

HIGHWAY ASSET MANAGEMENT STRATEGY



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Foreword

Plymouth's road network is used by tens of thousands of people every day, commuting to work, attending business meetings, visiting friends and family, travelling to medical appointments, taking part in social and leisure activities and much more.

It is absolutely crucial to the economic, social and environmental wellbeing of our local communities and the future prosperity of the city as a whole.



Financially, this is a very challenging time for councils but we remain committed to providing a network that is resilient, not just making repairs where needed but investing in preventative work to slow down or halt any decline in its condition.

This strategy sets out how we will manage and maintain all our highway assets, from roads, footways and bridges to streetlights, traffic signals and signs.

It outlines how we plan to meet our statutory obligations, as well as the needs of local residents and other stakeholders, in the most efficient, collaborative and cost-effective way we can.

It also shows how we do this in line with industry best practice and national guidance, including the new Highways Code of Practice, Highways Management Efficiency Programme and Department for Transport Incentive Fund recommendations.

We hope it will help to explain our responsibilities and our commitment to ensuring Plymouth has a safe and well-maintained highway network.

Councillor Sue Dann

Cabinet Member for Environment and Street Scene

I. Introduction

This Highway Asset Management Strategy has been drawn up by the Plymouth Highways Service (the service) as part of an ongoing development and review of its overall Highways Infrastructure Asset Management Plan (HIAMP). All maintenance led activities (both capital and revenue funded) are embraced, however, decisions related to capital improvement works and the transport needs of the network are not covered by this Strategy.

The effective management of our public infrastructure forms a core task for the Service and this Strategy extends the principles and practice that have been developed in the management of highway assets and applies them to the wider transport infrastructure, the largest and most valuable public asset with the Council's control, with a gross value in excess of £1.5 billion.

We understand that Asset Management is a platform to deliver clarity around standards and levels of service, and to make the best use of our available resources.

An Asset Management Policy has been developed that defines how the implantation of asset management in a systematic, considered manner which will supply Plymouth City Council in delivering its corporate vision.

This Strategy sets out how the Council will best manage the Highway Network, taking into consideration customer needs, local priorities, asset condition and the best use of available resources balanced against risk of service failure and the likely future demand for services. It has been produced following the assessment of customer needs, local priorities and asset condition. It also ensures that both short and long term needs are appropriately considered, whilst delivering a minimum whole life cost approach to our Highway Assets.

This Strategy will be used to inform priorities in the Council's business planning process and will be used to support the continuous improvement of our highway asset management by capturing the outcomes of using the optimum treatments or interventions over the whole life cycle of the different asset groups. The Strategy will be used to inform the highway maintenance schemes that are to be implemented within our medium term forward programme and delivered in our Annual Plan.

2. Asset Management Framework

This Strategy, along with its partnering Policy, sits within a wider Policy and Strategy Framework and forms a link between National and Local Transport Policy, the Council's Corporate Plan, key strategies such as the Local Transport Plan (LTP), Plymouth Plan, Stakeholder expectations, relevant guidance and legislation and operational activities (illustrated in Figure 1 below).

