hockenhull	Ancillary	0%		Ongoing	Targeted inspection	Y	N	N	Y	UNK	N	Y	Site Notes		UNK	Preventative	Scheduled	annually	Drainage Field Technician	N	Cleaning	
		Highway Ditches		Location	Condition	Dimensions	Ownership			Joel Hockenhull	Ancillary	0%		Ongoing	Routine Maintenance /	Y	N	N	Y	UNK	N	Y	Mapping records / visual inspection		UNK	Preventative + Reactive	Risk Based Preventative	3 years max	Locality Stewards	N	High risk: annual Medium risk: 3 years	HC maintainable ditches to be identified on GIS. Significant ditches that have spilled causing flooding of property
		Balancing Ponds		Location	Sizes					Joel Hockenhull	Ancillary	0%		Ongoing	Routine Maintenance	Y	N	N	Y	UNK	N	Y	Hand held GPS		UNK	Preventative	Risk Based Preventative	annually	Locality Stewards	N	High risk: annual Medium risk: 3 yr	Clearance regime based on cost benefit approach and/or health and safety risk
		Pumps & Other specialist equipment		Location	Make & Model	Age	Life expectancy			Joel Hockenhull	Ancillary	0%		Ongoing	Routine Maintenance	Y	N	N	Y	UNK	N	Y	Technician Visit / Records		UNK	Preventative	Preventative	In accordance with Manufacturers instructions	Drainage Field Technician	N	Routine Servicing	
		SUDS		Location	Type	Condition	Sizes			Joel Hockenhull	Ancillary	0%		Ongoing	Planning Applications	Y	N	N	Y	UNK	N	Y	Historic adoption records		UNK	Preventative + Reactive	Risk Based Preventative	annually	Drainage Field Technician	N	As necessary	
		Swales																														
		Headwalls		Location	Type	Sizes	Safe Access	Maint. Regime		Joel Hockenhull	Ancillary	0%		Ongoing	Planning Applications	Y	N	N	Y	UNK	N	Y	Reactive Inspection - Drainage Technician N/S		UNK	Preventative + Reactive	Risk Based Preventative	N/A	Drainage Field Technician	Y		
	Flood Risk	Headwalls, Inlets and Outlets		Location	Dimensions	Alignment	Condition			Joel Hockenhull	Ancillary	25%		Ongoing	Visual Inspection	Y	N	N	Y	Confirm / GIS	Y	Y	Archives, GPS, CCTV		UNK	Reactive	Reactive	n/a	CCTV Inspection	TBC	Reactive	
		Flow Restricter		Location						Joel Hockenhull	Ancillary	0%		Ongoing	Visual Inspection	Y	N	N	Y	/	N	Y	/		UNK	Reactive	Reactive	/	/	TBC	/	
		Bunds and Flood Defences		Location	Alignment	Dimensions	Condition	PAWA		Joel Hockenhull	Ancillary	0%		Ongoing	Visual Inspection	Y	N	N	Y	Confirm	Y	Y	Archives, GPS		UNK	Reactive	Scheduled	annually	Drainage Field Technician	TBC	Reactive	
		Penstocks		Location	Size					Joel Hockenhull	Ancillary	0%		Ongoing	Visual Inspection	Y	N	N	Y	Confirm	Y	Y	Archives, GPS		UNK	Preventative	Scheduled	annually	Drainage Field Technician	TBC	Reactive	
		Trash Screens, Grills																														
		Weirs																														
	Land Drainage	Inlets Headwall / Chamber		Location	Size					Joel Hockenhull	Ancillary	0%		Ongoing	Routine Maintenance	Y	N	N	Y	UNK	Y	Y	Reactive inspection GPS		UNK	Preventative	Risk Based Preventative	annually	Locality Stewards	Y	Reactive	
		Maintained Water Courses		Location	Lengths : ends	Critical Ordinary				Joel Hockenhull	Ancillary	0%		Ongoing	Visual Inspection	Y	N	N	Y	UNK	N	Y	Mapping records / visual inspection		UNK	Preventative + Reactive	Risk Based Preventative	annually	Locality Stewards	Y	Planned	
		Grill Insp Data		Location	Feature ID	Inspection Route / Schedule	Condition			Joel Hockenhull	Ancillary	100%		Ongoing	Visual Inspection/Desktop	Y	N	N	Y	GIS	Y	Y	Reactive inspection		UNK	Reactive	Reactive	Monthly (Fortnightly) or as Required	Drainage Field Technician	Y	Reactive	Data captured electronically from historical records as @ 04/07/2015.
		Ditches		Location	Ownership	Length				Joel Hockenhull	Ancillary	0%		Ongoing	Visual Inspection	Y	N	N	Y	UNK	N	Y	Mapping records / visual inspection		UNK	Preventative + Reactive	Risk Based Preventative	annually	Locality Stewards	N	Planned	
		Sluices		Location	Size					Joel Hockenhull	Ancillary	0%		Ongoing	Visual Inspection	Y	N	N	Y	UNK	N	Y	Mapping records / visual inspection		UNK	Reactive	Reactive	3 years	Drainage Field Technician	N	Reactive	
		Outlets Headwall / Chamber & Grill		Location	Size					Joel Hockenhull	Ancillary	0%		Ongoing	Routine Maintenance	Y	N	N	Y	UNK	Y	Y	Reactive inspection GPS		UNK	Preventative	Risk Based Preventative	annually	Locality Stewards	Y	Reactive	
		Culverts		Location	Dimensions	Alignment	Condition	Size		Joel Hockenhull	Ancillary	50%		Ongoing	Visual Inspection	Y	N	N	Y	Confirm / GIS	N	Y	Site Sketches, GPS, CCTV		UNK	Reactive	Reactive	N/A	CCTV Inspection	N	Reactive	
