

Transport Asset Management Plan

2011 – 2024

Suffolk County Council

UNDER REVIEW

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1. Introduction

This Transport Asset Management Plan sets out a framework for the maintenance of the County Council's transport assets in Suffolk for the next 12 years. Most of Suffolk's highway network is the more than 4,000 miles of "local roads" where the Council is the Local Highway Authority. Other than these roads, the A14, the A12 south of Ipswich and north of the Bascule Bridge in Lowestoft and part of the A11 in Suffolk are trunk roads forming part of the national strategic road network under the control of the Highways Agency.

The local highway network is used or relied upon daily by every resident and visitor to Suffolk. A well-maintained network therefore underpins all of the Council's strategic priorities by allowing the safe movement of people and vehicles to and from businesses, to access employment, education and services and for family and leisure activity. The Council's latest Local Transport Plan ("LTP3", approved by the County Council in May 2011) recognizes the importance of maintaining the asset, alongside the Council's long-term goals for improving the network over the next 20 years.

The largest element of transport assets, both by value and by spend, is the road carriageway (4,062 miles in total), carrying the main flow of people and vehicles. There are approximately 2,500 miles of pavements; more than 2,000 bridges and other structures; an underground drainage network of gullies and drains; road signs, road markings and cats-eyes, verges, fences, bus shelters and trees. Street lighting and traffic signals are assets which have a key role in regulating traffic and keeping the community safe. Transport assets in Suffolk also encompass the 3,400 mile network of Public Rights of Way (mainly footpaths and bridleways).

The strategic goals of Suffolk's Transport Asset Management Plan are to maintain a highway network that is:

- serviceable, meeting the travel needs for business, education and leisure in the county
- in a safe condition for all users
- maintained over the medium to long term without deterioration in its value or condition
- managed sustainably in ways that minimise carbon emissions, waste and the use of virgin materials from maintenance activity
- resilient and able to cope with severe weather events and long-term climate change impacts

The period covered by this Plan is **2011-12 to 2023-24**. This period covers the two years leading up to the start of a new contract for the delivery of highway services in April 2013, and the first ten years of the contract period.

There will be a “mid-term” review of the TAMP in 2018-19, after the first five years of the new arrangements.

The highway network in Ipswich is managed under a Highways Agency agreement by Ipswich Borough Council which runs up to April 2013. Highways in Ipswich are treated as part of a single Suffolk network for the purposes of asset management and no distinction is made in this Plan between Ipswich and “county” roads as far as the principles of managing the assets are concerned.

In the case of public rights of way, Ipswich Borough Council is responsible for the inspection and maintenance of metalled urban paths, whilst the County Council is responsible for the maintenance and protection of all other paths in the area.

The Plan sets out key performance measures relating to the strategic goals that will enable the performance of the assets over time, and the performance of the Council and its partners in managing the condition of the highway network, to be monitored, reviewed and demonstrated.

The Plan outlines the main policy drivers, challenges and opportunities facing the service over the Plan period. These include the challenge of maintaining the assets in a time of pressure on public spending and increasing cost inflation.

The tools and techniques available to asset managers are described, including guidelines for asset management planning processes that will support the calculation and financial reporting of asset value.

Finally, a Statistical Appendix provides a full list of transport assets by asset group, analysis of the network by urban and rural roads and budget figures for the current and financial year. There are also current data on each of the aspects of performance set out in the Plan in the second appendix.

2. Key Asset Performance Measures

These measures relate to the strategic goals of maintaining a serviceable, safe, resilient and sustainable highway network over the medium to long term. They do not have defined “targets” because it is not possible, over the period of the Plan, to know what level of budget will be available in an uncertain public sector funding climate. Some baselines drawn from current levels of performance are suggested.

Nonetheless they are an attempt to define, at a network level, some measurable aspects of what the community in Suffolk can expect the Council to deliver in its role as the Local Highway Authority.

An annual report which will include these asset performance measures is a key element in the Council’s transport asset management approach. It is here that performance and targets can be considered, set and monitored over the Plan period.

The annual report can include forward-looking projections, as well as historic information, so that the impact of decisions can be taken into account in setting budgets and making budget allocations. The report will be made to the transport management team in Economy, Skills and Environment and to the Portfolio Holder over the June – September period each year in order to inform the Council’s annual budget cycle.

The asset performance measures are set out in Table 1 (below).

Table 1 Asset performance measures

	Aspect of asset management	What does this measure?	How will it be measured?
A	Public satisfaction	How satisfied people in Suffolk are with the condition of roads and pavements, and with the highway maintenance service	Use of the National Highways and Transportation (NHT) survey and benchmarking scheme
B	Condition	How much of the asset is in good, serviceable condition/ how much is in poor condition	Roads – machine surveys (SCANNER) of surface condition for A, B and C roads; Visual inspection for unclassified roads Pavements – visual inspection Bridges - Bridge Condition Index and no. of sub-standard bridges

	Aspect of asset management	What does this measure?	How will it be measured?
			<p>Street lighting – age and risk rating of columns</p> <p>Traffic signals – age profile of equipment</p> <p>Public rights of way – ease of use survey</p>
C	Reactive costs	The cost of providing a statutory minimum level of service to ensure that the highway is safe for users, and actionable defects are repaired to the Council's published intervention standards.	The cost of works defined as reactive repair recorded in Oracle and apportioned by asset managers
D	Claims	Claims are made against the Highway Authority for injuries and damage to vehicles and property. The level of claims partly reflects condition, but also the effectiveness of safety inspections and promptness of repair when defects are reported.	<p>The number of claims made for road carriageway and pavement defects by financial year</p> <p>The percentage of claims closed in the year which were successfully defended</p> <p>The total cost of claims for the year in which the incident occurred</p>
E	Asset value	The value of highway assets in accounting terms, calculated according to the "CIPFA Code".	<p>Gross and depreciated replacement costs updated annually for financial reporting</p> <p>The amount of annual depreciation of the asset calculated from asset life-cycle plans</p>
F	Sustainability	The impact of the activity of maintaining the highway network on the environment	<p>The proportion of recycled materials used in maintenance schemes</p> <p>The "carbon footprint" of maintenance treatments</p> <p>Street lighting energy use and CO² emissions</p>

Further commentary on these performance measures is set out below.

The **NHT public satisfaction survey** has grown over recent years to the point where most highway authorities in England now take part. Surveys are carried out by polling organisation *Ipos MORI* and the results are made publicly available on NHT's website:

<http://nhtsurvey.econtrack.co.uk/Default.aspx>.

Suffolk has achieved a relatively good rating for satisfaction with both condition and highway maintenance; although it should be said that satisfaction among the public for these indicators is at a low level nationally.

The survey gives us a low cost, reliable and repeatable result which can be benchmarked against that of other authorities. It also gives the users' view on the state of Suffolk's highways, to add to the technical and professional assessments made by officers and service providers.

Road surface **Condition surveys** have been carried out systematically for a number of years and are currently used to provide data for two National Indicators (condition of A roads and of B and C roads), as well as unclassified roads. The unclassified roads survey is no longer a national indicator but Suffolk has continued its survey programme and takes part in a national voluntary benchmarking scheme.

The national indicators are stated as the percentage of roads where maintenance should be considered ("red" road length) or, in other words, roads in poor condition. The surveys also generate data on roads in good condition ("green"), and where deterioration is at early stages ("amber"). Use of the amber and green scores gives a fuller picture of condition and trend, and the National Indicator "red" scores if seen in isolation can suggest that roads are in better condition than they really are.

"Amber" roads are also those where early intervention treatments, like surface dressing, can be most cost-effective because deterioration showing as cracking and loss of texture in the surface of the road is at an early stage. Roads in the "red" category are more likely to exhibit defects like wheeltrack rutting and deformation, where a more expensive structural maintenance treatment, usually resurfacing, becomes necessary to restore the shape and strength of the road carriageway.

Suffolk's results based on "red" condition from recent years are shown in the Statistical Appendix along with recent years' results for "green" and "amber" scores. Suffolk is currently close to the regional and national averages for the condition of its classified roads; but firmly in the lower quartile for unclassified roads. Unclassified roads are 52% by length of Suffolk's network.

This is partly explained by the rural nature of the county and a network of narrow, undesigned rural roads without kerb edges. These roads are particularly prone to damage by wide agricultural and other heavy vehicles.

Urban unclassified roads can also exhibit poor condition, often suffering from the effects of utility trenches in weakening the structure of the road. Currently, budgets only allow for resurfacing of unclassified roads every 80 or more years, a picture that is replicated across most UK highway authorities.

