Public Document Pack

Individual Decision

The attached report will be taken as an Individual Portfolio Member Decision on:

Monday, 26th March, 2012

Ref:	Title	Portfolio Member(s)	Page No.
ID2410	**Highway Asset Management Plan 2012/13 - 2016/17**	Councillor David Betts	1 - 130

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Individual Executive Member Decision

Title of Report:	**Highway Asset Management Plan 2012/13 - 2016/2017**
Report to be considered by:	Individual Executive Member Decision
Date on which Decision is to be taken:	26 March 2012
Forward Plan Ref:	ID2410

Purpose of Report:

To formalise adoption of the Council's first Highway Asset Management Plan relating to the West Berkshire road network.

Recommended Action:

To adopt the Highway Asset Management Plan.

Reason for decision to be taken: To formalise Highway Asset Management and comply with current national standards and guidelines with regards to Asset Management, Asset Valuation and Whole Government Accounts.

Other options considered: None.

Key background documentation: Code of Practice Transport/Infrastructure Assets
County Surveyors Society's 'Framework for Highway Asset Management'
Code of Practice - Well Maintained Roads

Portfolio Member Details	
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Implications

Policy:	Adoption of this plan will enable the Council to deliver highway asset management in accordance with national requirements and guidance.
Financial:	None arsing from this report.
Personnel:	n/a
Legal/Procurement:	n/a
Environmental:	A well maintained road will contribute to an improved environment.
Property:	The public highway is an important and valuable asset. Failure to maintain it will devalue the asset and conflict with the Government's aim to implement Highway Asset Management and Whole Life Accounting.
Risk Management:	Failure to maintain the asset will affect availability, value, safety and the Council's ability to meet its legal duty to maintain a safe network under the Highways Act 1980.
Equalities Impact Assessment:	No impacts to consider. Stage 1 EIA attached as Appendix B.

Consultation Responses

Members:

Leader of Council:	Councillor Graham Jones supports the report and the Officer's recommendation.
Overview & Scrutiny Management Commission Chairman:	Councillor Brian Bedwell had no comment to make.
Ward Members:	All Members Consulted
Opposition Spokesperson:	Councillor Keith Woodhams had no comment to make.
Local Stakeholders:	Transport Policy Task Group, Resource Management Working Group.
Officers Consulted:	Mark Edwards, Paul Clements, Phil Crockford, Miles Roberts, Jon Winstanley, Alan Braisher
Trade Union:	n/a

Is this item subject to call-in?	Yes: ☒	No: ☐

If not subject to call-in please put a cross in the appropriate box:

The item is due to be referred to Council for final approval	☐
Delays in implementation could have serious financial implications for the Council	☐
Delays in implementation could compromise the Council's position	☐

Considered or reviewed by Overview and Scrutiny Management Commission or associated Task Groups within preceding six months	☐
Item is Urgent Key Decision	☐
Report is to note only	☐

Supporting Information

1. Background

1.1 Managing and maintaining a transport network is a complex task and over time Highway Authorities have developed and evolved practices for dealing with this. Some of these practices are common across authorities whilst others are localised.

1.2 The advent of asset management has grown out of maintenance management, and in particular the awareness and recognition at Government level has highlighted the need for all highway authorities to embrace the ethos and embed the practices of asset management into their operations.

1.3 Local Highway Authorities are under increasing pressure to adopt asset management as a means of demonstrating the need for funding, providing efficiencies, measuring performance and compliance, and driving continual improvement.

1.4 A wide range of relevant documents exist that describe asset management, including some specifically published for the highways industry:

- County Surveyors Society (CSS) Framework for Highway Asset Management
- Maintenance Codes of Practice (for Highways, Structures and Lighting)
- Chartered Institute of Public Finance & Accountancy (CIPFA) Code of Practice on Transport/Infrastructure Assets.

1.5 Whilst the Highway Asset Management Plan (HAMP) as a document is due to be published in April 2012, asset management and the development and implementation of its principles have been in place for many years in West Berkshire in supporting and delivering the Local Transport Plan, Three Year Highway Improvement Programme and other programmed improvements on the highway.

2. Consultation

2.1 The Highway Asset Management Plan has been developed over a period of time and was formally introduced at a Member's Development Session in November 2011. The draft was also considered by the Transport Policy Task Group on the 25 November 2011 with a view to having it formally adopted in April 2012 and the Resource Management Work Group on the 28 February 2012. Where appropriate, the comments/actions from both meetings have been incorporated within this report.

2.2 All Members were consulted during February and a copy of the Plan was made available in the Members Room.

Proposal and Recommendations

2.3 It is recommended that the Executive Portfolio Member for Highways, Transport (Operational), ICT and Customer Services approves and formally adopts the Highways Asset Management Plan as Council Policy.

Executive Report

1. Introduction

1.1 The Framework for Highway Asset Management was published by the County Surveyor's Society in July 2004 which formally detailed the concept of asset management with respect to managing highway infrastructure. The County Surveyors Society (CSS), together with the Local Authority Technical Advisors Group (TAG) produced the framework to facilitate the meaningful exchange of knowledge and experience on the subject and:

- introduce the concept of asset management as it applies to UK road networks
- provide a reference for authorities who wish to introduce an asset management approach to their business processes and
- assist with the preparation of asset management plans

1.2 This framework was strengthened in 2005 with the publication of the Code of Practice for Highways Maintenance and Management and government guidance where local authorities in England were encouraged to draw up Highway Asset Management Plans (HAMP) as part of the second round of LTP preparation consistent with the advice contained in the CSS Framework document

1.3 The Council's approach to highway maintenance and asset management is described in the Local Transport Plan 2011 – 2026 (LTP). Highway maintenance and improvement is one of the six local transport goals set out in the LTP. The LTP also shows how this goal and the Council's sustainable approach helps to address other key issues identified in the plan such as safer travel, minimising the impact on the environment and improving accessibility. The LTP confirms that the Council will continue to operate a rolling highway improvement programme refreshed annually through its supporting Implementation Plan.

1.4 The concepts of asset management are already being implemented in West Berkshire, although it has only recently been possible to finalise the contents of the Highways Asset Management Plan (HAMP). The HAMP seeks to reflect best practice and current guidance and formally sets out a plan for managing the highway asset in West Berkshire.