Street Lighting	Street Lighting	LIGHTING COLUMN		Unique ID	Location	Ownership	Condition	Height / Material		James Powell	Safety	80%		/	UNK	Y	N	Y	Y	MAYRISE SL	Y	Y	Via SL Team inspections over 6 year period	As per Data Quality Plan	UNK	Reactive	Cyclical / Corrective	6 years	Street Lighting Team	Y	Reactive Repair Works	Data sent to MAYRISE 11/05/16. MAYRISE to validate and input into system.
	Traffic Signals	Bellcha Beacons		Unique ID	Location	Ownership	Condition			James Powell	Safety	50%		/	UNK	Y	N	Y	Y	MAYRISE SL	Y	Y	Via SL Team inspections over 6 year period	As per Data Quality Plan	UNK	Reactive	Cyclical / Corrective	UNK	Street Lighting Team	Y	Reactive Repair Works	
		Bollards		Unique ID	Location	Ownership	Condition			James Powell	Safety	50%		/	UNK	Y	N	Y	Y	MAYRISE SL	Y	Y	Via SL Team inspections over 6 year period	As per Data Quality Plan	UNK	Reactive	Cyclical / Corrective	UNK	Street Lighting Team	Y	Reactive Repair Works	
		Feeder Pillars		Unique ID	Location	Ownership	Condition			James Powell	Safety	50%		/	UNK	Y	N	Y	Y	MAYRISE SL	Y	Y	Via SL Team inspections over 6 year period	As per Data Quality Plan	UNK	Reactive	Cyclical / Corrective	UNK	Street Lighting Team	Y	Reactive Repair Works	
		Lit Signs		Unique ID	Location	Ownership	Condition			James Powell	Safety	50%		/	UNK	Y	N	Y	Y	MAYRISE SL	Y	Y	Via SL Team inspections over 6 year period	As per Data Quality Plan	UNK	Reactive	Cyclical / Corrective	UNK	Street Lighting Team	Y	Reactive Repair Works	
		School Flasher		Unique ID	Location	Ownership	Condition			James Powell	Safety	50%		/	UNK	Y	N	Y	Y	MAYRISE SL	Y	Y	Via SL Team inspections over 6 year period	As per Data Quality Plan	UNK	Reactive	Cyclical / Corrective	UNK	Street Lighting Team	Y	Reactive Repair Works	
		HAT PIN		Unique ID	Location	Ownership	Condition			James Powell	Safety	50%		/	UNK	Y	N	Y	Y	MAYRISE SL	Y	Y	Via SL Team inspections over 6 year period	As per Data Quality Plan	UNK	Reactive	Cyclical / Corrective	UNK	Street Lighting Team	Y	Reactive Repair Works	
		Vehicle Activated Signs		Unique ID	Location	Ownership	Condition			James Powell	Safety	0%		/	UNK	Y	N	Y	Y	MAYRISE SL	N	Y	Via SL Team inspections over 6 year period	As per Data Quality Plan	UNK	Reactive	Cyclical / Corrective	UNK	Street Lighting Team	Y	Reactive Repair Works	
		Subway		Unique ID	Location	Ownership	Condition			James Powell	Safety	50%		/	UNK	Y	N	Y	Y	MAYRISE SL	Y	Y	Via SL Team inspections over 6 year period	As per Data Quality Plan	UNK	Reactive	Cyclical / Corrective	UNK	Street Lighting Team	Y	Reactive Repair Works	
Regulatory	Natural England Constraints	Ancient Woodland		Name	Theme	Theme ID	Status	Area		Environment Agency	Tertiary	100%		/	UNK	Y	N	N	N	GIS	Y	N/A	N/A		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	Quarterly download from Natural England's website
		AONB		Code	Name	Area	Desig Date			Environment Agency	Tertiary	100%		/	UNK	Y	N	N	N	GIS	Y	N/A	N/A		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	Quarterly download from Natural England's website
		NR		Name	Unit Area	Polygon Area	NR Map Ref	Designation Status		Environment Agency	Tertiary	100%		/	UNK	Y	N	N	N	GIS	Y	N/A	N/A		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	Quarterly download from Natural England's website
		NNR		Name	NNR Area	Polygon Area	NNr Map Refe	Designation Status		Environment Agency	Tertiary	100%		/	UNK	Y	N	N	N	GIS	Y	N/A	N/A		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	Quarterly download from Natural England's website
		SAC		Name	Code	Area	Polygon Area	Grid Ref		Environment Agency	Tertiary	100%		/	UNK	Y	N	N	N	GIS	Y	N/A	N/A		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	Quarterly download from Natural England's website
		SINC		Name	Grid Ref	Area	Location	Site ID		Environment Agency	Tertiary	100%		/	UNK	Y	N	N	N	GIS	Y	N/A	N/A		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	Quarterly download from Natural England's website
		SSSI		Name	ID	Unit ID	Polygon Area	Condition		Environment Agency	Tertiary	100%		/	UNK	Y	N	N	N	GIS	Y	N/A	N/A		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	Quarterly download from Natural England's website
		SWS		Local Site ID	Site Name	Grid Ref	Broad Habitat	Change Reason		Environment Agency	Tertiary	100%		/	UNK	Y	N	N	N	GIS	Y	N/A	N/A		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	Quarterly download from Natural England's website