A Life cycle plan analysis of the sub-groups in the road network (outlined in the asset management planning techniques section of this Plan) will allow us to understand deterioration and investment need better across the county.

Pavement (footway) condition surveys were stopped a few years ago when the former Best Value Performance Indicator, which covered only the most used 10% of pavements, was abolished by the government. The Council will recommence a programme of sample condition surveys of all categories of pavements during 2011/12 to support asset management and financial reporting.

The **bridge** stock comprises approximately 2,000 registered bridges in Suffolk with a wide variation of type and age. Approximately one third are brick arches constructed during the 19th century. The Council is also responsible for 275 retaining structures which support the highway and 3,600 footbridges of varying spans on Public Rights Of Way.

The Council is also required to ensure that assessments and, where necessary, strengthening or replacement, are carried out on all structures supporting the public highway even if they are not publicly owned. In Suffolk there are 422 such structures, 105 owned by Network Rail, 13 by Environment Agency and the remaining 304 by private owners.

National Bridge Condition Indices have been used for some time to measure the condition of the bridge stock in Suffolk. These indices measure the deterioration of different elements of a structure to provide an overall rating of between 1 to 100. This is then rated into Poor, Fair, Good and Very Good. An overall single rating of the stock can then be evaluated for the county. Currently, Suffolk has an overall rating of 81.8 ("Fair") for its stock. This has declined since 2005 when the rating was 90.4 ("Good").

Currently there are 40 weight restricted bridges in the county. These are not to be confused with several bridges that are part of an Environmental Weight Restriction which applies to a length of road, and not to the bridge itself.

82 bridges which have failed their assessment are currently monitored on a regular basis to ensure they are fit for public use. Monitoring is used as a means of allowing the bridge to remain open without imposing a weight restriction in advance of strengthening being carried out.

There are no recognised condition indicators for **street lighting**, but the age of lighting columns is generally taken as a proxy for condition of the stock. Suffolk reported a figure for columns over 40 years old as 8,727 as at 1 April 2010 (16.5% of the stock) as part of the Department for Transport's capital distribution formula data return. Lighting columns are subject to a risk-based

programme of structural inspection and testing to ensure that those at highest risk are replaced as priorities, rather than going solely by their age.

For **traffic signals**, there is an industry standard service life of 15 years for the operational equipment. Condition is routinely monitored during periodic inspections.

Public rights of way are inspected annually, on a sample basis using a national standard methodology, to provide a score for ease of use based on the percentage of total length of rights of way which were easy to use by members of the public. This takes into account the condition of the surface, signing and any bridges, gates and stiles. Suffolk continues to collect this data, which used to be a government data requirement. The most recent years' figures are:

Year	Public rights of way - Ease of Use
2008/09	61%
2009/10	66%
2010/11	72%

All results are subject to +/- 5% variation.

Reactive costs: reactive work is that carried out in response to public reports, or defects noted during scheduled safety inspections, and aims to meet the Council's published intervention standards and time targets. One of the benefits of an asset management approach is in minimising the amount of reactive repair, and this is best achieved through carefully planned and prioritised programmes of planned maintenance. Currently, the Council's spend on reactive repair is around 10% of the total capital and revenue budget. Ideally it should be lower, perhaps around 5%.

The level of reactive cost is also closely related to weather events, such as the series of severe winters starting in 2008/09 which have caused rapid deterioration to road structures and surfaces, but it also reflects the longer-term structural deterioration of roads and pavements. As well as putting pressure on revenue budgets, reactive repair is less efficient than planned work and reduces the resource available for programmes of planned work, thus adding further to deterioration and reactive repair cost.

There is a risk of reactive repair rising to unmanageable levels, where the Council could fail to meet its statutory minimum level of service, so monitoring the trend in reactive spend and understanding the reasons for it is vital to good asset management.

A high level of reactive work can also have traffic management impacts by causing unplanned road closures for urgent and emergency work, leading to more congestion and queuing and adversely affecting the serviceability of the network.

The number of **Claims** made to the Council (in Ipswich claims are made to Ipswich Borough Council) at least partly reflects the condition of roads and pavements. A strong rise in claim numbers in recent years may be explained by the severe winter weather causing a rise in the number of potholes and other defects. There has also been much press attention, and a growth in websites that encourage road users to claim against highway authorities.

The “repudiation rate” or the proportion of claims that are defended successfully depends on a number of factors. Firstly, there must be good record keeping by staff of scheduled safety inspections and defects noted during inspections. Secondly, claims must be dealt with professionally by council staff who understand the law and practice around highway maintenance. Thirdly, a good system of claims management and legal support where necessary must be in place. The council currently has a good record of defending claims (in the region of 80% of claims in recent years have been successfully defended).

The reporting of **Asset value** relates to the new financial reporting requirements of the “CIPFA Code” (see the following section on Policy Context). An estimate of the Gross Replacement Cost of all of the transport assets of £2.6 billion was made in March 2006 for the first Transport Asset Management Plan. Gross Replacement Costs today are certainly higher. An estimated figure for road carriageway alone of £3.4 billion was produced for Whole of Government Accounts reporting in June 2010. Asset values for all highway assets have to be calculated and submitted to HM Treasury by June 2013.

Perhaps the most valuable part of this new financial reporting process will be the calculation of annual depreciation. This equates to the rate at which an annual investment in structural maintenance should be made, in order to preserve the assets in a stable condition (“steady state”). The calculation is carried out using Life cycle plans.

A rate of investment below the level required will inevitably lead to deteriorating condition over time, with increased reactive repair costs, increased levels of claims and payments and greater public dissatisfaction. Asset value is a key performance measure because it impacts on many other aspects of the safety and serviceability of the highway network.

The annual depreciation of the asset has not been calculated before, although the first Transport Asset Management Plan did include detailed costed Life cycle plans for each group of assets at four levels of service between statutory minimum and “optimum”. These were all calculated at 2004/05 budget levels, and they will be reviewed and updated as part of the ongoing asset management planning and asset valuation process.

Economy, Skills and Environment’s directorate Environmental Action Plan makes several targeted **sustainability** commitments that relate to asset management.

There is an overall objective to ensure that the infrastructure is renewed and maintained in the most sustainable way, and to use life cycle planning to optimise treatments and their time of application. Early intervention, before roads deteriorate to the point where deeper reconstruction becomes unavoidable, saves not only cost but also materials and is more sustainable.

In the Environmental Action Plan there are more detailed actions and targets around assessing and reducing total annual CO₂ emissions from highway construction and maintenance works. These include an action to assess the carbon footprint of typical maintenance operations, working with the Council's partners in the Suffolk Highways Partnership, then to set targets to reduce it.

There are also targets relating to reducing waste and recycling of materials:

- 80% of sub-base material to be recycled
- the recycled content of surfacing materials to be at least 7%
- less than 5% of arisings from highway maintenance schemes sent to landfill

The Council is implementing a programme of "intelligent street lighting" during 2011/12 with the aims of reducing both the cost of electrical energy and carbon emissions. The investment in new technology will allow targeted dimming and part-night lighting to be introduced in the Council's stock of street lights. It can also be offered for those owned by Borough, District, Town and Parish Councils (around 20,000 units compared to the County Council's 53,000).

3. Policy Context

In this section, the national and local policy context for the long-term maintenance of transport assets is outlined, in order to identify the key challenges that the County Council faces in maintaining the network in future years. The present main policy influences for asset management are:

- Suffolk's Local Transport Plan
- The statutory duty to maintain the highway
- Budgets and funding levels
- Financial reporting requirements
- Climate change and carbon reduction
- Flood and Water Management Act 2009

Suffolk's Local Transport Plan

The Local Transport Plan (LTP) has been revised and re-written to set out the Council's long-term transport strategy for the next 20 years. It was approved by the County Council in May 2011.

The LTP recognises that, in the present difficult financial climate, maintaining the road network in good condition is a priority for the Council, but it is likely to be a challenge. In Ipswich, road condition is noted specifically as one of the key transport issues.

The LTP outlines the asset management approach which forms the basis for this Plan and summarises, in its Implementation Plan section, current maintenance strategies for roads, bridges and other assets. The LTP includes public rights of way priorities as outlined in the Council's rights of way improvement plan.

Statutory Duty to Maintain the Highway

Section 41 of the Highways Act 1980 places Highway Authorities under a duty to maintain public highways (this includes public rights of way). The Act offers little further definition on what the duty requires but many years of case law have provided guidance on the extent of the duty, and continue to do so.

National recommendations for the delivery of highways maintenance services are contained in a Code of Practice ("Well-Maintained Highways") published by the UK Roads Board.