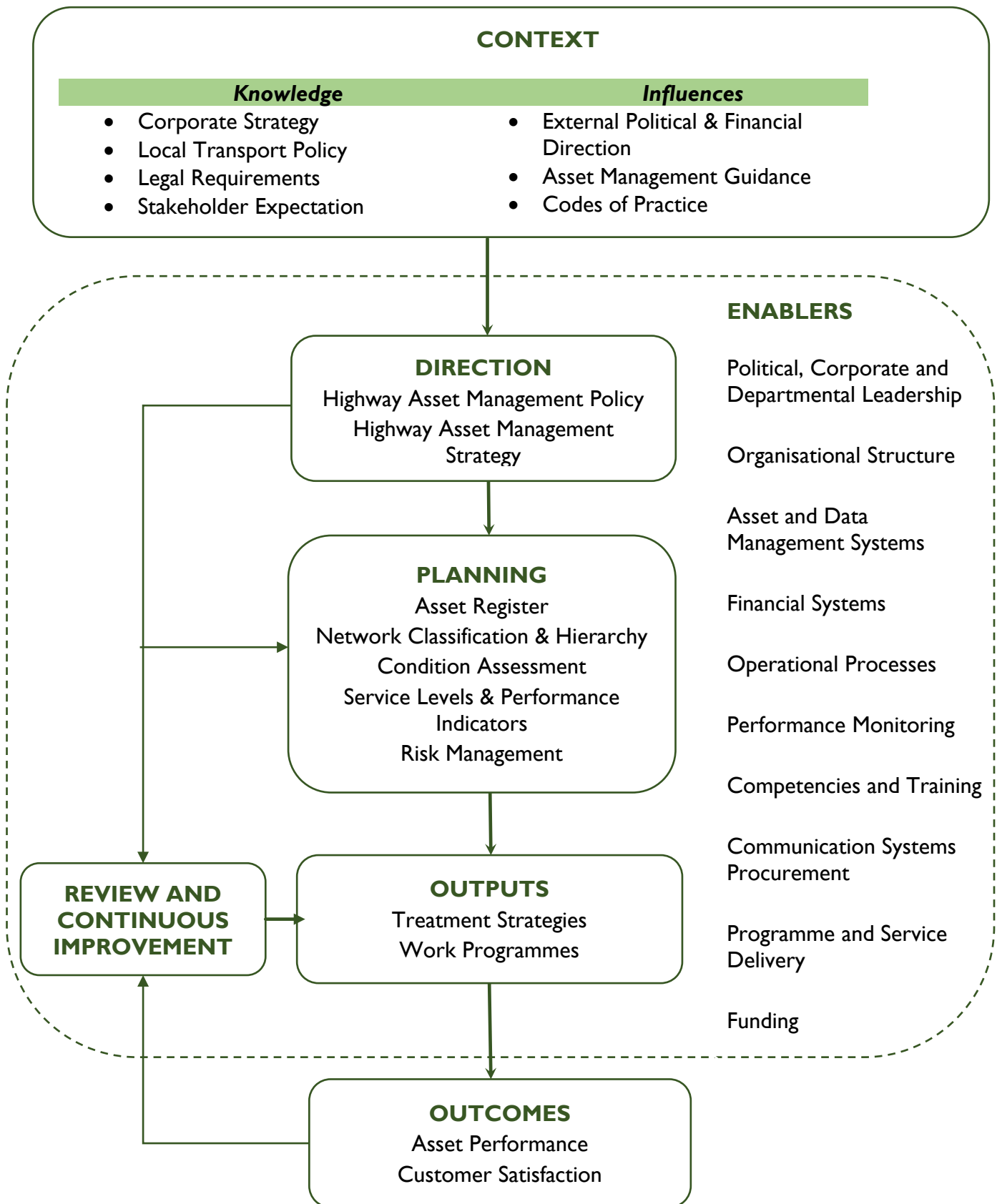
This Framework identifies the relationships between asset management, the influences of corporate and national drivers and internally the Council's Local Transport Strategy and Plan.

Taken together, this Framework describes how the service continues to work towards implementing an asset management approach to the management of the Authority's highway infrastructure and network and delivery our corporate priorities through effective, informed and defensible decision making.

These documents reflect the City Councils commitment to continue to be a responsible asset management practitioner and to become recognised as a top performing Local Highways Authority. In turn it is aimed that this will further strengthen Plymouth's position to bid for available funding as we will continue to provide confidence to awarding bodies. The documents have been written referenced against requirements set out in the DfT's Incentive Fund which asks authorities to benchmark itself against best practice criteria, Plymouth City Council currently recognises itself as a band 3 authority, the highest performing banding. The also identify how we adopt guidance laid down in the suite of national Codes, in particular those detailed in Well Managed Highway Infrastructure: A Code of Practice (UK Roads Liaison Group published October 2016).