1.5 The features that characterise the asset management approach are as follows:

- considers the whole asset together, rather than individual asset components
- couples sound engineering with sound business and economic practice
- focuses on the delivery of specific levels of service to customers
- promotes informed decision making, based on an assessment of the implications of current and future service provision and cost of various options
- promotes continuous improvement
- requires an appropriate level of data and knowledge of the extent, and specification, of our highway assets, and their condition and performance.

1.6 A ‘sister’ document – the Network Management Plan has also been published to define the strategy for managing use of the road network. In combination with a detailed asset valuation of the road network and a manual of policies and standards, this suite of documents will form the Council’s Transport Asset Management Plan (TAMP).

2. Draft Highway Asset Management Plan

2.1 The draft HAMP is attached as Appendix 1 and is divided into distinct sections. Sections 2 to 4 act as an introduction to the core part of the document, the lifecycle plans for individual asset groups. Section 2 introduces the concept of levels of service to determine the required ‘output’ from the asset. Section 3 describes the funding available for asset maintenance before Section 4 examines how our assets are valued, with the initial asset valuation detailed in Appendix E of the plan. Section 5 introduces the lifecycle plans which are set out for the four asset groups covered in this first version of the HAMP in Appendices A to D.

2.2 The lifecycle plans describe the asset, assess the required levels of service, and analyse best practice maintenance techniques. They then define options for future investment to meet HAMP objectives, depending on future funding levels and taking note of predicted future changes affecting the quantity of the asset or the demand on it. Total funding must be balanced between the asset groups to ensure that overall performance across all assets is optimised.

2.3 Section 6 summarises the expenditure and expected outcomes for the four asset groups. Any changes to approaches or techniques revealed through the lifecycle plans are also summarised, and the whole forms the Asset Management Strategy.

2.4 Section 7 summarises the risk analysis for the plan, which is set out initially in the lifecycle plans, and Section 8 describes the performance measurement regime put in place to ensure that the implementation of the HAMP can be properly monitored. Section 9 details the improvement work which will be carried out to develop the second version of the HAMP for summer 2016, as well as indicating the frequency of updating for all sections of the document.

2.5 It should be noted that the HAMP is a ‘live’ document and will be regularly updated and developed by the Highways and Transport Service as described in Chapter 4.

3. Finance

3.1 In accordance with the Code of Practice on Transport, Infrastructure Assets, the Council has developed and adopted an evidence-based asset management approach to determine maintenance needs on the network which deliver efficiency savings, sustainable service delivery and robust capital planning and operation of the Prudential Code.

3.2 The local highway network and other local infrastructure assets together represent by far the biggest capital asset that the Council holds. Transport networks are vital to the economic prosperity (not only locally but also nationally) and quality of life in terms of comfort, safety and appearance. The current estimated gross replacement cost of West Berkshire’s local highway network is £1,352 million.

3.3 Deterioration modelling of the District's highway network has established that to maintain the condition of the network at their current levels (service levels), requires an annual investment of £4.3m where the current service levels have been set at 5% on A roads, 9% on B & C roads and 12% on the unclassified roads. The % reflects the length of road requiring urgent maintenance.

4. Recommendation

4.1 It is recommended that the Executive Portfolio Member for Highways, Transport (Operational), ICT and Customer Services approves and formally adopts the Highways Asset Management Plan as Council Policy.

Appendices

Appendix A – Draft Highway Asset Management Plan 2012/13 – 2016/17
Appendix B - Equality Impact Assessment – Stage 1

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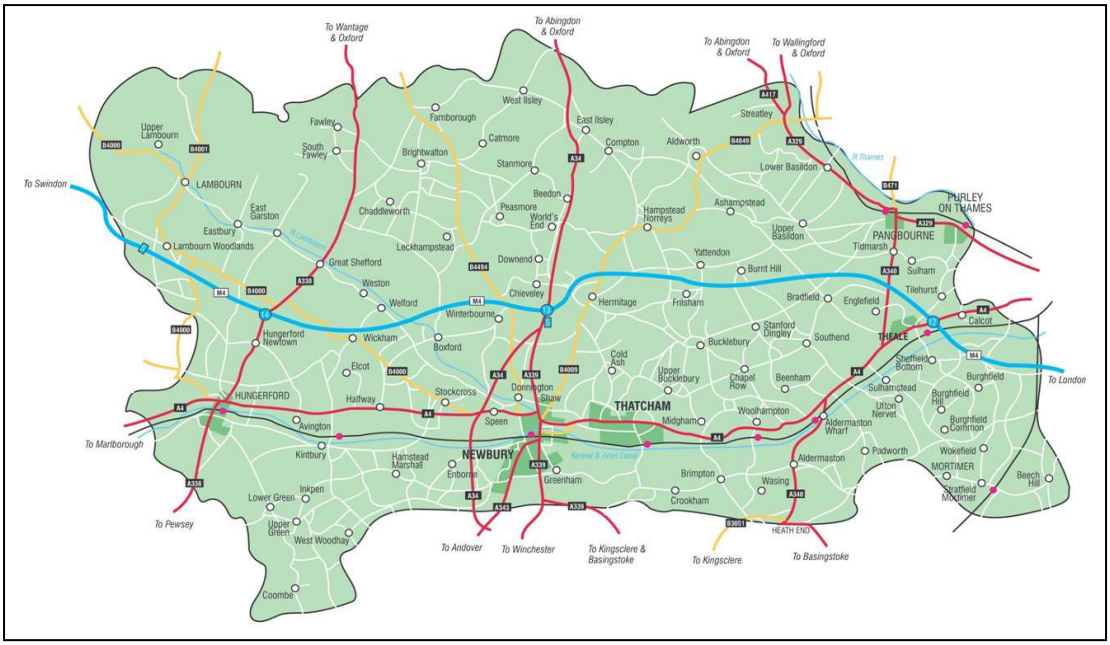
West Berkshire Council

Highway Asset Management Plan 2012/13 – 2016/17

(First Edition – April 2012)

Highways and Transport
West Berkshire Council
Council Offices
Market Street
Newbury
Berkshire
RG14 5LD



CONTENTS

Executive Summary

West Berkshire Council has a statutory duty to maintain and manage its highway network. A well-maintained network is not only a valuable asset to the community but is also fundamental to achieving the strategic objectives of the Council. It is also essential in order to deliver the transport goals of the Local Transport Plan.