The Code of Practice is not mandatory, but it does provide a very comprehensive framework of guidance and recommended standards for the service. Each Local Highway Authority has developed its own set of local standards on, for example, the depth and width of potholes at which intervention is required and the time to repair reported defects.

The Council's own operational standards for the highways maintenance service are set out in the Highway Maintenance Operational Plan (HMOP), this is currently being revised in 2011. This plan sets out the Council's approach to fulfilling its statutory duties, details the safety inspection process

for roads and pavements, and the response periods and intervention levels for repairing defects.

A summary version of the content is published on the Council's website in the Transport and Streets section under Road Maintenance:

<http://www.suffolk.gov.uk/TransportAndStreets/RoadMaintenance/>

Compliance with these standards, and hence the Council's ability to defend claims, largely defines what the statutory minimum level of service is that will satisfy the duty under the Highways Act to maintain the highway.

The scale of the assets which the council has to maintain has also grown from year to year. This is due both to new development in the county leading to the adoption of new estate roads, and new additions to inventory when improvement and safety schemes are carried out – new signs, bollards and road markings, pedestrian and cycle crossings, anti-skid surfacings and so on. It is important that future maintenance costs are always considered in designing improvement schemes and when new estate roads are constructed and adopted.

Budgets and funding for asset management

The October 2010 Comprehensive Spending Review (CSR) was widely expected to have a large impact on transport spending. The picture was mixed as far as maintenance spending is concerned.

Revenue support to local government was reduced by 28% over the period of the Comprehensive Spending Review. The Council makes a local decision in its budget as to the level of the revenue budget for highway maintenance, but across the board reductions of this magnitude are bound to put pressure on the level of revenue funding available for asset management over the CSR period to 2014/15.

Government support for capital maintenance up to 2014/15 was also announced in the Comprehensive Spending Review in October 2010. About £3 billion, £750 million per year, will be available over the 4 year period. This represents a reduction of about 7% on the 2010/11 funding nationally. On the other hand, changes made to the funding distribution formula have worked to Suffolk's benefit so the maintenance grant has increased between 2010/11 and 2011/12, but with reductions to come over the period to 2014/15. The settlement is shown in Table 2 below:

Table 2 Department for Transport capital maintenance grant 2010-15

2010/11 (pre-CSR)	2011/12	2012/13	2013/14 (indicative)	2014/15 (indicative)
£16.119m	£18.242m	£17.668m	£17.066m	£16.074m

Construction cost inflation has a significant effect on eroding the buying power of works budgets from year to year. Contract prices, with uplifts based on industry indices, rose over the period of the first TAMP by an average of

around 6% a year. When budgets are likely to be cash limited or reducing, the impact of inflation on the ability to deliver both reactive and planned maintenance work across the highway network will be severely felt.

The total works budgets available in 2011/12 are at a similar level to those available in 2004/05 in cash terms (see table and bar chart in the Statistical Appendix) but there have been several important changes over the period:

- Cumulative construction cost inflation over the period is over 50%. This has produced a funding “gap” of some £14 million in terms of reduced buying power.
- The amount of base revenue budget has fallen to half its 2004/05 level. This has meant that revenue budgets are now mainly used for reactive repairs and the structural maintenance programme is almost entirely dependent on capital funding.
- Base budgets have been supplemented over the period by one-off funding, for example, the Council’s prudential borrowing of £14 million over 5 years for unclassified roads, and government severe winter emergency funding in 2010/11 and 2011/12. While very welcome, such one-off funding is uncertain and makes long-term planning of maintenance activity more difficult to do.

All of this means that the pressure to deliver “more with less” from asset maintenance budgets will intensify over the period of this Plan.

Financial Reporting

The “Code of Practice on Transport Infrastructure Assets: Guidance to Support Asset Management, Financial Management and Reporting” (known as the *CIPFA Code*) was published in March 2010 by the Chartered Institute of Public Finance & Accountancy (CIPFA).

The Code stresses that asset valuation is not an end in itself. It is a tool which provides an analysis of the cost of maintaining the asset over its life, and unlike previous guidance on the subject, the new Code is mandatory for all Highway Authorities.

The timetable for financial reporting was published on the HM Treasury website in March 2010. For the 2009/10 Whole of Government Accounts Highway Authorities were asked to provide, as a minimum, a figure for the Gross Replacement Cost of their road carriageways. The figure reported for Suffolk was £5.289 billion for road carriageway, including kerbs, drains, signs and road markings (£3.4 billion for the carriageway alone). This valuation was based on supplied national “default” cost rates and road carriageway widths.

The timetable for future years requires more information to be provided each year until 2012/13 (reported in June 2013), when there must be full Depreciated Replacement Cost reporting, using robust local data, with auditors providing an opinion.

The steps that will need to be taken for the Council to comply with these financial reporting requirements are detailed in the following sections of this Plan. It will require the ongoing collection of asset inventory data; an exercise using the council's asset data system to analyse and process data on asset condition to produce figures for "depreciated" value; and expert technical input by asset managers to produce updated life cycle plans for each asset group in order to calculate annual depreciation.

This all amounts to a substantial and unavoidable piece of work which will present a major challenge for the service at a time of severe budget pressure and change.

Climate Change and Carbon Reduction

Suffolk's Community Strategy 2008-2028 commits the county to being an exemplar in tackling climate change and in protecting and enhancing its natural and historic environment. The intention is that Suffolk "will be the county with the greatest reduction in carbon emissions".

Environmental issues which directly affect asset management include both the impacts of a changing climate on transport assets, and measures which the Council is taking to reduce its own environmental impact. The latest projections of climate change include, for example, hotter summer weather which would affect the service life of the asphalts used for most road surfacing treatments in the county. Higher rainfall and severe storm events will also put pressure on highway drainage systems. Coastal flooding would have a major impact on roads like the A12 and others in the East of the county.

Flood and Water Management Act 2010

This Act introduces significant changes in the way in which surface water and river flooding are managed in England. It follows on from the Pitt Review into the severe flooding that occurred in 2007, notably in Gloucestershire. The Act gives the Council a number of new roles and responsibilities as the "Lead Local Flood Authority" for the county. Those related to asset management include:

- A new duty to create and maintain an Asset Register that is publically available and records the assets that contribute to managing flood risk. Assets can be publically or privately owned and details should include ownership, state of repair and maintenance responsibility.
- A new duty to investigate flooding and publish reports on those investigations.
- A new duty to set up a process for drainage approval that works alongside the existing planning system for all developments of greater than one property. By default drainage systems should be "sustainable" systems.

Once sustainable drainage schemes are approved they must be recorded in the Asset Register, and the Council will be responsible for their adoption and maintenance. Unlike traditional piped drainage systems, these new systems should be designed to provide landscape and wildlife benefits as well as being functional drainage assets, and their future maintenance will call for new maintenance techniques to be developed and costed.

UNDER REVIEW

4. Asset management in Suffolk

Principles of asset management plans

There is no shortage of industry guidance on asset management (and more is promised under the DfT sponsored Highways Maintenance Efficiency Programme launched in April 2011), and yet the concept of what asset management means for transport assets remains hard to pin down. In a sense, the whole range of the activity which maintains the Council's transport assets, from filling potholes, to changing lamps in street lights, to deciding budgets and setting capital scheme programmes is asset management. There is no detailed prescriptive formula for these activities either: the way asset management is practiced in every Local Highway Authority will vary.

There are some common features that distinguish an asset management approach from maintenance, as it has traditionally been understood. These are:

- A consistent approach is adopted across all asset groups, rather than each asset being managed in isolation by separate managers or teams, and a balanced view of resource allocation is taken bearing in mind risk and level of service
- A medium to long term view is taken to ensure that maintenance options and strategies look beyond merely spending this year's budget
- Planned maintenance is more desirable than accepting a high level of reactive repair, which is risky and inefficient

The Council's first Transport Asset Management Plan was drawn up during 2005-06 by a group of experienced officers with support from Opus, a leading international infrastructure and asset management consultancy. The format of the Plan followed the best available advice at the time. This produced a comprehensive and very large (440 pages) document that contains a wealth of good ideas and information but that has proved to be difficult to use in practice or to update because of its size and layout.

The concept behind this review of the Plan is, firstly, a high-level corporate document setting out the framework and principles for transport asset management in Suffolk (level 1 – this document).

