The Development and Implementation of Infrastructure Asset Management in Cornwall

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ABSTRACT

Cornwall Council is a 'new' unitary authority in England coming into existence in 2009, replacing the previous County Council and 6 District councils. The Council have developed a service delivery model with a Commissioning service and varied service delivery partners. The Assets falling under the control of the Transportation, Environment and Waste Service are varied, including the highway network, car parks, beaches, footpaths and other public open spaces.

In adopting an Asset Management approach to the management of the entire infrastructure a methodology will be implemented which includes:

- A systematic approach which takes a long-term view
- The consideration of the whole of life costs of maintaining an asset
- The explicit consideration of customer expectations and defined levels of service
- The optimisation and prioritisation of works based on assessed needs derived from the defined levels of service
- The use of lifecycle planning to inform the optimal treatment at each stage of the assets life

All of the above when implemented in a formalised approach enables better decision making which takes account of the relationship between cost and performance. This in turn allows potential for the delivery of an improved level of service for the resources available or where owing to budgetary constraints it can assist in ensuring that the effects of a reduction in the level of service is mitigated through the efficient deployment of available resources such that risks are identified, balanced and mitigated in so far as
is possible.

Cornwall Council was amongst the first highway authorities to publish a Highway Asset Management Plan in England, and developed detailed working procedures and prioritisation methods to deliver the HAMP. This paper will reflect on the successes and challenges of this approach in times of at best 'standstill' budgets, and how the Asset management principles have been applied to the other service groups and the challenges faced.

1. Asset Management – What is it?

Asset management is a much used phrase; definitions abound, and reflect the fact that it means many things to many people. The original UK guidance note for Highways Asset Management published by the County Surveyors' Society used as the basis for many UK highway authorities Highway Asset Management Plans (HAMP's) and Transport Asset Management Plans (TAMP's) defined it thus:

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

The Institute of Asset Management (IAM) in the UK defines it as follows:

"Asset Management is the management of (primarily) physical assets (their selection, maintenance, inspection and renewal) plays a key role in determining the operational performance and profitability of industries that operate assets as part of their core business…….Asset Management is the art and science of making the right decisions and optimising these processes. A common objective is to minimise the whole life cost of assets but there may be other critical factors such as risk or business continuity to be considered objectively in this decision making.

PAS 55 the UK published document which is a pre-cursor to an expected ISO standard defines it as:

Systematic and coordinated activities and practices through which an organization optimally and sustainably manages its assets and asset systems, their associated performance, risks and expenditures
over their life cycles for the purpose of achieving its organizational strategic plan.

Whilst the latest UK guidance, in part based on the PAS55 approach, published in 2013 as part of the Highways Maintenance Efficiency Programme (HMEP) programme renders it:

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

There is a commonality of language and phraseology in all of these definitions, but it is worth noting the latest definitions from IAM, PAS55 and the HMEP include explicit reference to risk and performance.

It is this aspect in particular that is useful in times of constrained funding, helping, as it does, an organisation to quantify its risks, identify and define its performance targets and thereby allocate the available resources to where they will have the most beneficial effect. This then is the primary concern of this paper.

2. Context

Since the beginning of the global financial crises financial resources have been progressively squeezed. Cornwall Council in particular has over the same period of time had to cope with the additional load of becoming a Unitary Authority incorporating the former County Council and six District Councils into one unified structure. This has been challenging to say the least.

The former Cornwall County Council was recognised as one of the early adopters and proponents of the Asset Management approach and early on in the life of the new authority it was recognised that the only way to proceed was to take the experience gained in the field of highways and use it to shape the way Infrastructure is managed across the whole organisation.

As austerity has continued to knaw away at public funding the ability to identify what is an absolute necessity and what is discretionary has increased, as has the need to balance public expectation and aspiration with the need to discharge statutory duty. The adoption of a wholesale systematic approach was the only way to reconcile these competing and occasionally conflicting demands.