Attribute Colour Coding

Attributes that are required for current condition assessment & for Basic Asset Management

Attributes that are **not currently held within Asset Inventory.**

Attributes that required for life-cycle planning and advanced asset management

Data collection process currently being undertaken

Inventory Data Status

70-100%	
30-70%	
0-30%	

Risk Assessment Catrorary

Safety	Assets that could have a significant impact on highway safety (e.g. safety barriers)
Ancillary	Assets that help keep the network in place (eg drainage systems)
Tertiary	Assets that have less impact on safety or the structural condition of the network (e.g. boundary fences)

Reactive	
Reactive / corrective	Used for non-critical items where failure can be allowed
Preventative - Cyclical	maintained on set regime

Inspection Regime
cyclical / interval
Scheduled

Appendix B – Summary of key strategic NHT Survey Results

Indicator Reference	Benchmarking Indicator	2013	2014	2015
KBI 11	Overall satisfaction with pavements and footpaths	50.1	47.5	54
KBI 15	Overall satisfaction with the local rights of way network	56.3	52.5	55
KBI 18	Satisfaction with management of road works	54.0	51.7	51
KBI 23	Overall satisfaction with the condition of highways	13.4	18.8	27
KBI 25	Overall satisfaction with street lighting	64.3	61.8	62
HMBI 01	Satisfaction with the condition of road surfaces	12.6	16.5	30
HMBI 02	Satisfaction with the cleanliness of roads	48.5	47.7	53
HMBI 03	Satisfaction with the condition of road markings	44.6	46.8	52
HMBI 07	Satisfaction with the speed of repair to damaged roads and pavements	11.8	14.3	23
HMBI 08	Satisfaction with the quality of repair to damaged roads and pavements	19.3	20.7	29
HMBI 12	Satisfaction with keeping drains clear and working	38.7	34.9	47
HMBI 17	Satisfaction with how the Council undertakes cold weather gritting (salting) and snow clearance	61.4	57.5	59
	Total Customer Satisfaction Results	39.6	39.2	45.17

Appendix C– Lifecycle Plans

The following Lifecycle Plans and summaries have been developed for the major asset groups. These documents are reviewed on a more frequent basis that the TAMP so are held as separate files. The Summaries are published alongside the TAMP.

- Carriageways
- Footways and Cycleways
- Structures
- Drainage
- Street Lighting