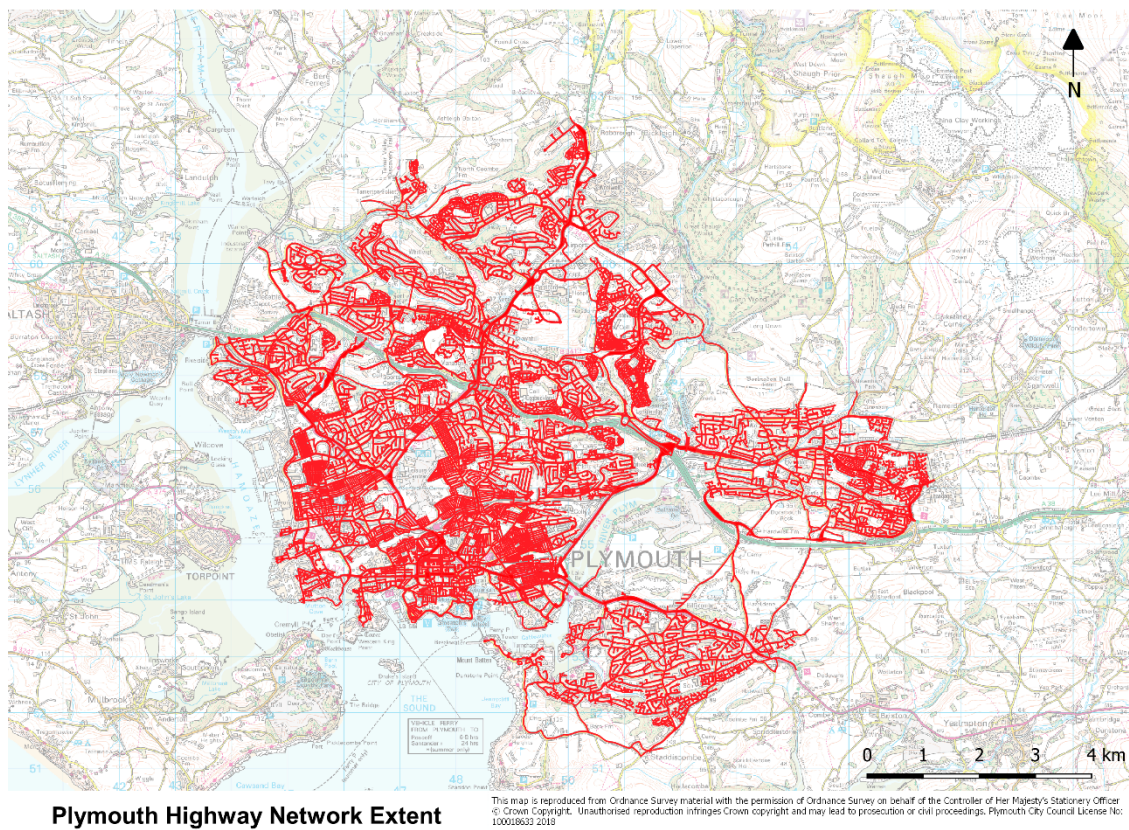
In addition to this we have worked with and identified industry best practice through membership of the South West Highways Alliance, The Association of Directors of Environment, Economy, Planning and Transport (ADEPT), Local Roads Innovation Group (LCRIG), Institute of Asset Management (IAM), Ringway Client Group - Well Managed Highway Infrastructure and working closely with our Neighbouring Highway Authority, our Highways Maintenance Provider, Institute of Asset Management (IAM) and leading industry providers.