3. The Asset Management Framework

Cornwall Council has based its Infrastructure Asset Management approach on the recommendations set out in the HMEP Highway Infrastructure Asset Management Guidance document. Whilst primarily concerned with highway infrastructure the principles are readily applicable to all types of infrastructure. The basic format of the framework is shown in fig 1 below:

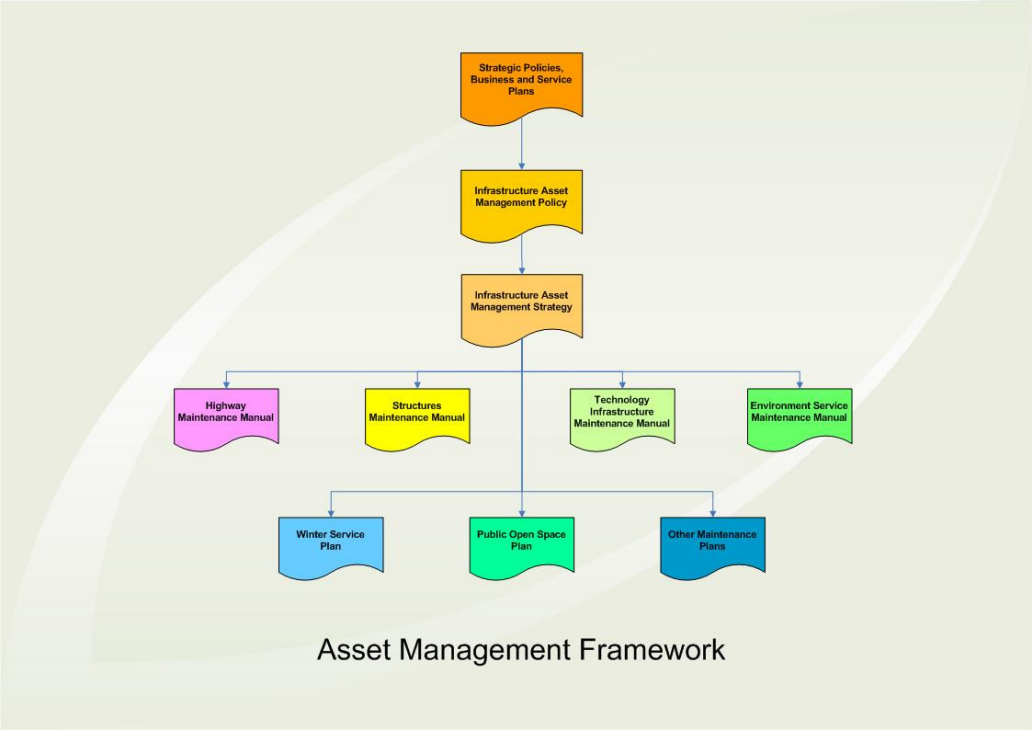

Fig 1 Cornwall Council's Asset Management Framework

The policy document states:

The Council believes that effective asset management is fundamental to the delivery of its services and the delivery of its long term vision and strategy. Asset Management principles enable informed decisions to be made about investment and maintenance funding; assist in the targeting of resources to where they can be most effective and enables the identification and management of the risks associated with its statutory duties to manage and maintain public infrastructure.

In adopting an Asset Management approach to the management of our entire infrastructure we will be implementing a methodology which includes:

- *A systematic approach which takes a long-term view*
- *The consideration of the whole of life costs of maintaining an asset*
- *The explicit consideration of customer expectations and defined levels of service*
- *The optimisation and prioritisation of works based on assessed needs derived from the defined levels of service*
- *The use of lifecycle planning to inform the optimal treatment at each stage of the assets life*

All of the above when implemented in a formalised approach enables better decision making which takes account of the relationship between cost and performance. This in turn allows potential for the delivery of an improved level of service for the resources available or where owing to budgetary constraints it can assist in ensuring that the effects of a reduction in the level of service is mitigated through the efficient deployment of available resources such that risks are identified, balanced and mitigated in so far as is possible.

This last paragraph is a fairly accurate summary of the aims of Cornwall Council's Asset Management approach which is further expanded in the subsequent strategy document which, in conjunction with the policy, forms a link between the Corporate Business Plan and objectives, the Directorate / Service plans and operational plans such as the Highway Maintenance Manual, Environment Maintenance Manual and other similar documents.