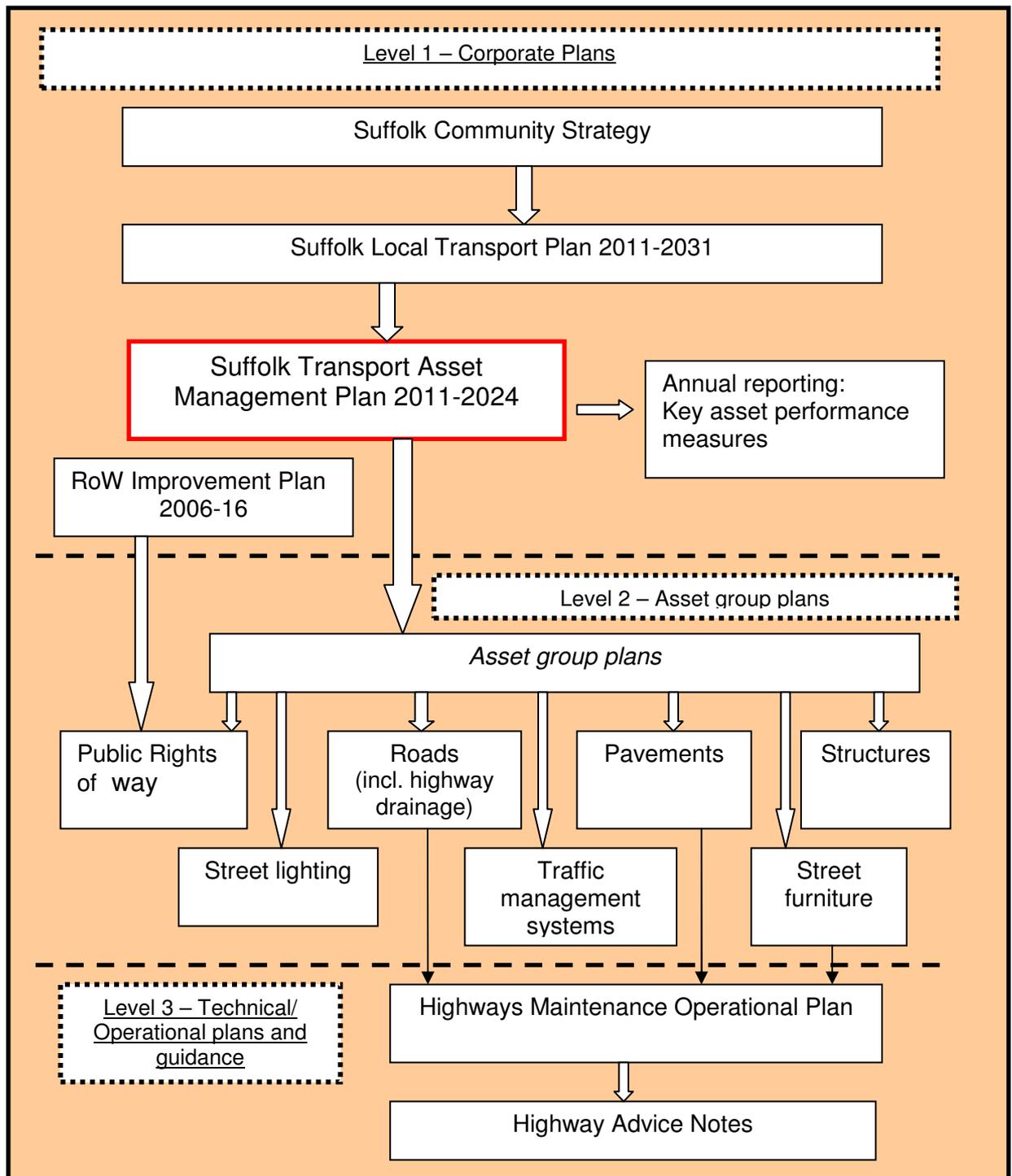
Beneath that more detailed, technical asset group plans will be drawn up by asset managers in Economy, Skills and Environment (level 2). These will be scaleable, so fuller and more detailed work will be done on the most important assets; less effort will be spent on less important assets.

The timetable for producing asset group plans will have regard to the increasingly demanding requirements of the "CIPFA code" for financial reporting, leading up to June 2013.

Also linked to these plans, there are important operational documents (Highway Maintenance Operational Plan and technical Highway Advice Notes) to guide the day-to-day work of the teams responsible for maintaining the assets (level 3).

The relationships between these plans are shown in the diagram below:

Asset management plans in context



The concept of annual reports on the key asset performance measures was described earlier in this Plan. This is essential if asset management planning is going to actively inform and influence budget levels, priorities and maintenance strategies.

The role of asset managers in the organisation is pivotal to the success of the asset management approach. In Suffolk, an active TAMP Steering Group worked on the first Transport Asset Management Plan, and has continued to meet monthly ever since. The Group brings the asset managers in Economy, Skills and Environment together, and it will continue under this Plan but will be relaunched with new terms of reference to reflect the commitment to the practice of asset management in the organisation.

Asset management should be specifically included in the role of asset managers at the appropriate level in the structure of the organisation. The defined role of asset managers should include:

- leading the production of “level 2” asset group plans;
- supporting the calculation of gross and depreciated replacement costs and annual depreciation, required for financial reporting;
- and supporting the collection and analysis of data required for annual asset performance reporting.

The Council’s overall approach to asset management and maintenance is for the local knowledge and engineering expertise of the staff in the service to be utilised as fully as possible. Thus the managers and teams concerned with managing the assets in each asset group will work up the asset group plans, using a standard template to help pose questions and steer their thinking.

Asset group plans should each start by reviewing the asset inventory and condition data for the assets, and will go on to contain three main sections:

- Life cycle plans
- Risk analysis
- Level of service

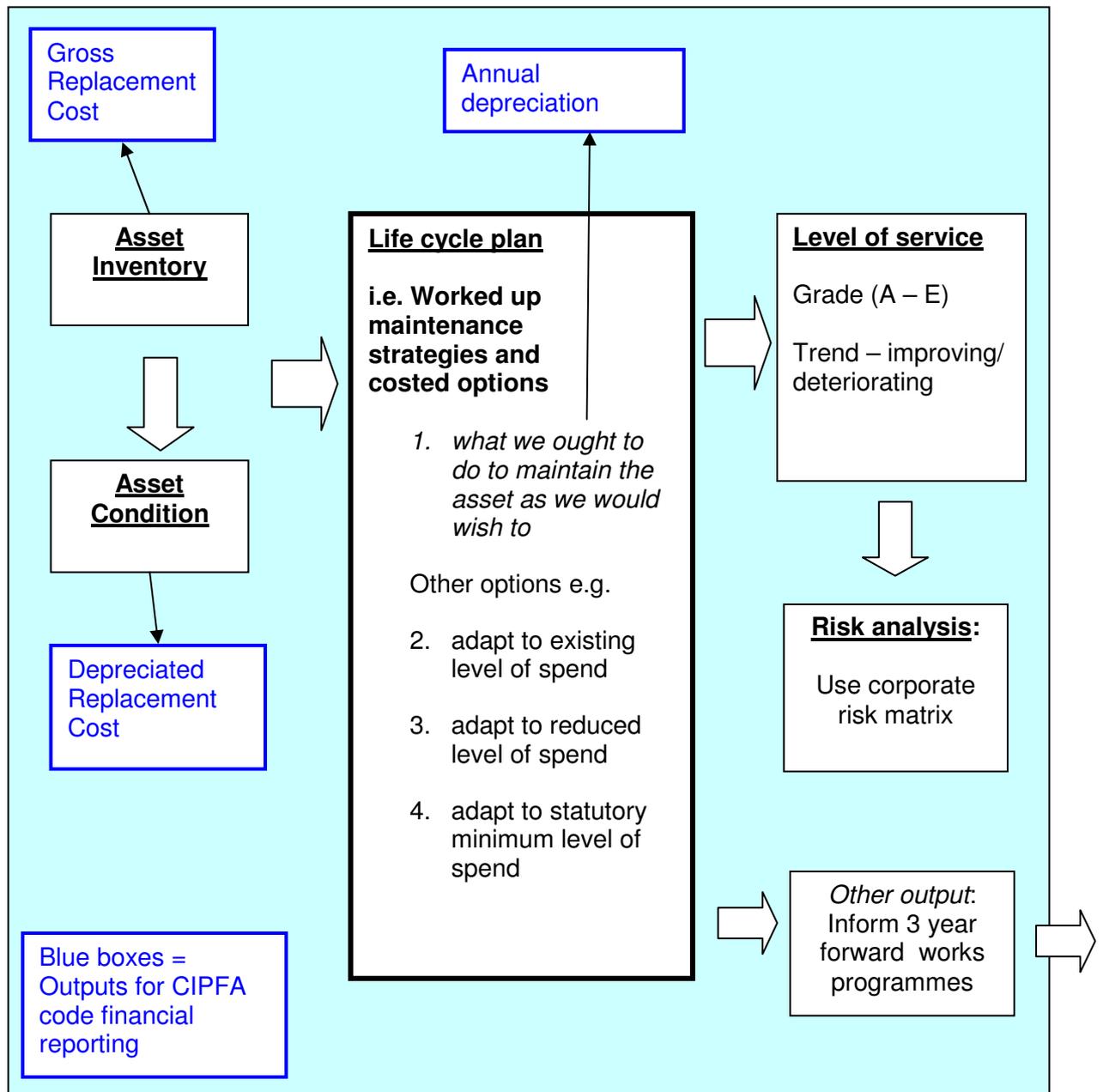
In the next section, the principles for producing the asset group plans are set out. Much of this work was carried out, and very thoroughly, in drawing up the first Transport Asset Management Plan. Wherever possible this material will be “recycled” to make the task easier, but at the very least, spending levels will need updating from 2004/05 to 2011/12 budget levels.