Figure I – Asset Management Framework



3. The Asset

Plymouth City Council's highway network comprises just over 850km of carriageway. This is mostly an urban network, either classified as A, B, C roads or unclassified local roads. The unclassified network represents 78% of the overall network length. The footway and cycleway network consists of 3,350 footways and cycleways covering over 890KM. The highway asset also includes over 170 traffic signals and pedestrian crossings, 12 variable message signs and over 30,000 street lights. In terms of structures, the Council is responsible for over 170 road bridges, foot bridges, underpasses, subways, culverts, and retaining walls. The highway asset also includes over 42,000 highway gullies, drainage, street furniture, road markings and soft estate.



Above: The extent of the network of Highways Maintainable at Public Expense

The Council, as the Highway Authority, has a statutory duty to maintain the highway network in a condition to enable the safe passage of the travelling public. The City's highway network comprises of many diverse assets; this strategy describes how the principles of asset management are applied to all highway infrastructure assets that are the responsibility of the Council.

4. Gross replacement cost and depreciated replacement cost

Whole of Government Accounts (WGA) has set requirements for the way the value of the highway asset is reported to HM Treasury in the Authority's audited accounts. When the WGA process has been fully implemented, Authorities will be required to meet the strict requirements for financial reporting of their highway asset.

For this to be achieved there is a clear need for accurate and detailed inventory information and performance data. This requirement will support asset management by providing an improved understanding of network deterioration and combining that with the levels of service to be achieved.

A strategy has been developed after consultation with the Section Council's 151 Officer (PCC Chief Finance Officer) to ensure asset management practices are in place to satisfy the financial reporting requirements defined in the Transport Infrastructure Assets Code, published by the Chartered Institute of Public Finance and Accountancy (CIPFA) in May 2010.

Plymouth City Council embraces this approach and has developed the processes for collating the data needed to meet the WGA requirements, whilst developing good asset management practices that will lead ultimately, to a refinement of the service.

The Council has calculated the asset value in accordance with the requirements for Whole of Government Accounts. In July 2017, the gross replacement cost was estimated to be £1.5 billion, and the depreciated replacement cost was £1.0 billion.

5. Asset Management

Asset Management is defined as:

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

[Highway Infrastructure Asset Management Guidance – UK Roads Liaison Group (UKRLG)/ Highways Maintenance Efficiency Programme (HMEP), May 2013]

This definition puts emphasis on the part that asset management plays in managing the strategic needs of highway assets within an organisation and highlights the need for optimal allocation of resources and long term planning.

Plymouth City Council has adopted and implements asset management principles, strategies and plans as a means to face the challenges of managing the highway asset, through the development of a systematic approach to deliver the most efficient and effective maintenance regime over the lifecycle of the asset, ensuring that the performance of that asset reflects the requirements of the Council.

In addition, the Council uses asset management principles as a tool to establish appropriate budget allocations by demonstrating the effects of under-investment and the implications of not meeting safety and serviceability requirements for the customer using the network.

6. Managing the Asset

The service's initial Transport Asset Management Plan (TAMP) was developed in 2009/10 with the intention of collating asset information and producing a plan for implementing asset management principles across the service. This document continued to be developed over 2010/11, 2011/12 and 2012/13, delivering in some areas but never really realising its full intention or potential. Some of the notable achievements of the TAMP include:

- Completing a review of the Safety Inspection process in response to increasing numbers of red claims
- Implementing electronic systems for Safety Inspections and repair of defects using handheld technologies
- Adoption of GIS as the primary asset database, collating and developing inventory and condition information for several asset groups
- Development of Engineering Standards for Carriageway and Footway assets

The TAMP served as a basis for the development and implementation of a successor detailed Highway Infrastructure Asset Management Plan (HIAMP) reflecting changes in the organisation, its technologies and its processes

The HIAMP informs priorities in the planning and delivery process and supporting continual improvement in the management of the highway asset including how national developments and good practice are taken into consideration.

The core elements of this approach are set out in the subsequent sections of this document and encompass:

- Data Management and Information Systems
- Performance Framework
- Risk Management

The Council has established an organisational structure (Figure 2) that reflects the importance that asset management plays in the delivery of its highways and transport services.