3.1 CORNWALL'S ASSET MANAGEMENT APPROACH

The core elements of the approach are:

- Inventory and data Management
- Levels of Service
- Lifecycle Planning, Budget projection and Valuation
- Risk Management and future needs

3.1.1 Inventory and Data Management

A sound knowledge of the scope of the asset is the foundation of any asset management system. It is only with a coherent knowledge of the extent of an asset, its component parts and their condition that an overall view can be formed and a consistent approach to management can be initiated.

Cornwall Council has a disparate collection of assets and available information varies widely both across work strands and work areas. The highway inventory is well developed with all major asset types recorded and logged in a CITRIX/SQL/GIS based common platform. There are no significant gaps in this inventory and where necessary, most notably drainage infrastructure, these are being filled on a strict risk based approach. However, the Environment service has a wide diversity of systems and the quality and completeness of their inventory has varied enormously. In the last few years significant effort has been made to define, map and record the extent of the infrastructure managed and specific funding has been secured to accelerate this process.

Allied to the knowledge of the extent of the asset is an understanding of the condition of the asset. The systematic collection of good condition data which is robust and relevant is the engine which drives asset management planning.

Cornwall has comprehensive inspection and survey schedules, tailored to specific assets, which take note of national guidance and statutory requirements and provides us with good quality data that enables effective risk management and decision making. The sector specific regimes are documented in the relevant maintenance manuals shown in fig 1 above and which cover the various asset types.

3.1.2 Levels of Service

Levels of Service are a means of describing the standard of service that is provided or required. These levels link directly back to our corporate aims and objectives, Departmental and Service plans and other strategy documents such as Connecting Cornwall and the emerging Core Strategy.

In addition, levels of service must take note of statutory duties and the management and mitigation of risk both to the service user and the authority.

Levels of service can thus be described in broad terms which are then distilled down to more concise standards and targets which can then be measured and used to inform the decision making processes.

Drawing on Cornwall Council' key corporate objectives of:

- Sustainable economic growth
- A better environment
- Improved health and wellbeing
- Resilient, safe communities which provide affordable housing that meets local needs.

We can frame levels of service for the infrastructure as follows:

The provision of an infrastructure network which is:

- Safe and serviceable in relation to its use
- Provides accessibility to and from communities for people, goods and services.
- Enhances the sense of place within our communities and promotes active and healthy lifestyles
- Promotes the development and maintenance of sustainable communities
- Contributes to wider economic growth
- Contributes to wider environmental management
- Makes effective and efficient use of our local resources
- Appropriately maintained to conserve its value and integrity for current and future service users

These higher levels of service are then focussed on specific aspects of the infrastructure as part of the operational service plans such as the Highway Maintenance Manual.

3.1.3 Lifecycle Planning, budget projection and valuation

Lifecycle planning is a technique which enables linkages to be made between a particular asset or groups of assets, the desired level of service, the current condition, future maintenance needs and future funding.

At a detailed level a lifecycle plan can be developed for determinate life assets charting the journey from cradle to grave or, for assets with a more indeterminate lifecycle, from creation through maintenance to refurbishment to an “as new” condition, when the cycle is repeated. This is illustrated in Fig 2 below.

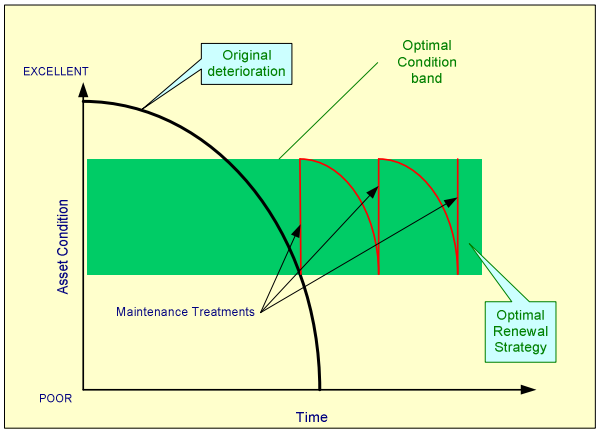

Fig 2 Lifecycle Planning Curve

When linked to defined outcomes lifecycle planning enables the development of investment strategies to deliver an agreed level of performance or, where funding becomes constrained, a prediction of the affect of particular funding scenarios on the levels of service that can be delivered.