Good transport is vital for a thriving economy, providing access to employment and education as well as to the services and supplies that people need. Maintenance of the highway network is essential to enable it to share the burden as a key part of the overall transport network.

This Highway Asset Management Plan (HAMP) provides guidance on the delivery of value for money highway maintenance services, consistent with the aims and ambitions of the Council Strategy 2012-2016 where 'Focus on carrying out essential highways maintenance' is defined as a key outcome under the 'Promoting a Vibrant District' priority. The HAMP seeks to do this by providing a safer highway network, improved travelling conditions for all highway users, and ensuring greater care of the local environment.

A 'sister' document – the Network Management Plan has also been developed to define the strategy for managing use of the road network. In combination with a detailed asset valuation of the road network and a Manual of Policies and Standards, this suite of documents will form the Council's Transport Asset Management Plan (TAMP).

The West Berkshire Road network is regularly inspected to assess its safety, serviceability and integrity as well as to ensure that all works are carried out within the prescribed regulatory standards. Dependent upon the degree of deficiency found, defined processes are then followed to provide effective solutions. In the selection of materials and treatments, the HAMP considers the key issues of environment, quality and value. This aims to maximise the contribution made by highway maintenance to sustaining West Berkshire's biodiversity and character.

The HAMP acknowledges that highway maintenance does not operate in isolation and that there are a number of related functions that could affect, and be affected by, highway maintenance activities.

The HAMP's foundation strategy utilises a logical and systematic approach in accordance with 'value for money' and 'asset management principles', and continuous improvement. Essential elements include statutory obligations, responsiveness to needs of the community and maintaining asset value. Regard is given to the relevance of condition standards and the key issues of Safety, Serviceability and Sustainability. HAMP policies, objectives and standards have been formulated for each maintenance activity and will be reviewed regularly to ensure that they remain compliant with national objectives and respond to changes brought about by new legislation and technology.

The HAMP defines the key elements of the highway asset describing appropriate levels of service depending on the position in the network hierarchy and the understanding and management of the impact of risk. This enables priority for maintenance within the available budget to be established.

The funding of an appropriate highway maintenance service is made possible by the Council's Medium Term Financial Strategy, whilst larger scale highway improvement projects are funded through the Capital Programme and Policy. These essential forward planning documents have enabled the Highway and Transport Service to develop a Three Year Highway Improvement Programme which not only enables its proposals for a better road network to be well publicised in advance, thus helping to manage expectations, but which has also resulted in a gradual improvement in road condition across the network.

Regular monitoring will enable the effectiveness of the HAMP to be judged in achieving its stated aims and periodic reviews will be completed. This approach will provide a clear history of the development, evaluation and quality delivered as the Council seeks to provide continuous improvement in the management of the West Berkshire road network for all its users.

1. Introduction

1.1 This is West Berkshire Council's first highway asset management plan, or HAMP. Proper asset management is essential and the Council has been following good practice in managing its transport assets for many years. However, this is the first truly systematic analysis, intended to identify the best maintenance practices to minimise whole-life costs of the assets and at the same time meet as far as is possible, the levels of service demanded by our customers within the funding likely to be available.

1.2 The data requirements for the production of the HAMP are complex, particularly gathering together data on the extent and condition of assets. This first version therefore details only the four largest asset groups of:

- carriageways
- footways
- bridges
- street-lighting

1.3. Later editions of the HAMP will add the Council's other transport assets:

- highway drainage
- cycleways
- other highway structures
- safety fences
- traffic signals and signs
- street furniture
- public rights of way
- highway verges and areas of soft landscaping

1.4 Later editions will also reflect the results of further work to improve the data and analysis set out in this document. Areas where further work is required are detailed in section 9.

1.5 The HAMP is a part of the Council's wider work on asset management and reflects input from many sources, including our own Local Transport Plan, the County Surveyors Society's 'Framework for Highway Asset Management' document, the Code of Practice – Well Maintained Highways and the recent CIPFA Code of Practice on Transport/Infrastructure Assets.

The Wider Context

1.6 The HAMP fits into a wider corporate initiative on asset management planning, reflecting the increasing importance given to the effective management of all our assets. A corporate asset management plan for the Council has been produced, detailing the five-year planning cycle, and in its role as local education authority the Council also produces an asset management plan for capital expenditure on school buildings and sites.

1.7 Initiatives in asset management planning are themselves part of the wider work of the Council and are intended to help the authority respond effectively to the many service and financial pressures on it and in doing so to deliver:

- continuous performance
- focused and clearly defined projects
- reduced bureaucracy and waste
- maximised economies of scale
- clear benefits of investment.

The Objectives of the HAMP

1.8 The HAMP builds on existing processes and systems, providing a continuous framework of review to help inform decisions on the optimisation of budgets and scheme programmes. The asset management approach is intended to produce:

- reduced whole-life costs, through better planning and review of techniques
- better customer satisfaction through defining and meeting levels of service
- better control of risks
- better informed, and more transparent, investment decision-making

1.9 In achieving this, the HAMP should be seen not as a stand-alone document but as a tactical plan which provides the linkage between the strategic goals of the Council and its detailed operational and service plans. For West Berkshire these include other key documents as follows:

- West Berkshire Sustainable Community Strategy
- West Berkshire Council Strategy
- West Berkshire Medium Term Financial Strategy
- Local Transport Plan
- departmental and local service plans

1.10 The HAMP objectives relate particularly to the local goals of the Local Transport Plan which are:

- to improve travel choice and encourage sustainable travel
- to support the economy and quality of life by minimising congestion and improving reliability on West Berkshire's transport networks
- to maintain, make best use of and improve West Berkshire's transport networks for all modes of travel
- to improve access to services and facilities
- to improve and promote opportunities for healthy and safe travel
- to minimise energy consumption and the impact of all forms of travel on the environment

Stakeholders

1.11 Stakeholders include:

- all road users, motorised and non motorised
- organisations representing different users, for example the West Berkshire cycle forum, Newbury Town Centre Partnership, Chambers of Commerce, Sovereign Housing.
- public transport operators
- road haulage companies
- Members of the Council and Parish and Town Councils
- local residents

Layout of the Document

1.12 Sections 2 to 4 act as an introduction to the core part of the document and the lifecycle plans for individual asset groups. Section 2 introduces the concept of levels of service to determine the required 'output' from the asset. Section 3 describes the funding available for asset maintenance and Section 4 examines how our assets are valued, with the initial asset valuation detailed in Appendix E. Section 5 introduces the lifecycle plans which are set out for the four asset groups covered in this first version of the HAMP in Appendices A to D.