The responsibility for delivery of this Framework sits with the Council's Plymouth Highways Service. Plymouth Highways is a collaborative partnership between the City Council and the South West Highways (SWH) Limited acting as the Principal Contractor for the Highways Maintenance Contract (2017) and was established following a procurement exercise undertaken in accordance with Highways Maintenance Efficiency Programme

(HMEP) principles. Partnering takes place at both strategic and operational levels, with co-location of staff and a common branding, in order to work more efficiently and provide the Local Authority with greater value for money. It involves both parties working together under joint working arrangements to manage risk, reduce waste and improve the overall quality of service. The partnership has been assessed by external assessors to be in compliance with BS 11000 for Collaborative Business Relationships, which assures successful application of mutually beneficial collaboration, improved decision making through clearly defined roles and responsibilities, more efficient sharing of skills, costs, risks, and resources.

Their aim is to provide a strategic lead for the successful adoption and implementation of this strategy, and to raise the level of awareness, effectiveness and implementation of asset management principles across the service.

The structure enables the development, continual review and embedment of strategic documents and promotes asset management practices.

Figure 2 – Strategic Partnering Board



7. Strategy for Individual Assets

As part of the highway asset management framework, and in accordance with other national guidance, the highway infrastructure assets have been divided into individual asset groups. Each group is then broken down into asset components and maintenance activities. The asset groups and components are described in the following sections.

A key function of the asset management process is to understand the spending needs of each asset group, component and maintenance activity against performance, aims and objectives. This means understanding funding needs to meet:

- Plymouth Corporate Plan Objectives
- Our Local Development Framework – The Plymouth Plan
- Our Local Transport Plan – LTP
- Service Level and Performance Targets

Inherent to this process is the need to understand the influence of budget decisions on customer satisfaction and delivery of the corporate priorities. This approach allows for the available budgets to be split at a strategic level based on a common set of criteria. Successful implementation of this approach relies on a good understanding of the various service levels that may be achieved for the different funding options.

This understanding can only be achieved through reliable, current and robust data. Plymouth City Council has developed a range of data and information capture systems and processes, which prioritises its data collection needs, data management requirements and the IT infrastructure necessary to process, manage and present this information. Disparate systems have been replaced or brought together in a new Highways Information Management System (HIMS) which has been procured and is in the process of being implemented. HIMS includes the Yotta asset register, asset modelling tools, integration of street works, highways, tax orders, inspections and real-time payment mechanisms. The Highways Hub enables transparent access and sharing of data through a standard platform with Council and SWH staff. HIMS also incorporates a number of specialist systems from outside the Yotta suite of products, including Bridgestation, Gaist Assetstream and a suite of products from Buchannan Computing (AccsMap, ParkMap), amongst others. The quality and completeness varies across asset groups and efforts continue to develop this further.

8. Asset groups and components

Plymouth's highway infrastructure has been divided into key asset groups in line with the Chartered Institute of Public Finance and Accountancy (CIPFA) reporting framework:

Table I – Asset Groups

ASSET GROUP	ASSET COMPONENT
Carriageway	Carriageway
Footways and cycle tracks	Footways, cycleways and shared surfaces
Structures	Bridges, culverts, retaining structures etc.
Lighting	Street lights, illuminated traffic signs and bollards
Traffic management	Traffic signals, information signs, VMS and control equipment
Drainage	Road gullies, carrier drains, manholes, pump stations and chambers
Street Furniture	Grit bins, public transport infrastructure, on street parking infrastructure

This approach has been adopted to allow a clear understanding of budget allocation across different asset components and facilitating the recording of where money is invested linked to expenditure on activities.

Identifying where money is invested, allows the Council to monitor performance against service delivery and the implementation of a continuous improvements process, within the constraints of available funds.