Lifecycle planning tools have been developed which enable the development of work programmes which make best use of the available funding in meeting long-term objectives, mitigating the risk of failure by allocating funds to where they will be most beneficial. It must be noted that this type of allocation moves away from a more traditional “worst first” approach and targets work programmes at those parts of the infrastructure which present the greatest risk and where early treatment can achieve the most beneficial whole of life cost.

Such an approach enables the delivery of a service which is as effective as possible, allows a clear and logical allocation of resources to those areas which will contribute most to the overall goals and objectives of the Council and allow an assessment to be made of the residual risk.

As well as the benefits outlined above, comprehensive lifecycle planning allows resources to be targeted to the preservation of the historic investment that has been in made in our infrastructure. As approximately 80% of the entire value of the transport infrastructure is represented by the carriageway surface, in times of budget constraints this makes informed investment strategies and budget allocation all the more necessary.

3.1.4 Risk Management and the future

At its most basic level the adoption of an Asset Management approach can be seen as an exercise in managing risk, the key aspect of which is the grouping by type of assets into a hierarchy which reflects their importance, in service delivery terms, relative to one another. This then enables the quantification and allocation of risk. This principle flows through the whole of the Asset Management Framework and is a fundamental input into the determination of levels of service, the determination of the scope and frequency of inspections, the allocation of budgets and the development of work programmes. Cornwall Council has developed a clear hierarchy for its core asset types which when used in conjunction with robust lifecycle planning and deterioration models enables the organisation to respond to challenges as they occur, making accurate predictions of funding required to sustain levels of service and to quantify the risk to the organisation in terms of service delivery, third party liability and the loss of value and integrity of the infrastructure assets.

In essence then Asset Management is a way of operating which seeks to incorporate all aspects of management activity into one overarching, inter-related system so that conflicting demands, goals, objectives, delivery targets and statutory obligations can be balanced and residual risk identified. Fig 3 illustrates the Cornwall Council approach.