1.13 The lifecycle plans describe the asset, assess the required levels of service, and analyse best practice maintenance techniques. They then define options for future investment to meet HAMP objectives, depending on future funding levels and taking note of predicted future changes affecting the quantity of the asset or the demand on it. Total funding must be balanced between the asset groups to ensure that overall performance across all assets is optimised.

1.14 Section 6 summarises the expenditure and expected outcomes for the four asset groups. Any changes to approaches or techniques revealed through the lifecycle plans are also summarised and together this forms the Asset Management Strategy. Section 7 summarises the risk analysis for the plan, which is set out initially in the lifecycle plans, and Section 8 describes the performance measurement regime put in place to ensure the implementation of the HAMP can be properly monitored. Section 9 details the improvement work which will be carried out to develop the second version of the HAMP for summer 2015, as well as indicating the frequency of updating for all sections of the document.

2. Levels of Service

2.1 Levels of service describe both what the customer wants from the asset and what is necessary to ensure that a proper maintenance regime is in place. A clear understanding of customer views is therefore fundamental in defining them, as is a comprehensively planned maintenance regime. Both aspects will be influenced further by legislative requirements, the Council's objectives and policies, national best practice and more critically, funding.

2.2 Within this HAMP, the following four dimensions are used to define levels of service, where the first three dimensions reflect the requirements of the customer.

- safety
- availability
- serviceability
- condition

2.3 Safety describes the risk to the customer in using the asset and will in all cases be required to meet high standards. Road safety on the other hand depends substantially on the behaviour of road users, and in the wider context is not, therefore, covered by this dimension.

2.4 Availability is largely self-explanatory and will vary according to the asset and location. For example, a single street light not working is clearly unavailable, however, the fact that it is unavailable is only likely to cause a minor nuisance to road users and residents. Conversely, a shut bridge on an 'A' road closed due to structural weakness will result in major issues on the network.

2.5 The serviceability dimension describes whether the asset actually delivers what service users and the Council require of it. For example, a road surface may be perfectly safe, available for use at all times and in good condition, but the fact that it is of concrete construction could be causing significant noise nuisance to people living nearby. The serviceability dimension also has the potential to bring into play much wider attributes of the asset, for example is the road congested, is the footway surface appropriate for the local environment, is the street lighting provided to adequate standards for local needs?

2.6 The condition dimension is judged relative to minimising the long-term cost of maintaining the asset and not relative to customer requirements. For example, a rusting steel lamp column may be safe, working and acceptable in appearance to customers. The fact that it is in rusty condition is, in these circumstances, only of concern if the optimum maintenance regime to minimise whole-life costs would have had it repainted before rust appeared. Such an optimum maintenance regime will, for many assets, include periodic preventative maintenance before more extensive maintenance, or full replacement, is undertaken. A maintenance regime which involves little investment over many years followed by major renewals may be more expensive overall than a 'little and often' regime which applies regular preventative maintenance; hence the emphasis given to minimising whole-life cost.

2.7 Environmental sustainability is growing rapidly in importance and the Council already takes many steps to minimise the environmental impact caused by its management of highway assets. It is likely that this will be added as a specific additional dimension of levels of service in future editions of the HAMP.

2.8 All aspects of level of service include elements of risk. As examples, the collapse of a bridge immediately makes the service unavailable; inadequate monitoring of skid resistance may increase the risk of road accidents. The analysis of levels of service needs to take such risks into consideration.

3. Asset Management Finance

3.1 Funds for maintaining our assets are allocated from both the Local Transport Plan capital allocation and from the Council's revenue budget. The Council also receives external funding through infrastructure development, sponsorship and fees and charges. This section details the use of these funding sources.

Local Transport Plan Capital Funding

3.2 Local Transport Plan capital funding is used for:

- carriageway renewal and preventative maintenance schemes:
  - reconstruction
  - resurfacing
  - surface dressing
  - machine patching

- footway renewal schemes
  - reconstruction
  - resurfacing
  - block/slab replacement.

- bridge renewal and upgrading works
  - concrete repairs
  - waterproofing
  - deck replacement

- lighting column replacement.

3.3 West Berkshire Council manages its capital finance using an approach, called the Prudential Framework, which places emphasis on affordability. The Council decides how much it can afford to borrow, with the costs of this borrowing being met by its revenue provision.

3.4 Through its Prudential Framework the Council has decided that it can support from its own resources an Annual Capital Programme of £7.1 million per annum on average for the 5 year period 2012/13 to 2016/17, which will be supplemented by external funding. As a result the Council's funded programme is currently expected to be in the region of £35.5 million over the same period.

3.5 The Government Spending Review of October 2010 included notional totals for future transport grants. Over the next four years of this Plan, as Table 1 overleaf illustrates, the Government has allocated the following levels of block capital funding for transport in West Berkshire, as set out in their settlement letter of 13 December 2010. This funding allocation indicates the anticipated levels of spend that the Government would expect to see spent on transport. It is provided as capital grant (not supported borrowing), but is not ring-fenced.

Table 1

	2012/13 £000	2013/14* £000	2014/15* £000
Highways Capital Maintenance	3,420	3,319	3,126
Integrated Transport	784	784	1,103
Total	**4,204**	**4,103**	**4,229**

**Funding allocations for 2013/14 and 2014/15 are indicative and are subject to change, for instance as a result of changes to the formulae or future data changes.*

3.6 It should be noted that the fall in indicative Maintenance allocations is in line with national projections. Therefore the Council, along with other local highway authorities, is expected to seek significant efficiency savings by using its purchasing power to drive down the costs of maintenance.

3.7 Historically, West Berkshire Council has spent up to and beyond the levels expected by Government. This has enabled the Council to deliver over and above the minimum scenario, resulting in consistent year on year improvement.