The service is also responsible for the following other transport assets not currently included within this system:

- Highway Maintainable at Public Expense (HMPE) Soft Estates – verges, trees, etc.
- Council Owned Surface level and multi-storey car parks
- Park and Ride facilities
- Public Slipways, Moorings and associated safety equipment

In order to maximise the effectiveness of our data management and provide a robust and consistent approach across the Service, all highway assets have been consolidated within HIMS.

9. **Asset Management planning**

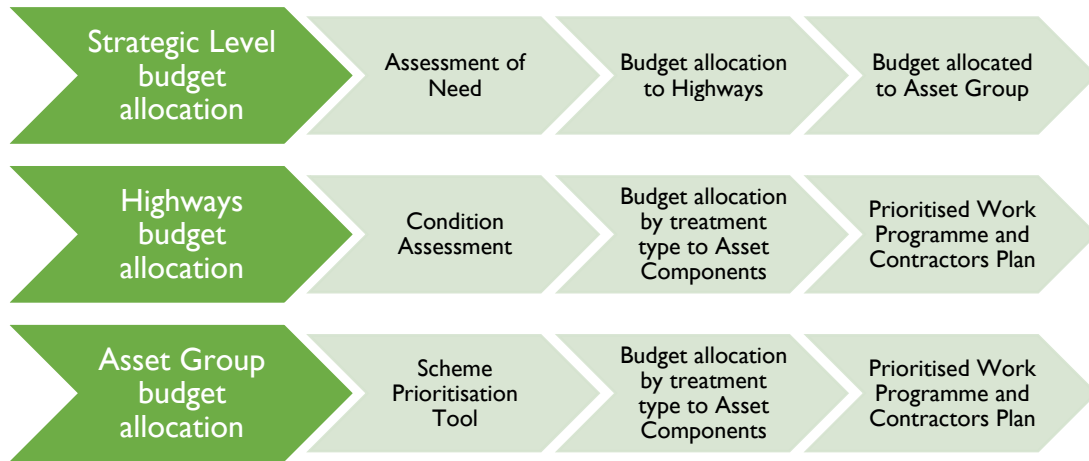
The Asset Management Strategy supports continual review and improvement of its processes and procedures, ensuring, as far as possible, that the standards identified in relevant legislation and codes of practice are adopted and that our customers receive a good and efficient service that reflects the resources available. At the asset group level, the forward looking (3yr/5yr) work programs are prepared allowing the Council to develop a longer term programme of work. This approach can be critical where short duration windows of opportunity exist to carry out preventative treatments, such as application of surface treatments or protective coating systems.

Currently, Revenue expenditure is allocated on a historic basis and Capital expenditure by means of rigorous scheme by scheme assessment. The City Council is moving towards a refined budget allocation process, depicted in Figure 3 below, relating high level aspirations to scheme level decisions using processes and tools to inform budget distribution at the strategic and asset group level. At the strategic level, in broad terms, three treatment sets are considered:

- Planning maintenance – replace or enhance
- Preventative maintenance – arrest deterioration, prolong lifecycle
- Reactive maintenance – maintain public safety

Targeted investment and informed decisions are therefore encouraged, to deliver the “right treatment at the right time, in the right place”, by identifying the level of service that can be achieved for a given budget allocation.

Figure 3 – Plymouth City Council Budget allocation process



10. Performance framework – levels of service and lifecycle planning

Levels of Service are defined by the County Surveyors Society (CSS) Framework for Highway Asset Management as “*the quality of the service for the asset for the benefit of the customers*”.

As a form of asset management objective, ‘Levels of Service’ are a series of public facing high level statements which outline how this plan aims to deliver on corporate, engineering and stakeholder objectives. They are linked to completed works through the Lifecycle Management Plans (see below) for each asset group, providing a “line of sight” between the high level objectives of this plan and works carried out on the ground.