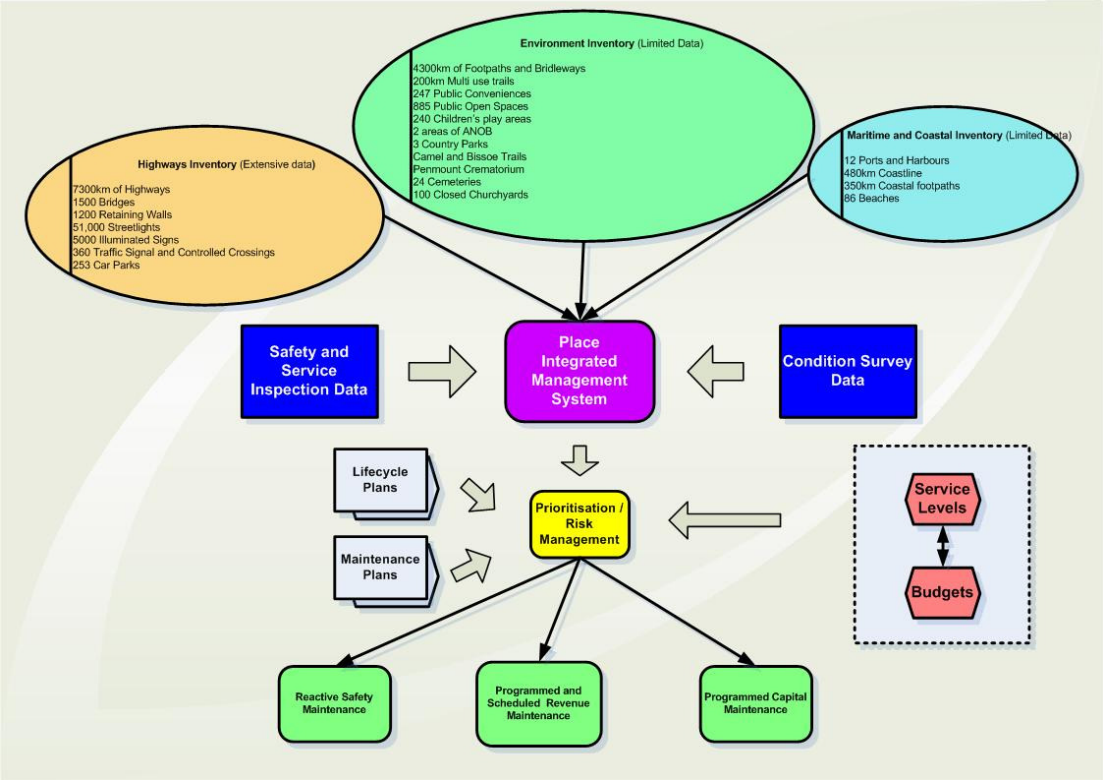

Fig 3 Flowchart of Cornwall Council's Asset Management Approach

4. ASSET MANAGEMENT IN PRACTICE

As discussed above the ability to organise the various component parts into a structure or hierarchy which reflects relative importance is a key tool in an effective asset management system. Traditionally in the UK, highways have been organised by road class - Motorways, Strategic (Trunk) roads, principal roads, classified non principal and unclassified roads. Local highway authorities are largely responsible for the latter three of these categories generally known as A, B, C & U roads. The distribution of these roads across an individual network is largely an accident of history and as this method of classification, particularly at the upper end of the spectrum, is a function of the legal system, not particularly responsive to a changing dynamic network.

4.1 CORNWALL'S HIERARCHY

The UK Code of Practice for Highway Maintenance "Well Maintained Highways" suggests the adoption of a Maintenance Hierarchy as a means of better discriminating the relative importance of the highway network. Such a hierarchy is organised by the use and function of a road rather than its historic classification. Table 1 below shows the Cornwall Council Maintenance Hierarchy which is derived from the principles set out in the Code of Practice.

Maintenance Hierarchy	**Traffic Volumes** (24 hour AADT Two-way)				**General Description**
	Urban		Rural		
1. Motorways	-	-	-	-	-
2a. Strategic Routes	15000+	1500+	10000+	700+	Generally Principal A roads between Primary destinations and other heavily trafficked roads
2b. Strategic Routes	N/A	N/A	N/A	N/A	All other A roads
3a. Main Distributor	5000 - 15000	500 - 1500	2000 - 10000	150 - 700	Routes between Strategic routes and Inter-Primary links.
3b. Secondary Distributor	1500 - 5000	75 - 500	500 - 2000	50 - 150	Class B and C roads plus urban unclassified bus routes with >100 bus journeys
4a. Local Roads	1000 - 1500	50 - 75	350 - 500	20 - 50	Roads linking between the Main and Secondary networks Urban - residential or industrial interconnecting roads. Rural - interconnecting and access routes serving schools, villages, local industry together with important passenger transport and heavy goods vehicle access routes.
4b Local Access Roads	50 - 1000	10 - 50	50 - 350	10 - 20	Local roads serving limited numbers of properties. Urban - residential roads and small industrial estates. Rural - access roads serving smaller villages and hamlets.
5a Minor Access Roads	10 - 50	0 - 10	10 - 50	0 - 10	Minor roads providing access to properties, or roads with carriageway widths less than 3m Urban - minor side roads and alleyways Rural - minor access roads to houses and farms.
5b Lanes	-	-	-	-	Minor lanes serving agricultural needs in Rural areas. Principally 'No Through Roads' or lanes with carriageway widths less than 2.5m
6a Tracks	-	-	-	-	Tracks that are unsuitable for vehicular traffic but may be being used as a footpath, part of a Cycle Trail, used by horse riders or is a designated PROW.
6b Abandoned Tracks	-	-	-	-	Abandoned due to regression or agricultural use.

Table 1 Cornwall Council's Highway Maintenance Hierarchy

When this hierarchy is applied to the Cornish highway network it enables far better grouping of roads into like categories. This grouping then forms the basis for all subsequent determinations in relation to service levels, risk allocation, budget allocations and maintenance programmes. Fig 4 below illustrates the relationship between hierarchy and classification.