3.8 This good progress has been regularly commended in settlement letters from the DfT. In the LTP2 mid-term review progress letter, the DfT recognised the Council had demonstrated good progress through reducing the length of principal and non-principal roads requiring maintenance.

3.9 The Final and Indicative Funding Allocations have therefore been used to guide the Council in setting its Transport Budget for the next four years, as detailed in Table 2 below. This includes S106 and other known external funding.

Table 2

	2012/13 £000	2013/14 £000	2014/15 £000
Total	**6,366**	**6,991**	**7,335**

3.10 West Berkshire Council's investment programme is very much in line with that indicated by the DfT. However, the Council is planning to continue to spend over and above the indicative amount where funding permits. The difference between what has been set aside in the Capital Programme and the amount allocated by Government year on year is detailed in Table 3 below.

Table 3

	2012/13 £000	2013/14 £000	2014/15 £000
Difference	**2,162**	**2,888**	**3,106**

Revenue Funding

3.11 The Medium Term Financial Strategy (MTFS) sets the Council's approach to managing its revenue budget. The MTFS is set in the context of the Government's Spending Review and its resulting implication for local government. The Comprehensive Spending Review (CSR) announced in late 2010 set out the funding envelope for local Government over the period 2011-15. A further, more detailed review was completed in December 2010 and this set out the amount of funding that individual Councils would receive in the period 2011-13.

3.12 The aim of the MTFS is to:

- summarise the financial context within which the Council is working;
- provide a stable financial framework for the Council over the period of the Plan, taking into account the need to address new statutory requirements, known financial pressures, and new Government initiatives;
- within that framework, ensure through a variety of means, that financial resources are made available to deliver the Council's Strategic Priorities as set out in the Council's Strategy 2012 – 16.

3.13 Unlike in previous years, the short to medium term financing of Local Government is undergoing a significant amount of reform. The Local Government Resource Review in 2011 has confirmed the Government's intention to allow Local Government to retain certain levels of business rates. For West Berkshire Council this is likely to mean that the Council pays over a significant tariff to central Government, as the Council currently collects levels of business rates far in excess of the amount it receives back from Central Government. This has meant that predicting the medium term finances to the Council is more difficult until the scheme for financing using business rates is finalised. However, based on the proposed revenue savings for 2012/13 and the current forecasts, the anticipated revenue spend for highway maintenance for the next 3 years is detailed in Table 4 below.

Table 4

	2012/13 £000	2013/14 £000	2014/15 £000
Total	**tbc**	**tbc**	**tbc**

Funding and Delivery Programme

3.14 The Council also faces a number of pressures on its budget. Significant investment has been made in Adult Social Care over the previous five years, and to a lesser extent waste management. Going forward, this poses a significant challenge to West Berkshire Council in how it invests revenue resources into improving transportation. West Berkshire Council's programmed revenue expenditure for 2011-12 is currently budgeted at over £7m. This has significantly reduced compared to the previous year due to the capitalisation of £2m of highways expenditure in 2010-11

3.15 The allocation of budgets to different activities has been carried out on the basis of supporting the overall lifecycle planning described in the lifecycle plans and the need to undertake reactive maintenance repairs. The 2012/13 figures in Tables 5 and 6 below illustrate the way in which the budget is typically allocated:

Table 5 Capital Funding 2012/13

	£000
LTP Extended Maintenance	tbc
Surface Treatment	tbc
Machine Patching	tbc
Footways and Verges	tbc

Table 6 Revenue Funding 2012/13

	£'s
A339 De-trunking	tbc
Drainage	tbc
Footways and Verges	tbc
Rights of Way	tbc
Siding	tbc
Bridge Maintenance	tbc
Parish Watch	tbc
Safety Fences	tbc
Gulley Emptying & Jetting	tbc
Grip Cutting	tbc
Signs and Road Markings	tbc
Emergencies	tbc
Emergency Sweeping	tbc
Grass Cutting	tbc
Trees	tbc
Street Lighting Maintenance	tbc
TOTAL	tbc

External Funding and Other Savings

3.16 The pressure on council budgets underlines the importance of exploring external funding and savings. Examples include:

- developer 'commuted sum' contributions to cover the extra future maintenance costs of unusual surfacing, lighting or other features of new development which will be adopted by the Council.

- Engagement with the Council's Term Maintenance Contractor to minimise whole life costs through early and effective management of risk, methods, materials and programme (early contractor involvement).

- The use of alternative cost effective materials, for example, upvc drainage systems and recycled materials.

The Role of the HAMP in Determining Future Funding Levels

3.17 Future total funding seems likely still to be heavily constrained, both for the highways service and for the Council as a whole. Within that constraint, the HAMP has two specific functions:

- to provide evidence based information to help inform decisions on the allocation of funds to the Highway and Transport Service.

- to provide evidence based information to help allocate budgets which align with the set levels of service.

4. Asset Valuation

4.1 Valuing roads, bridges and other transport assets is to some extent a theoretical exercise, given the nature of the assets, but it is an essential part of the management process and will be required under 'whole -life government accounting' rules. In terms of the HAMP, the asset valuation process can be used to measure the impact of alternative maintenance scenarios in terms of depreciated value and asset condition, allowing better informed decisions to be made on funding and allocations.

4.2 Calculating asset values can be a complex exercise. An initial 'gross replacement cost' approach has been calculated using the model detailed in the Code of Practice on Transport and Infrastructure Assets, where the gross replacement cost is the cost to provide a modern equivalent of the asset if it did not exist. The valuation framework will continue to be developed in line with national guidance and good practice.

4.3 The amount of service life of an asset that has been consumed is the depreciation and can be evaluated financially. This figure will be the expenditure required to return an asset to "as new" condition, if it can be repaired. Alternatively, it is the sum that should be set aside for the replacement of any asset that cannot be repaired. The current or net value of an asset is its gross replacement cost minus the financial depreciation.

4.4 Further details of the analytical method used are given in Appendix F. The current value of the highway asset is summarised in Table 7 below.