The following highways objectives have been established:

- Keeping our City moving
- To ensure that our customers feel safe, and are confident about personal safety, when they use the highway asset
- To provide our customers with a reasonable level of confidence that their journey on the highway asset, by any mode of transport, will be predictable and timely
- To ensure that the highway network is available and accessible, as far as possible

- To reduce the environmental impact of the highway asset to the benefit of our customers and the locality
- To maintain the condition of the Strategic Routes and the Local Resilient Network at an agreed level
- To maintain the remaining highway asset at an agreed level and quality commensurate with its use and purpose
- To respond to the repair of highway defects within the timescales defined in the Highway Safety Inspection Manual
- To minimise highway flooding by enhanced maintenance of the highway drainage assets

Targets and Performance Measures to monitor whether Plymouth City Council is meeting the objectives are considered in more detail in the associated asset Lifecycle Plan at the tactical and operational level, and are reported at the Strategic Level as follows:

OBJECTIVE	KPI DESCRIPTION	CRITERIA	TARGET
To ensure that our customers feel safe, and are confident about personal safety, when they use the highway asset	To confirm compliance with PCC Policy for safety defect repair within time	% response to defects within Policy timescales	96% (To be renewed annually - every March)
To provide our customers with a reasonable level of confidence that their journey on the highway asset, by any mode of transport, will be predictable and timely	To monitor compliance with Noticing and inspect on the Employer's Network Management Duty. (The KPI also acts as an indicator of effective programme planning and responsiveness)	The % of complaint noticing on a 12 month rolling average	90%
To ensure that the highway network is available and accessible, as far as	To confirm compliance with the Employer's policy for emergency	% of responses within police timescale	99% (To be renewed)

OBJECTIVE	KPI DESCRIPTION	CRITERIA	TARGET
possible	response to highway incidents		annually - every March)
	To confirm compliance with the Employer's policy for emergency response to highway incidents	% of compliance with Employer's policy	100%
To reduce the environmental impact of the highway asset to the benefit of our customers and the locality	To monitor the provision of accurate works programme	Number of occurrences where programmes are not available/current	Max 10 per rolling year
	To monitor the effectiveness of public information in terms of: Timeliness Accuracy Communication channel/method Proactive public engagement	Through customer satisfaction survey	85% per year (To be renewed annually - every March)
To maintain the condition of the Strategic Routes and the Local Resilient Network at an agreed level	To monitor the condition grades annually	Classification of asset condition	Annually prescribed targets achieved
To maintain the highway asset to a level and quality commensurate with its use and purpose	To monitor the quality of surface treatment and efficiency of delivery	% of non-defective area compared to area of surface treatment delivered (all surface treatment types, e.g.	95%

OBJECTIVE	KPI DESCRIPTION	CRITERIA	TARGET
		Micro, Slurry, Surfacing, etc.)	
	To monitor the completion of remedial defects within the defined defect correction period	% of remedial defects correct against total within the defined defect correction period	95%
	To monitor the accuracy and timeliness of inventory date and works delivery information input by the Contractor into the Employer's highway integrated management system where needed	Number of occurrences failed to provide accurate and timely information	Max of 10 per rolling year
	To confirm operational functionality of HIMS	Full implementation of HIMS systems by October 2018	100%
To minimise highway flooding by enhanced maintenance of the drainage assets	To confirm operational effectiveness of all highway drainage assets	Complete first inspection and cleanse of all highway drainage assets by November 2018	100%

Note: Additional Key Performance Indicators (KPIs) are being developed from the contract Quality Performance Objectives (KPOs)

Lifecycle Plans relating to the objectives, current condition and future maintenance and budget requirements have been prepared for Plymouth's carriageway, footway and street lighting assets, and it is intended to develop those for the remaining asset groups over the course of 2018/19. This will facilitate decisions being made that consider criteria other than the condition, such as network hierarchy and resilience to determine programmes that are not necessarily "worst condition first" unless the asset condition would pose a risk to public safety. At the Asset Component level, packages of information are prepared annually, allowing

teams to formulate programmes of work based on the allocations identified in the previous strategy and service level decision phases.