Hierarchy/Class	A Road	B Road	C Road	U Roads	Total Length
2a Strategic Routes	222.8				222.8
2b Strategic Routes	342.8				342.8
3a Main Distributor		480.9	216.8	20.8	718.5
3b Secondary Distributor		102.8	684.0	147.0	933.8
4a Local Roads		0.1	549.9	95.1	645.1
4b Local Access Roads		0.1	747.4	2606.0	3353.5
5 Other Access Roads			438.5	488.6	927.2
6a Green Lanes			1.2	25.3	26.6
6b Green Lanes			1.3	72.7	74.0
Totals	564.4	583.8	2640.3	3455.6	7244.2

Fig 4 Maintenance Hierarchy v Class

If this is then further sub divided to show the urban / rural split, as in fig 5 below, it gives the Asset Manager an excellent starting point to begin the process of managing the network.

Hierarchy/Environment	Urban	Rural	Total Length
2a Strategic Routes	43.3	179.5	222.8
2b Strategic Routes	70.0	272.8	342.8
3a Main Distributor	192.4	526.1	718.5
3b Secondary Distributor	209.9	723.9	933.8
4a Local Roads	140.2	504.9	645.1
4b Local Access Roads	989.1	2364.4	3353.5
5 Other Access Roads	3.6	923.6	927.2
6a Green Lanes	0.0	26.6	26.6
6b Green Lanes	0.0	74.0	74.0
Totals	1648.5	5595.7	7244.2

Fig 5 Hierarchy v Environment

4.2 SERVICE LEVELS

For levels of service to be used to inform asset management decisions it is necessary to translate the higher levels of service as set out in paragraph 3.1.2 above into some sort of specific service focused criteria. In relation to the highways asset Cornwall Council has made use of the following categorisation, based, in part, on the headline levels of service outlined in well maintained highways, which are as follows:

Safety
Serviceability
Sustainability

These are in effect a hierarchy of provision, with safety being the minimum core statutory duty necessary to satisfy Section 41 of the Highways Act (1980), rising through degrees of serviceability to a fully functioning safe, sustainably maintained network which is resilient and able to cope with future demands and minimises long-term cost.

Clearly the goal of any asset management process worthy of the name would be this latter state. Sadly, in the current funding constrained landscape it is often necessary to balance available financial resources against these lofty ideals and determine where it may be appropriate to adopt a reduced level of service. This is where the risk management aspect of the latest UK guidance begins to come into the equation.

To enable the setting of levels of service which are appropriate and seek balance the risks to both the authority and the highway user, Cornwall Council has chosen to sub-divide the serviceability aspect into two categories. The higher of the two establishes the need for a schedule of routine maintenance tasks such as verge trimming, gully emptying and the like; whilst the lower level of serviceability reflects the use of a separate inspection driven maintenance regime which is initiated by twice yearly service inspections. This then gives 4 levels of service:

Level 1 meeting all aspects of safety, serviceability and sustainability
Level 2 provides for safety and serviceability only, incorporating scheduled revenue maintenance programmes
Level 3 provides for safety and a reduced level of serviceability
Level 4 provides for safety only this is the minimum legal level

If these categorises are then combined with the network hierarchy, the urban/rural environment and applied to various maintenance/asset categories the levels of service can be represented as figures 6 & 7 below:

Hierarchy/ Environment	Maintenance Activity							
	Carriageways	Footways & Cycleways	Drainage Gullies	Drainage other	Verges etc	Fences & Barriers	Traffic Signs	Road Markings
2a Urban								
2b Urban	Service Level 1							
3a Urban			Service Level 2					
3b Urban								
4a Urban					Service Level 3			
4b Urban							Service Level 4	
5a Urban								
5b Urban								

Key

Service Level 1 -includes Safety, Serviceability and Sustainability

Service Level 2 - Includes Safety and intermediate level of Serviceability (no sustainability)

Service Level 3 - includes Safety and minimal level of Serviceability (no sustainability and a severely reduced level of serviceability)