Asset group plans

The purpose of producing asset group plans is to provide information to inform asset management decisions (setting budget levels, determining priorities, agreeing maintenance strategies); and to provide the necessary data returns for “CIPFA code” financial reporting.

The process should allow us to meet both of these needs, as illustrated in the flow chart below, where the blue boxes represent the requirements for financial reporting:

Asset group plan process flow chart



The process begins by reviewing the asset inventory to establish the extent of the asset. This allows the production of a **Gross Replacement Cost**, by applying current cost rates to the numbers and quantities recorded in the asset inventory.

The next stage is to review data on the condition of the assets. This allows an estimate of accumulated depreciation (or how much of the asset life has been

consumed) to be made and hence the production of a **Depreciated Replacement Cost**.

The Life cycle plan requires the calculation of the annual cost of maintaining the asset in a stable condition (that is to say, what we ought to do to maintain the asset as we would wish to maintain it). This is a calculation based on asset managers' technical knowledge and experience of the service lives of road maintenance treatments in the real world. It enables the **annual depreciation** of the assets to be calculated.

Another output from this process is information to inform the selection of sites and treatments in 3 year forward maintenance programmes.

More detail on what the asset group plans will contain is set out below.

Life cycle plans

The Life cycle plan is a key tool in asset management. It allows asset managers to apply their knowledge of the service performance of assets to estimate the cost of maintenance options over the medium to long term and to identify their impacts level of service and risks.

Life cycle plans can be adapted and amended for varying levels of spend to reflect likely budget scenarios. But the asset managers' view of *what we ought to spend* should always be the starting point.

Because of the scale and complexity of the asset, roads will need to be broken down into several asset sub-groups which reflect typical performance characteristics. Each will then be worked up as a Life cycle plan. The ten road sub-groups are:

	A roads Dual	A roads Single	B roads	C roads	Unclassified roads
Rural roads (over 40 mph speed limit)					
Urban roads (speed limit 40 mph or less)					

Each road in the county falls into one of these 10 groups, each of which will have a Life cycle plan drawn up, based on typical treatment costs and performance over 60 years.

In addition to the 10 groups, there are 4 special "engineering difficulty" categories of roads which will each have their own service characteristics and Life cycle plan:

- Roads built on peat (mostly in the Fens, West area)
- Concrete estate roads

- Block paved roads
- C class and unclassified roads with high HGV traffic volumes

Life cycle plans support a structured approach to considering the whole life cost of various maintenance treatments (for example, surface dressing compared to a higher cost resurfacing) and help maintenance engineers to make informed choices about long-term value for money in scheme selection.

Level of service

The Level of service is not defined by how much we spend, but rather what the performance of the asset is as measured by customer satisfaction, technical condition surveys, cost and claim levels and so on.

Of course, reducing spend is likely to result in reduced Levels of service, and vice versa, but it is the performance outcome which should define the Level of service, not the input (spend) level.

More work is needed to define a Suffolk framework for Level of service analysis. One way forward is suggested by the Institution of Civil Engineers (ICE) “State of the Nation: Infrastructure” report (June 2010). This uses a grading system for infrastructure assets at the UK level from A to E where the grades used are:

- A. Fit for the future
- B. Adequate for now
- C. Requires attention
- D. At risk
- E. Unfit for purpose

We could adopt a similar method to provide a high-level summary assessment of the state of each of Suffolk’s transport asset groups, using local definitions of what constitutes “A to E” drawn from the information in the performance reporting framework.

This analysis would be enhanced by an assessment of “trend” – whether the current level of service is stable, improving or declining.

Risk Analysis

One of the most valuable parts of the first Suffolk TAMP is the detailed risk analysis for each asset group, at levels of service/spend between statutory minimum and “optimum”. This demonstrates very clearly the likely impacts of reducing spend levels on key risk areas like the safety of the travelling public, and potential financial loss to the Council.

The exercise will be repeated as part of the Asset group plan updating process, again leaning on the current corporate guidance on risk management to generate scoring matrices and to identify clearly the high, medium and low risks flowing from asset management decisions. This is particularly relevant

as budgets come under increasing pressure and savings options are put forward for consideration.

Timetable for producing updated Asset group plans

The work is closely tied to the need to produce financial information returns under the CIPFA Code. An indicative timetable for each asset group is set out below:

Asset group	Start date	Finish date	Time to complete
Road carriageway	1 June 2011	30 Sept 2012	18 months
Pavements	1 Sept 2011	31 August 2012	12 months
Structures	1 Sept 2011	31 August 2012	12 months
Street Lighting	1 June 2011	30 Nov 2011	6 months
Traffic management systems	1 Dec 2011	31 May 2012	6 months
Street furniture	1 June 2011	31 May 2012	12 months
Public Rights of Way	1 Oct 2011	30 Sept 2012	12 months

The production of the Asset group plans will be monitored through the officer TAMP Steering Group.

5. Data management and improvement

The first Suffolk TAMP included a thorough analysis of data “gaps”, and from this a data improvement plan was drawn up. The data improvement plan was reviewed and updated by the TAMP Steering Group in December 2009. Many of the actions were still uncompleted at that time.

A new data improvement plan, taking account of the financial reporting requirements of the CIPFA Code, and of progress made since December 2009, is included as Appendix 2 to this Plan.

Data needs have been defined as missing, incomplete or unreliable data, or concerns with the resilience of the systems in which data is held, which could compromise asset management planning processes, or financial reporting under the CIPFA Code and HM Treasury timetable. Much of the work to address these is already in hand and being managed through the project management system in Economy, Skills and Environment.

The Symology “Insight” asset management database is the Council’s default location to hold Transport asset management data. Other systems for holding asset data will only be used where there are compelling operational reasons. For example, the recent decision to use the “Mayrise” system for street lighting asset data rather than Insight was taken because of its proven suitability for some very specific needs in supporting the new intelligent lighting system for part-night lighting and dimming. Normally, new asset data when it is collected will be held in Insight.

The database used to record public rights of way asset information (“PROWS”) is under review to determine whether the data is suitable to be managed with Insight instead and would benefit from being transferred to that system. A project has also been started to transfer bridges data into Insight.

Suffice it to say here that good, reliable and up-to-date data is the cornerstone of good asset management planning. Unless we know what the asset is, and what condition it is in, then any decisions on budget and maintenance strategy will not be well-informed, and the most effective use of the budgets available may not be achieved.

STATISTICAL APPENDIX (Appendix 1)

Part A Facts and figures about Suffolk's transport assets

A.1 Transport Assets

The classification is based on the "CIPFA Code", except that Public Rights of Way are included in the scope of the Council's TAMP, despite not being regarded as highway assets in the CIPFA Code.