11. Data management and information systems

The Authority believes that the collection, management and use of data needs to be based on a process, which identifies:

- Ownership
- Data requirements
- Responsibilities
- Costs to store, manage and maintain data

Plymouth City Council also recognises that effective asset management and its implementation relies on systems, which can be used as tools to support decision making at all levels.

To this end, we have in place an asset information system, backed up with condition surveys and data that provide the optimum use of available information. We have comprehensive inspection and survey regimes for highway assets, tailored to suit the needs of specific asset groups and in line with national guidance and statutory requirement, where appropriate, which provide us with good quality information and informs effective risk management and decision making.

Our HIMS system covers data collection, highway infrastructure data management, reporting requirements (business information), and corporate IT needs, which are used to inform current data collection needs for both inventory and condition information.

12. Maintainability

One of the aims of good asset management is to improve coordination between highway improvement and highway maintenance schemes. Taking into account the cost and implications of maintaining the asset at the design stage ensures the whole life costs of schemes are optimised. The Strategy aims to raise awareness of this issue, in accordance with national guidance, by ensuring that any new infrastructure has adopted the most appropriate design option and the most appropriate materials.

The HIMS system will be developed and the Paving Manual will be reviewed in 2019/20 to incorporate new developments. The process will advocate lifecycle management values and introduces early communication between developers or clients and the Council to ensure that asset management principles have been considered and agreed as part of the scheme implementation.

This process aims to ensure that all capital and revenue investment options have been considered fully, where new works should only require maintenance in line with expected lifecycles.

13. Risk Management

The Council's Risk Management Strategy defines the approach to managing risk across the Authority and has been adopted in developing the HIAMP. The essence of the strategy is to define and record significant risks in Risk Registers which detail what mitigating actions are needed to minimise the risk exposure those hazards present to a level which is deemed acceptable to the authority.

14. Good Practice

The Department for Transport has worked with the highways sector to develop a Highway Maintenance Efficiency Programme (HMEP) which encourages local highway authorities to connect and share their practices of "what works" across the sector to achieve a greater efficiency in maintaining highway infrastructure assets in the future. Plymouth City Council, working in partnership with neighbouring authorities was one of the frontrunners in the adoption of the principals laid out in the HMEP Procurement, Adoption and Standardisation Toolkits when implementing the new Term Service Contract.

- Plymouth City Council is committed to the development and implementation of good practice and benefits from lessons learnt at National, Regional and Local Levels. Officers will regularly contribute to and attend:
- Southwest Highway Authorities and Utilities Committee (SW HAUC)
- UK Roads Board
- UK Roads Liaison Group- Asset Group
- South West Highways Alliance
- The Collaborative Board (Highway Maintenance Efficiency Programme South West Contract Group)
- South West Benchmarking Group
- National and regional conferences
- The Chartered Institute of Public Finance and Accountancy (CIPFA) events
- South West Service Improvement Group Highways Asset Management Partnership Network
- Highway Maintenance Efficiency Programme (HMEP) and Association of Directors of Environment, Economy, Planning and Transport (ADEPT) events
- CIPFA Highway Asset Management Updates

15. Review Process

15.1 Consultation and engagement

In drafting this strategy, we have taken note of public perception surveys such as the National Highways and Transport Network (NHT) Public Satisfaction Survey and feedback drawn from relevant consultation. This strategy will be made available on the Council's website as part of the suite of documents available to all interested parties.

15.2 Breaches and non-compliance

Non-compliance with this strategy may leave the Council in a position where it is not able to discharge its statutory duty to maintain and lead to a deterioration of the value and condition of publicly owned infrastructure.

15.3 Evaluation and review

The effectiveness and application of this strategy will be regularly monitored as part of the ongoing management of the Highways Service, and will be formally reviewed on an annual basis.

Asset Management Strategy

Plymouth Highways Service

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