Table 7

	Carriageways £000	**Footways £000**	**Bridges £000**	**Street Lighting £000**
Gross Replacement Cost	1,152,082	115,114	75,351	15,936
Depreciation	4,796	Not Available	Not Required	399
Net Value	**1,147,286**	-	-	**15,537**

5. Lifecycle Plans

5.1 The lifecycle plans for the four main asset groups are set out in Appendices A to D. Each details initially:

- the levels of service we wish the asset to meet
- the evidence on the extent of the asset and its characteristics
- the evidence on its present condition, and how that is measured
- the present valuation of the asset
- an assessment of future changes in demand for the asset
- the options available for treatment of the asset

5.2 This provides the basis for the analysis which follows in the remaining sections of each appendix:

- analysis of the best management strategy for minimising the whole-life cost of the asset whilst meeting service level aspirations

- identifying options within this strategy which deliver different levels of service, with different targets, depending on budget availability

- setting out the action plan necessary to ensure the effective delivery of the lifecycle plan

- identifying the specific risks which may affect the successful implementation of the lifecycle plan

5.3 As noted earlier, each lifecycle plan cannot be treated in isolation as the level of resource provided for one asset will affect the funding available for others. Section 6 below provides the balance between the lifecycle plans and sets out what is believed to be the optimum balance of spending between different asset categories within the overall funding currently available. It also summarises the separate action plans for each of the lifecycle plans.

6. Asset Management Strategy

Introduction

6.1 The asset management strategy draws on the analysis set out in the lifecycle plans to show:

- the way we will budget expenditure to provide the best overall maintenance of all assets, judged against desirable levels of service,

and

- the techniques we use to ensure that we manage the different assets in the most cost-effective way, and how we will improve those.

6.2 In this first edition of the HAMP the strategy covers two main areas:

- The optimum allocation of the capital budgets available between the asset categories. This is intended to provide the background for decisions on future spending.

- The main areas for further investigation and analysis in taking forward our techniques for managing the individual assets.

Strategy to Optimise Performance to meet Levels of Service Aspirations

6.3 The analyses in the four lifecycle plans show how far we are able at present to meet our aspirations for levels of service. Taking the four dimensions in turn:

- **safety** – our performance information is not yet comprehensive but we believe that we are close to achieving the desired standards.

- **availability** - with our Network Management Plan now in place to meet our responsibilities under the Traffic Management Act 2004 and building on previous good practice, there is reasonable confidence that we are close to meeting customer aspirations for availability.

- **serviceability** – we believe that we are meeting most customer aspirations for serviceability but this will continue to be developed in future versions of the HAMP as more specific customer research is collected and analysed.

- **condition** - we were notified by the Department of Transport in December 2010 of our allocations for 2011/12 and 2012/13, plus indicative allocations for 2013/14 and 2014/15, which show a gradual reduction in highways maintenance grant over the next few years. This will place the onus on us to achieve greater efficiencies in delivering highway maintenance, whilst maintaining the progress already made in improving the condition of our network. We will develop a new condition target to help monitor the highway maintenance policy in our new Local Transport Plan.

Strategy to Improve Asset Management Performance.

6.4 Our techniques for managing assets are long-established and adjusted regularly on the basis of developing national best practice which we pick up through membership of organisations such as CIPFA and the South East Counties Service Improvements Group (SECSIG). We believe this provides substantial assurance that our techniques are close to best practice and we have therefore not concentrated on this aspect of our work in this first edition HAMP.

6.5 Attention will be focussed more on technical aspects of our work in the second and future editions. The overall work we need to do is summarised in section 9 and, of that, those most important for the technical assessment work are:

- improving asset data
- further investigation of service lives for different treatments
- further research into treatment options for paved and flagged footways
- further investigation of the case for painting steel lighting columns

6.6 In addition, future versions of the HAMP need to include similar analysis for the other asset groups not included in this first version.

7. Risk Management

7.1 The Council has a corporate risk policy designed to manage risks in a structured manner. All change processes are risk assessed, and action plans prepared for risks of relatively high likelihood and high impact. Similar analysis is carried out for risks associated with continuing service delivery. The main processes for transport/highway asset management are therefore already covered by risk analyses, documented in the Highways & Transport service plan.

7.2 User risks associated with levels of service are discussed within the lifecycle plans and the risks associated with the improvement action plan are detailed in Section 9. With the latter, the key risk is that the Council will not be able to fund/resource and thus implement the recommendations within the plan. This risk will be mitigated by ensuring that the recommendations are appropriately prioritised within the action plan.

8. Performance Monitoring

8.1 The Council has in place a comprehensive performance monitoring system that provides high level performance related information in order to monitor the objectives/ commitments detailed within the Directorate and Service plans and the national single list data set on which the Council is measured. This framework operates at all levels within the organisation.

8.2 The Local Transport Plan sets out specific indicators relating to transport and highway services and includes indicators associated with the condition of the highway/transport asset. These are also detailed in the lifecycle plans and cover not only carriageways and footways but also bridge condition and street lighting.

8.3 The performance of the Council's Term Maintenance Contractor, Volker Highways, is measured and reported monthly and quarterly and reviewed annually to ensure that they align with the Council's objectives. A partnership arrangement is in place to help deliver 'value for money' high quality services and continuous service improvement. A Strategic Management board comprising senior representatives from both organisations ensures the cost-effectiveness and delivery performance of the partnership.

8.4 All major LTP projects are managed using 'PRINCE2' project management principles and are assessed using a formal 'Scheme Selection Matrix' process to ensure that these projects meet the Council's objectives. These arrangements provide a formal framework for performance management of the HAMP and will ensure that the full potential of this document is exploited.

9. Development and Updating the HAMP

Development

9.1 There are a number of other areas of work to complete before the HAMP can be considered a fully comprehensive document and these will continue to be developed over the course of this HAMP. Beyond this there will be further developments in analytical techniques in future years, as well as inevitable changes in the availability of funding. These will require further editions of the HAMP to be produced in later years, though with the core content perhaps little changed after 2015.