Asset group	What is included...
Roads	Road carriageways (bituminous, concrete and paved construction) Central reservations, roundabouts, traffic islands etc Embankments and cuttings Traffic calming features Fords Kerbs Road markings Road studs (cats eyes) Drainage (gullies, smaller culverts & drains) Sustainable drainage systems (SuDS) Highway fences and hedges Hard strips, verges, planted areas
Pavements	Footways Cycletracks Pedestrian areas
Structures	Bridges Large culverts Chambers/cellars/vaults Retaining walls Sign gantries & cantilever road signs Structural earthworks Underpasses & subways
Street Lighting	Lighting columns Lighting attached to walls/poles

	<p>Lit bollards</p> <p>Lit traffic signs</p> <p>Control gear, switches, cabling etc</p>
Street furniture	<p>Road signs (unlit)</p> <p>Safety fences</p> <p>Pedestrian guardrails</p> <p>Bollards</p> <p>Bus shelters</p> <p>Bus poles & signs, timetable cases</p> <p>Cattle grids</p> <p>Highway trees</p> <p>Verge marker posts</p> <p>Weather stations</p> <p>Traffic counters (fixed)</p>
Traffic management systems	<p>Traffic signals</p> <p>Pedestrian crossing signals</p> <p>Zebra crossings</p> <p>Safety cameras</p> <p>Variable message signs</p> <p>Vehicle activated signs</p> <p>Real time passenger information</p>
Public Rights of Way	<p>Surfaces</p> <p>Rights of Way Bridges</p> <p>Barriers</p> <p>Gates</p> <p>Stiles</p> <p>Revetments</p> <p>Boardwalks</p> <p>Signs</p>
Land	<p>Land beneath the highway (note: surplus land, sites acquired for future schemes etc are regarded and valued as Corporate Property, not Highway, assets)</p>

A.2 Suffolk road lengths by environment

Class	Urban	Rural	Total
	Km	Km	
A roads	223.94	417.48	641
	35%	65%	
B roads	286.87	444.80	732
	39%	61%	
C roads	545.80	1,302.65	1,848
	30%	70%	
U roads	1,752.07	1,558.27	3,310
	53%	47%	
Totals	2,808.68	3,723.19	6,532
	43%	57%	
Miles	1745.28	2313.55	4,059

Notes

Data is as at March 2010.

Urban roads are defined as those with a speed limit of 40 mph or less.

Table A.3 Road lengths by Area/Agent

	West	Central	East	Ipswich	County total
	Km	km	km	km	km
A roads	183	190	231	38	642
B roads	134	293	293	12	732
C roads	443	795	586	25	1,849
Unclassified roads	670	1,173	1,189	278	3,310
Total	1,429	2,452	2,298	353	6,532
%age	21.9%	37.5%	35.2%	5.4%	100%

Note: the former St Edmundsbury Agency (town of Bury St Edmunds only) has been absorbed into the West Area from 1 April 2011.

The County Council Areas are aligned with district council boundaries (West: Forest Heath & St Edmundsbury; Central: Mid-Suffolk & Babergh; East: Waveney & Suffolk Coastal).

A.4 Works budgets

2010/11 works budget distribution:

Asset group	Revenue (£)	Capital (£)	One-off support in 2010/11 (£)	Total (£)	% of total budget
Roads	2,404,923	14,619,000	3,475,000	20,498,923	57.5%
Pavements	1,280,000	1,500,000		2,780,000	7.8%
Structures	450,000	2,500,000		2,950,000	8.3%
Street lighting & traffic signals	3,136,926	1,550,000		4,686,926	13.2%
ROWs	304,094			304,094	0.85%
Environment & safety*	4,103,469	300,000		4,403,469	12.4%
Totals	11,679,412	20,469,000	3,475,000	35,623,412	100.0%

2011/12 works budget distribution:

Asset group	Revenue (£)	Capital (£)	One-off support in 2011/12 (£)	Total (£)	% of total budget
Roads	3,096,533	17,992,000	4,441,187	25,529,720	67.8%
Pavements	972,240	1,000,000		1,972,240	5.2%
Structures	450,000	1,550,000		2,000,000	5.3%
Street lighting & traffic signals	2,997,308	500,000		3,497,308	9.3%
ROWs	250,176	150,000		400,176	1.1%
Environment & safety*	4,235,884			4,235,884	11.3%
Totals	12,002,141	21,192,000	4,441,187	37,635,328	100.0%

*this budget covers drainage, trees, verges, fences and barriers, unlit signs, road markings.

Budgets for winter service and electrical energy are not included in the above figures.

Part B Key performance measure data

B.1 Public satisfaction

Results from the NHT Survey June 2010:

	Suffolk score (out of 100)	Rank (out of 24 County Councils)	Rank (out of 9 East of England councils)
Overall satisfaction with the condition of highways (roads & pavements)	43.73	3rd	1st
Satisfaction with highway maintenance	53.86	4th	1st

B.2 Condition

The percentage of A roads where maintenance should be considered (NI 168):

	2006/07	2007/08	2008/09	2009/10	2010/11
Suffolk	5	4	4	4	4
County councils ave.	6	4	4	5	*
England ave.	7	5	5	6	*

The percentage of B and C roads where maintenance should be considered (NI 169):

	2006/07	2007/08	2008/09	2009/10	2010/11
Suffolk	11	9	9	9	9
County councils ave.	13	8	8	9	*
England ave.	13	8	9	8	*

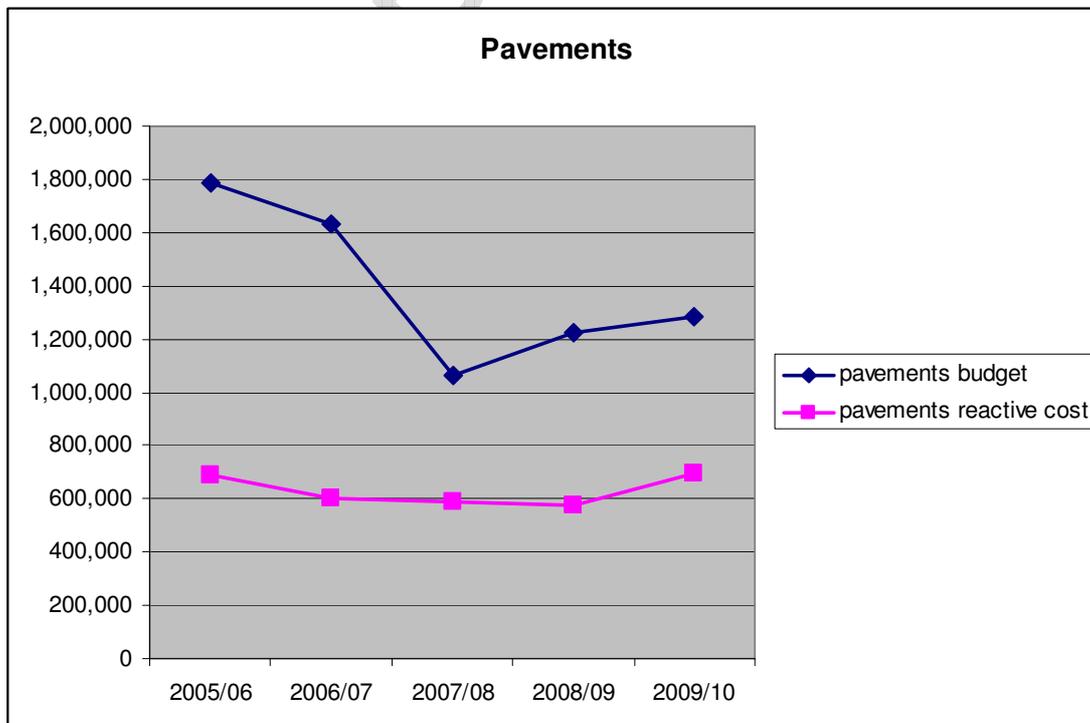
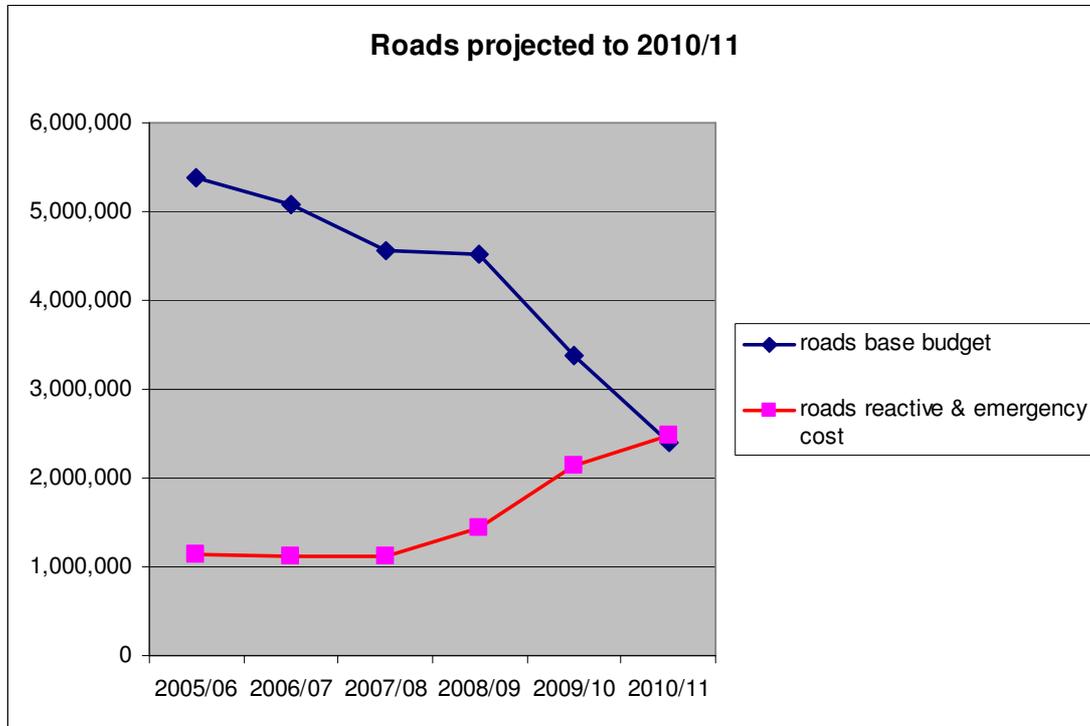
The percentage of unclassified roads where maintenance should be considered:

	2006/07	2007/08	2008/09	2009/10	2010/11
Suffolk	25	27	27	26	27
County councils ave.	17	16	15	15	*
England ave.	16	15	15	15	*

*2010/11 National averages not available until October 2011.