Service Level 4 - includes Safety only (no sustainability and serviceability) - This is the minimum legal level

Fig 6 Service Levels – Urban Environment

Hierarchy/ Environment	Maintenance Activity							
	Carriageways	Drainage Gullies	Drainage other	Footways & Cycleways	Verges etc	Fences & Barriers	Traffic Signs	Road Markings
2a Rural								
2b Rural	Service Level 1							
3a Rural			Service Level 2					
3b Rural								
4a Rural					Service Level 3			
4b Rural								
5a Rural							Service Level 4	
5b Rural								
6a								
6b								

Key

Service Level 1 - includes Safety, Serviceability and Sustainability

Service Level 2 - Includes Safety and intermediate level of Serviceability (no sustainability)

Service Level 3 - includes Safety and minimal level of Serviceability (no sustainability and a severely reduced level of serviceability)

Service Level 4 - includes Safety only (no sustainability and serviceability) - This is the minimum legal level

Fig 7 Service Levels – Rural Environment

4.3 MAINTENANCE PLANS, PROGRAMMES AND FUNDING

By drawing together the levels of service, condition data, outputs from safety and service inspections and information derived from lifecycle planning techniques it becomes possible to determine the forward maintenance programmes necessary to deliver the required levels of service over a defined period of time and also the funding necessary to support that programme. Sadly in the current financial climate this is not always possible; as funding becomes constrained and in particular revenue funded activities come under pressure the same techniques allow the asset manager to allocate scarce financial resources to where they will derive the most benefit. This is not always those areas that are immediately obvious to service users and can set up some interesting conflicts. Nevertheless it is by a systematic application of the information derived from condition data, levels of service and a mature understanding of the management of risk that the worst effects of funding reductions can be mitigated.

Cornwall Council sets out its Routine Inspection and Maintenance regimes in its Highway Maintenance Manual this is a publically available document published in PDF format on the Council website. Structural Maintenance in the form of surface treatment programmes, highway structures maintenance and improvement programmes and drainage improvement programmes are determined annually from a long list of schemes identified from analysis of condition data, safety and service inspection data and, where appropriate, lifecycle plans. Once settled these programmes are also made available to service users.

4.4 APPLICABILITY TO OTHER SERVICE AREAS

The approach outlined in this paper is one which has been developed based on the experience of the implementation of the highways asset management systems since 2006. The creation of a unified authority in 2009 gave an opportunity to roll this experience out across other areas of infrastructure. The Asset Management Framework outlined in section 3 of this paper was so conceived and written to allow its application to a wide variety of infrastructure assets. The Highway Maintenance Manual and the concept of hierarchy as a vehicle for deriving appropriate levels of services has been used a the template for the Environment Service Manual and figures 8 & 9 below show the outcome of this process.