9.2 The responsibility for co-ordinating this work will initially lie with the Council's Highways Manager, however, as the Plan is developed and further services/assets are added, a formal Asset Management Board of service representatives will be established to coordinate the Plan. The elements of this can be divided into those required for project planning, outputs going into the second HAMP, and outputs going into the third and later HAMPs. The project planning elements are as follows:

Work Area	Time Scale
Approval of HAMP	March 2012
Develop a project plan for gathering relevant missing assets	March 2012
Develop strategy for maintaining and managing asset data.	March 2012

9.3 The outputs will be as follows:

Work Area	For this HAMP	For later HAMPs
Complete asset inventory collection and lifecycle planning for remaining assets.		Y
Carry out equality impact assessment for HAMP	Y	
Refine approach to asset valuation.	Y	Y
More quantified analysis of customer views on the serviceability dimension for each asset category, based on specific customer surveys.		Y
More detailed examination of asset management strategies, including: • use of condition data • use of alternative treatments/treatment options • use of alternative materials and in-house recycling	Y	Y
Include environmental impact as a fifth dimension to levels of service		Y

Updating

9.4 The arrangements for updating the HAMP will be decided by the Asset Management Board.

10. Glossary of Terms and Abbreviations

BVPI	Best Value Performance Indicator
CIPFA	The Chartered Institute of Public Finance & Accountancy
CSS	County Surveyors Society
CVI	Coarse Visual Inspection
DfT	Department for Transport
DVI	Detailed Visual Inspection
FNS	Footway Network Survey
GIS	Geographical Information System
LTP	Local Transport Plan
NMP	Network Management Plan
NI	National Indicator
PI	Performance Indicators
SCANNER	Road condition measurement survey
SCRIM	Skid Resistance measurement survey
HAMP	Highways Management Plan
TAMP	Transport Asset Management Plan
UKPMS	United Kingdom Pavement Management System
WDM	Electronic Highways Management System
WGA	Whole Government Accounts

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Appendix A

Carriageway Lifecycle Plan

Introduction

1. The background to lifecycle plans and the format of each are described in Section 5 of the HAMP. This appendix provides the lifecycle plan for carriageways.

2. For management purposes, the Council's highway network has been split into discrete maintenance categories based on the recommendations given within the national Code of Practice for "Well Maintained Highways". These categories reflect the type and use of different carriageways and are summarised in Table 1 below.

Table 1

Cat.	Hierarchy	Type of Road	Detailed Description
1	Motorway*	Limited access motorway regulations apply.	Routes for fast moving long distance traffic. Fully grade separated and restrictions on use
2	Strategic* Routes	Trunk and some Principal A roads between Primary Destinations.	Routes for fast moving long distance traffic with little frontage access or pedestrian traffic. Speed limits are usually in excess of 40mph and there are few junctions. Pedestrian crossings are either segregated or controlled and parked vehicles are generally prohibited.
3a	Main Distributor	Non Principal A Roads.	Routes between strategic routes and linking urban centres to the strategic network.
3b	Secondary Distributor	Classified Roads (B and C Class) and Unclassified urban bus routes.	In rural areas, these roads link larger villages to strategic/main distributor network. In urban areas these roads usually have a 30 mph speed limit and high levels of pedestrian usage.
4a	Link Roads	Unclassified Roads linking into the main/secondary distributor network with greater local significance in rural areas.	In rural areas provide inter-village links and connect to distributor network. In urban areas residential or industrial interconnecting roads.
4b	Local Access Roads	Unclassified urban cul-de-sacs and rural, lightly trafficked roads serving small settlements and single lane roads.	In rural areas these roads serve smaller villages and provide access to individual properties and land. In urban areas they are predominately residential.

** Motorways (Category 1) and Trunk Roads (Category 2) are the responsibility of the Highways Agency.*

Levels of Service

3. Since 2002, the Highways and Transport service has been carrying out a comprehensive programme of annual testing to determine the condition of the highway network and establish the Government's defined datasets for the condition of the Principal Classified, Non-Principal Classified and Unclassified Road networks and skid resistance. For 2012/13, the national datasets are defined as follows:

    - 130 – 01 Condition of Principal Roads
    - 130 – 02 Condition of Non Principal Roads
    - 130 – 03 SCRIM (Sideway-force Coefficient Routine Investigation Machine) – classified network
    - 130 – 04 Carriageway work completed.

4. The desirable levels of service for this asset category are set out in Table 2 below. By adopting a budget optimisation and depreciation modelling approach, using the historical condition data/deterioration rates, the Council has been able to set condition based service levels for different budget scenarios.

Table 2

Attribute	Desired Standard	Performance Measure
Safety	Maintain the following level of skid resistance*: 130 – 03 to remain at 90% +/- 3%	SCRIM (Sideway-force Coefficient Routine .Investigation Machine) survey results.
Availability	All roads available for use at all times excluding periods of essential road works and street works.	Journey times. Complaints. ELM Reports.
Serviceability	Appropriate standard of ride, signing and lining.	SCANNER survey. Complaints. NHT Survey. Council surveys. ELM Reports.
Condition	Maintain the following levels of condition**: 130 - 01 (formerly NI168): 6% +/- 1% 130 - 02 (formerly NI169): 9% +/- 1% LI224b (formerly BV224b): 13% +/- 2%	Single list national dataset*** Local Indicators (LI's).

* *The percentage above the required investigatory level.*

** *The percentages represent the length of network that is in need of urgent maintenance (Condition Red).*

*** *Whilst targeting red SCANNER sites should improve the national dataset, does not necessarily promote good asset management. To maintain the asset, it is essential to target the high ambers and prevent these sites from deteriorating into the red. In providing a % range for the length requiring urgent maintenance, there should be sufficient flexibility to achieve both outcomes.*

**** *ELM – West Berkshire Council's Enquiry Logging Manager system for recording enquiries and service requests*.

5. Failure to respond adequately to any of these four attributes of level of service could produce risk to the authority. Table 3 below, which details the main risks, underlines the importance of responding properly to each.

Table 3

Risk Type	Description Example
Physical	Accidents caused by asset defects.
Corporate	Legal proceedings for failure in duty of care.
Financial	Reduction in the value of the asset because of poor maintenance practice, reduced budgets and increased compensation payments following legal action.
Public Relations	Poor road condition reflects on the overall image of the Council.
Environmental	The use of premium aggregates, natural materials/resources, inappropriate materials/specifications, short lived resurfacing/overlay materials and high consumption of energy per kilometre of treated network.
Network	Disruption to road users as a result of poor coordination and unplanned maintenance following poor maintenance practice and/or reduced budget.