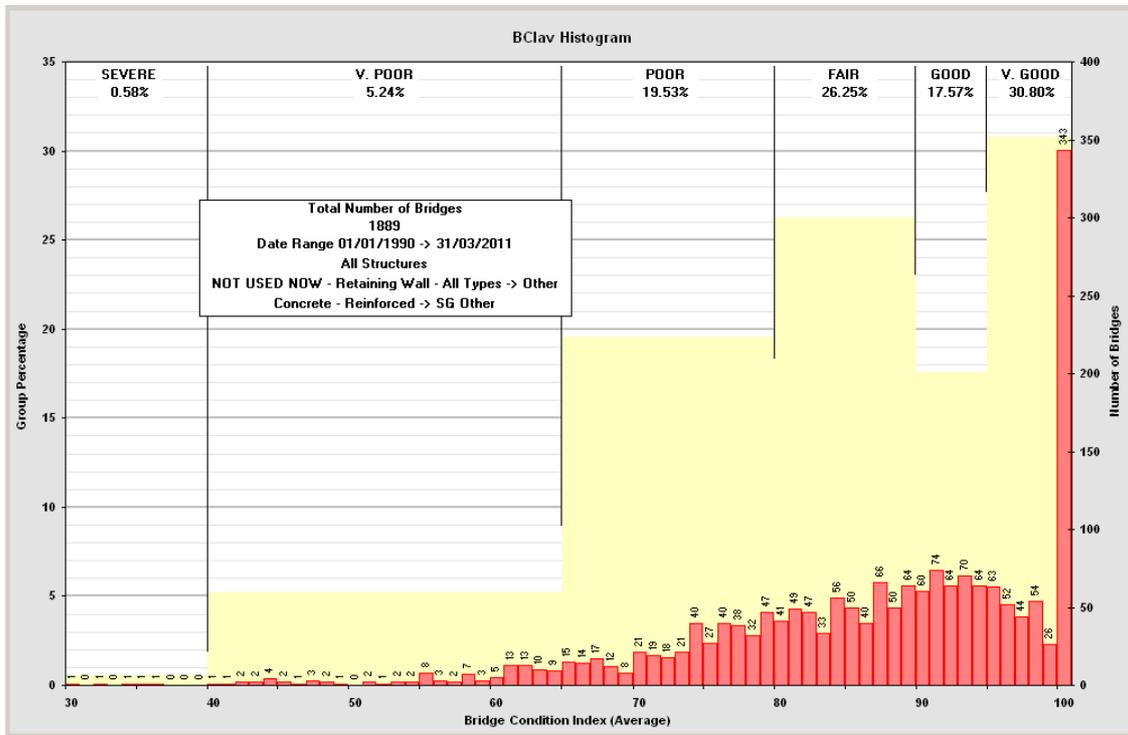
B.3 Reactive costs – roads and pavements

The charts below are based on apportionments of revenue spend to reactive work. The 2010/11 figure roads is a forecast made early in the year and the final outturn for the year is not yet known.

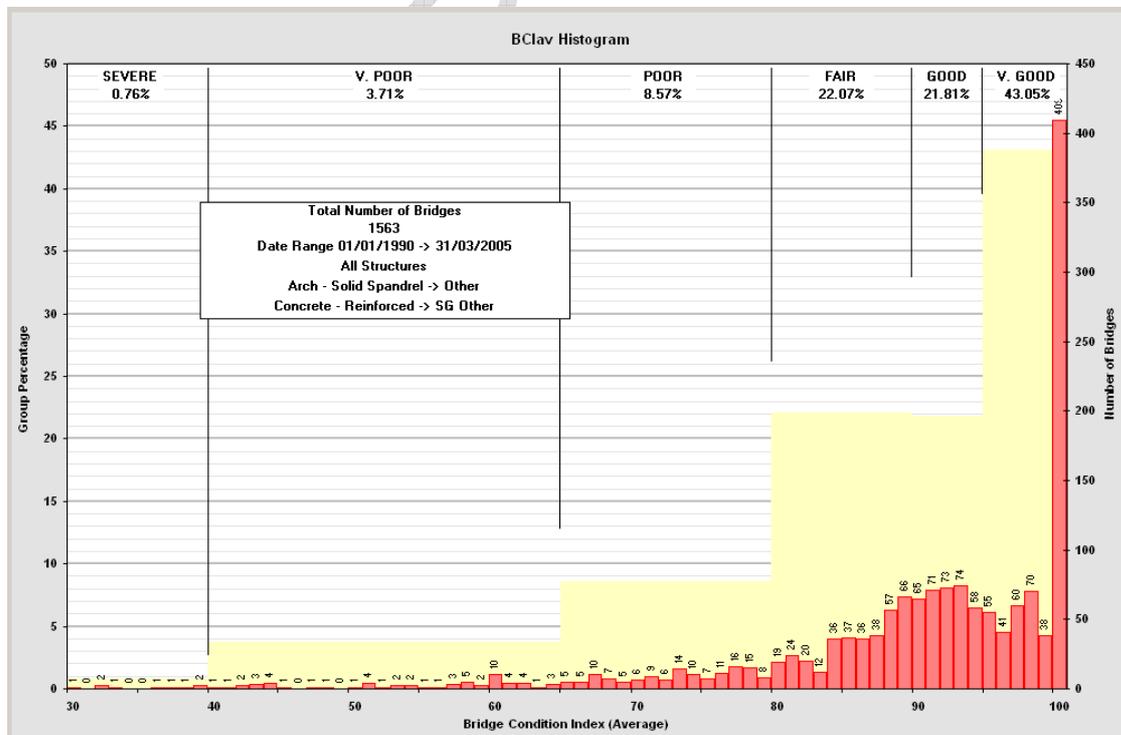


B.4 Bridge Condition Index Histogram

March 2011



March 2005



B.5 Claims history – roads and pavements

The figures below are taken from the County Council's claims database. Claims made to Ipswich and St Edmundsbury Borough Councils are not included.

	Road carriageway		Pavements	
	No. of claims	% successfully defended (of closed claims)	No. of claims	% successfully defended (of closed claims)
2008/09	242	74.4	55	82.6
2009/10	454	78.5	71	87.3
2010/11	161	83.5	51	100.0

B.6 Asset value

Gross Replacement Cost	TAMP estimate March 2006 (£ million)	HAMFIG calculation March 2010 (£ million)
Road carriageway	1,800	3,386
Linear features		1,903
Drainage, signs & lines	130	
Roads total	1,930	5,289
Pavements (Note 1)	194	560
Street lighting	93	
Note (1)	calc incl. pavements	5,849
	Less calc excl pavements	5,289
	notional pavement GRC	560

The HAMFIG (Highway Asset Management Financial Information Group) calculation is based on supplied default road carriageway widths and cost rates produced by HAMFIG, working with CIPFA on the introduction of the new Code of Practice for transport asset valuation. These figures have not been audited.

For comparison, the value of the council's property assets as at 31 March 2010 was £1,437 million.