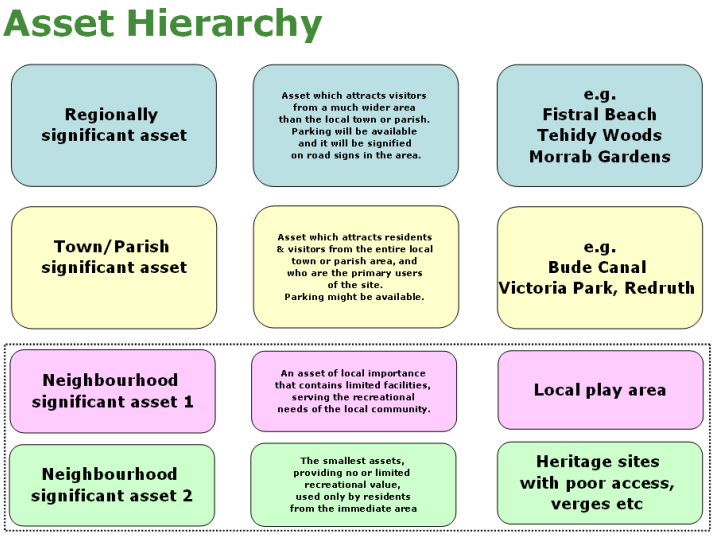

Fig 8 – Environment Asset Hierarchy

Level 4	**Sustainability, Serviceability & Safety**	Maintenance in accordance with relevant British Standard and/or original designer's specifications. A degree of investment made increasing the life expectancy of the feature.
Level 3	**Serviceability (Enhanced) & Safety**	Higher standard of maintenance to improve user experience & aesthetics, and to minimise risk, but limited investment in longevity of feature.
Level 2	**Serviceability (Basic) & Safety only**	Maintenance of feature absolute minimum required to allow use of feature as intended & minimise risk.
Level 1	**Minimal maintenance - safety only**	Most aspects of maintenance will not be undertaken unless required to minimise a safety risk or due to a statutory responsibility.

Fig 9 Environment Service Levels

The combination of the hierarchy and service levels shown above has been used to derive defined service standards for the extremely diverse assets managed by the team which encompass:

- **Countryside sites & trails comprising:**
  - Countryside sites (natural spaces)
  - Mining heritage sites
  - Beaches
  - Multi-use trails

- **Formal public spaces comprising:**
  - Formal parks & gardens
  - Civic spaces
  - Equipped play/youth facilities
  - Recreational amenity space & playing fields
  - Sports grounds
  - Operational cemeteries
  - Closed cemeteries & churchyards
  - Inactive amenity space and street verges
  - Allotments

- **Public Rights of Way (PRoW)**

- **Coastal Defences**

- **Watercourses**
  - Where Council is riparian owner and or flood defence assets constructed and maintained by the Council.

- **Closed Landfill Sites**
- **Public Conveniences**

As has been previously discussed information on some of the above assets is sparse and incomplete and the Council is currently in the midst of a comprehensive survey to establish the extent and condition of all of the various assets under its control with

a view to the implementation of a risk based maintenance approach such as that currently operated by Highways.

5. CONCLUSION

The processes and concepts outlined in this paper are based on readily available standards and guidance and are driven by the need to have a dynamic, responsive mechanism for the management of an extremely diverse asset portfolio. Further imperative comes from the need to adequately understand and mitigate risk both to the Council, as a corporate body with a wide public responsibility, and to the individual service users. All of this is made ever more difficult by the current stringent finance squeeze being experienced by the UK's public sector. This situation is also exacerbated by the process of climate change which is placing greater stress on the natural environment, most notably drainage systems and transport infrastructure. At the time of writing this conclusion England has been cut-off from Cornwall by virtue of the storm damage sustained by the mainline train route in recent storms and the County as a whole is experiencing significant failure and damage to the whole of its infrastructure.

The development and implementation of a risk based asset management process is not a panacea, however, it will enable organisations to gain a clearer understanding of where risks and challenges lie; to articulate the consequences of funding constraints on the levels of service that can be delivered; and finally the overall consequential impact on the future value and performance of the infrastructure.

Author Biography

A native of Liverpool Andy has worked in Highway Maintenance for the best part of 30 years, initially in materials and pavement engineering and latterly in the field of asset / highway management. Having spent his early career working for material suppliers, surfacing contractors and main contractors on highways and airfields he joined the old Cornwall County Council in 1990.

Over the ensuing 16 years he was Materials Engineer running the Highways Laboratory, worked for CCC's direct works organisation CORMAC running the Surfacing and Surface Dressing operations and compiled various technical submissions. With the implementation of Asset Management in 2005 he became Highway Asset Manager with responsibility for the compilation and implementation of CCC's Transportation Asset Management Plan. Following the creation, in 2009, of the new unitary authority in Cornwall this role was expanded to include the management of all the Council's built assets, with the exception of property. Latterly an internal restructure has resulted in gaining responsibility for the management of all of the county's highway and drainage maintenance and management.

He sits on two BSI committees B510/1 & B510/2 and was involved in the early work of HAPAS SG3 – Thin Surfacing Systems. He chairs the SW Highway Management Group, is a member of the UK Roads Board Asset Management Group and was a member of the HMEP Asset Management Working group.

He is an ordained Anglican Priest and Vicar of Flushing. When time permits he can be found racing his St Mawes OD on Carrick Roads off Falmouth, or, in the winter, watching the Cornish Pirates rugby team.