Appendix 2 – Asset management data improvement plan

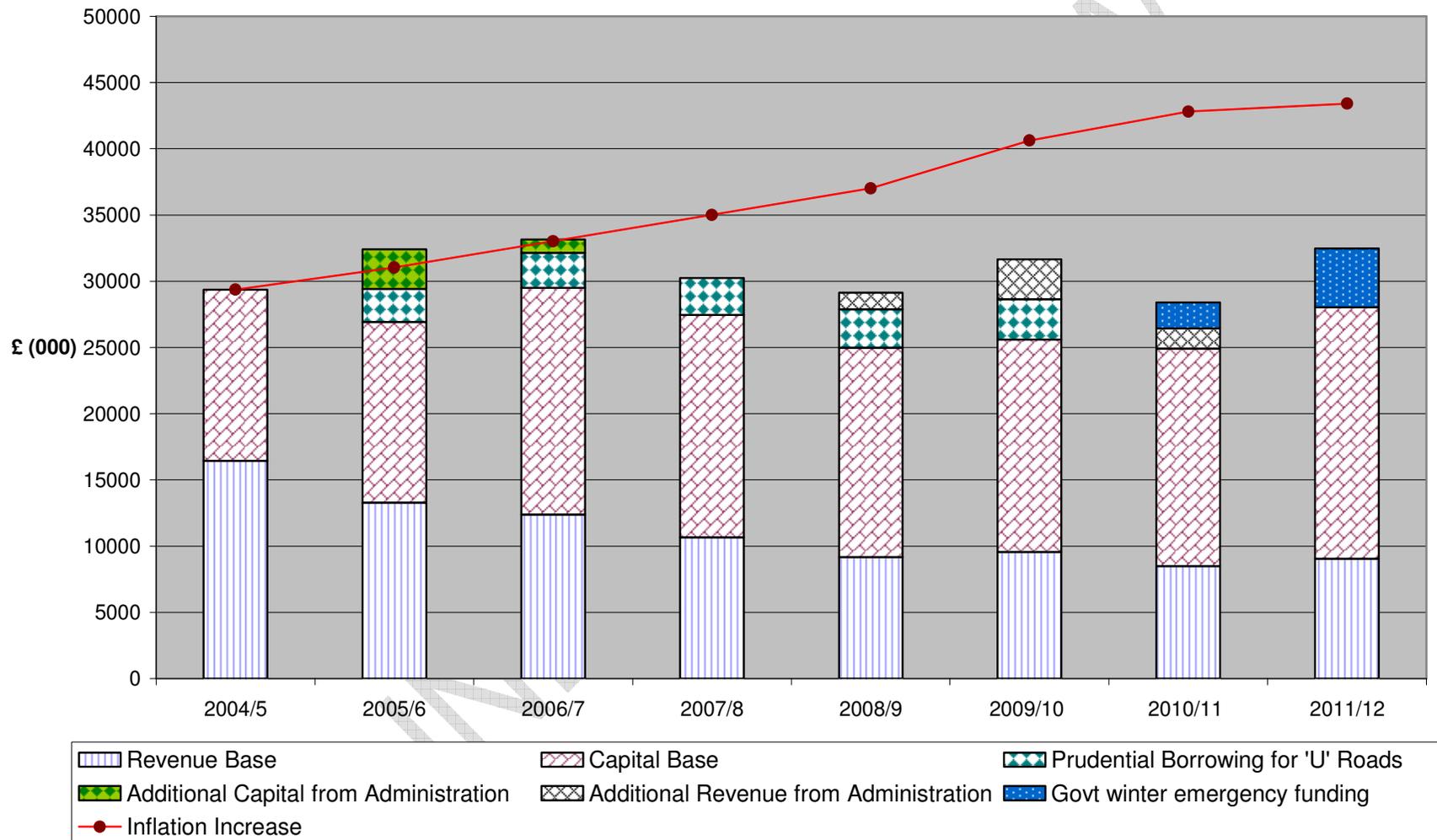
Data needs	Why is this important? Critical Timescale?	Present position	Actions to be taken
Roads			
R-1 Networking data for recent new estate road adoptions	To establish accurate data on network lengths. Must be in place for first audited WGA return (June 2012).	AECOM were instructed to identify and advise extent of non-networked roads by end of 2011.	Data to be loaded onto Insight by July 2011 (Data team).
R-2 Accurate data on road carriageway widths	To carry out gross and depreciated replacement cost calculations. Default widths will be withdrawn for the 2011/12 return (July 2012).	Insight holds data on width at start and end of sections. This may not produce a good average figure.	Investigate other data already held and carry out some sample check measurements on site (Data team).
Drainage and flooding			
D-1 Inventory data on gully type, position as well as silting frequency	To achieve efficiency savings by establishing targeted emptying cycles for all gullies. Significant savings must be delivered in 2012/13.	Data capture devices were purchased using DfT reward fund. Carillion supervising the collection of data by Bagnall & Morris' operatives.	Data to be loaded onto Insight (Data team).
D-2 Register of flood risk assets and record of their ownership and condition	New duty of Lead Local Flood Authorities under the Flood and Water Mgt Act 2010. Duty effective from 1 April 2011. Data on new "SuDS" adoptions must also be recorded.	Project being started alongside information management from flood investigations. Scope of register is all "flood" assets not just SCC's.	Review available options for data management including Insight (Data team/Flood & Water Manager).

Data needs	Why is this important? Critical Timescale?	Present position	Actions to be taken
Pavements			
P-1 Inventory data for all categories of pavements, including those remote from the carriageway.	To carry out gross and depreciated replacement cost calculations. Default pavement lengths and widths will be withdrawn for the 2011/12 return (July 2012). Can also be used to make a formula distribution of budgets to Area offices and Ipswich.	AECOM were instructed to collect inventory data on all "missing" pavements during 2010/11.	Inventory data collected and is being loaded onto Insight database (Data team).
P-2 Condition data capable of being processed in UKPMS for all pavements.	To enable the production of a depreciated replacement cost for pavements. Must be in place for first audited WGA return (June 2012). Can also be used to make a targeted distribution of budgets based on condition and need.	Some trial data was collected by AECOM using a driven survey in 2010/11 during inventory data collection site survey work.	Decisions needed on condition survey methodology, programme and sample size/ sampling approach (TAMP Steering Group).
Structures			
S-1 All data in the Bridge Register to be held in a fit for purpose and resilient system	Data currently held in an unsupported MS Access system.	A review has concluded that Insight is suitable to hold bridges data and meet the functional needs of the Bridges team.	A project has been established to transfer core data in the Bridge Register into Insight.

Data needs	Why is this important? Critical Timescale?	Present position	Actions to be taken
S-2 Lack of complete information on retaining walls/highway support structures.	To establish accurate data on all retaining walls/highway support structures to allow gross and depreciated replacement costs to be established.	Good data exists for all known retaining/highway support structures, but many are out of view and so difficult to find or have ownership queries.	Data to be collected as and when issues arise.
Street Lighting & Traffic Management systems			
SL-1 Complete inventory of all electrical equipment on the highway	This is needed to support effective maintenance by contractors and electrical energy procurement. Supports asset management by holding records of column structural testing and traffic signal testing.	Good data exists for street lighting and traffic signals. Limited data for lit signs and other electrical equipment.	Existing database (ROLMIS) will not support intelligent street lighting and is being replaced by Mayrise (ITS and Street Lighting team).
Street furniture			
SF-1 Inventory data collected.	This is needed to support the street furniture component in financial reporting. Limited operational benefit currently since most maintenance is reactive not planned. First audited return in June 2012.	Very good data exists for passenger transport assets. Limited data on road signs etc (other than for concrete post & rail fences collected as a risk management exercise) – first TAMP provides estimated numbers of unlit signs, fences etc.	Decision needed on method of collecting (sampling, desktop, video/still photography, site survey)

Public Rights of Way			
PR-1 Data on Rights of Way bridges to be held in the main bridges database	Needs to be consistent with Bridges data to support Bridge team in undertaking scheduled inspections of the Right of Way bridge stock.	Data currently held in an Oracle database (PROWS). There is limited expertise to support the system. Detailed business case being prepared to move PROWS database data to Insight.	Compete the business case analysis and make decision on moving to Insight in 2011/12.
PR-2 Inventory data for all categories of public rights of way	To ensure future resilience of Rights of Way data, consistency with other highways data and compatibility on customer reporting through the Insight Customer Service Module. By end of 2011/12.	As PR-1.	As PR-1.
Land			
L-1 Accurate data on full width of the highway	This is needed to support the land value component in financial reporting. First audited return in June 2012.	No data.	Decision needed on method of collecting (sampling, desktop, site survey etc)

Appendix 3 Highways Maintenance Funding 2004/05 - 2011/12



Notes

Revenue budgets in the chart include pavements, roads, environment & safety, surveys and structures. Not included: winter maintenance, street lighting and traffic signals.

Capital budgets in the chart cover pavements and roads only. Not included: bridges, street lighting and traffic signals.

The Inflation line is the per annum increase in contract cost rates agreed annually since the commencement of Contract 2003, this is based on published national construction industry indices.

UNDER REVIEW