Asset Base and Characteristics

6. Using the national standard of road classification and maintenance category, the Council's highway network may be summarised as follows:

Table 4 - Road Class

	A Roads Lane1 kms	B Roads Lane1 kms	C Roads Lane1 kms	U Roads Lane1 kms	Total Lane 1 kms
Urban	46.7	22.3	112.5	559.5	**741.0**
Rural	158.9	125.6	731.0	740.7	**1756.2**
Total	**205.6**	**147.9**	**843.5**	**1300.2**	**2497.2**

Table 5 - Maintenance Category

Category	2	3a	3b	4a	4b	Total Lane 1 kms
Lane1 kms	104.2	101.4	1075.6	378	838	**2497.2**

Asset Condition and Assessment

7. The condition of the road network is assessed annually by SCANNER surveys. Although no longer a national indicator, 100% of the unclassified network is assessed annually to establish a local indicator (LI244b). Skid resistance is measured annually on the A, B and C roads using SCRIM. Digital video imagery is captured as part of the SCANNER surveys and is used to check condition, accessibility, serviceability and for asset inventory collection. The annual condition survey regime for West Berkshire is summarised in Table 6 below.

Table 6

	A Roads	B Roads	C Roads	U Roads
SCANNER	50% in both directions (national) Data set:130-01	100% in one direction (national) Data set:130-02	50% in one direction (national) Data set: 130-02	100% in one direction (local) LI224b
SCRIM	100% in both directions	100% in both directions	100% in one direction	Not surveyed
Digital Video Imagery	As part of SCANNER survey	As part of SCANNER survey	As part of SCANNER survey	As part of the SCANNER survey

8. In addition to condition surveys, the Council also carries out routine highway safety inspections where the frequency of inspection is based on the type of road and the amount and type of traffic using it. Adopting the guidelines given within the national Code of Practice for Maintenance Management "Well Maintained Highways" (July 2005), the standards for the frequency of safety inspections are summarised in Table 7 below.

Table 7

WBC Maintenance Group	Code of Practice Category and Description	Road Class	Frequency	Maximum Interval Between Inspections
Group 1	2, 3a and 3b	A, B and C roads. Urban bus routes on Unclassified roads	1 month (Driven)	6 weeks
Group 2	4a	U roads	3 months (Urban – Walked) (Rural – Driven)	16 weeks
Group 3	4b	U roads	12 months (Urban – Walked) (Rural – Driven)	56 weeks

9. There are national datasets for the classified road network. 130-01 and 130-02 are a direct application of the Road Condition Index (RCI) from the current UKPMS default rule set. For unclassified roads there is no longer a national indicator (previously BV224b), however the Council continues to provide a local indicator (LI224b) for these roads using the RCI methodology. A summary of road condition performance for the period 2005 to 2010 is shown in Table 8 below.

Table 8

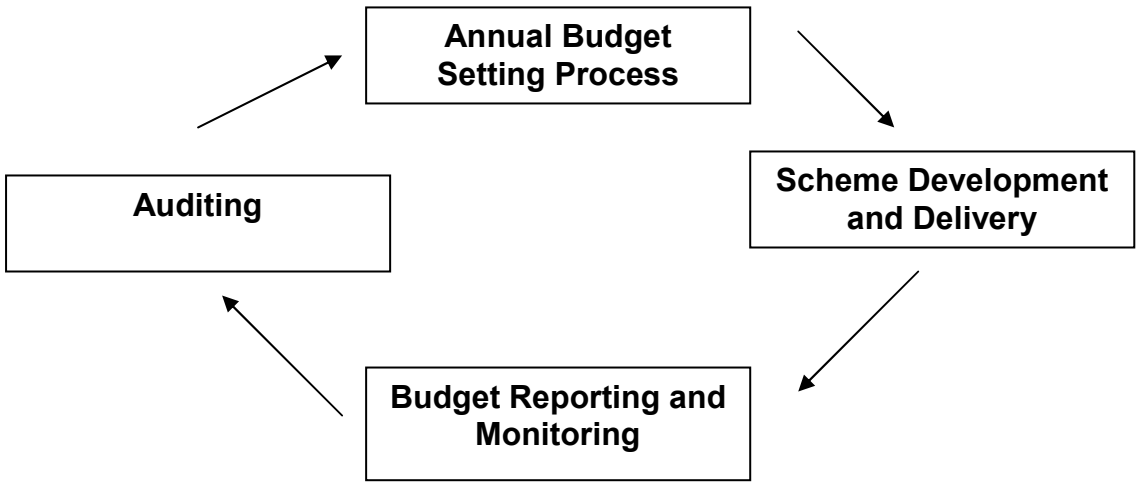
Indicator/Year	2005/06	2006/07	2007/08	2008/09	2009/10	2010/11
A Roads	BV 223	BV 223	NI 168	NI 168	NI 168	NI 168
	5%	7%	5%	6%	5%	5%
B & C Roads	BV224a	BV224a	NI 169	NI 169	NI 169	NI 169
	11%	9%	7%	9%	9%	9%
U Roads	BV224b	BV224b	LI224b	LI224b	LI224b	LI224b
	26%	20%	14%	21% *	12% *	11% *

** Based on 100% network coverage.*

Financial Management, Investment and Programming.

10. The Council's constitution provides a flexible mechanism for ensuring effective and fully accountable financial management of the Council's transport budgets, both capital and revenue.

    The framework within which operational budgets are managed is as follows:



11. Day to day budget control is the responsibility of the budget manager, a senior officer reporting directly to the Head of Service. The Head of Service has overall responsibility for the department's financial situation, working very closely with the Directorate Group Accountant, who is a key member of the Directorate Management Team. Service budgets are monitored at Directorate Management Team level and a formal budget report presented monthly to Corporate Board.

12. To ensure compliance with the constitution, regular independent audits are undertaken particularly in areas of high cash turnover such as car parks and concessionary fares.

13. The process for managing capital expenditure is very similar but the Council's Capital Strategy Group plays a key role in monitoring scheme progress and cost. Whilst an overview is taken by the Directorate Management Team, the details are closely monitored by Capital Strategy Group using detailed monthly reports. This group is a good example of cross service corporate working as it comprises representatives of all Council Services with a capital expenditure programme. A holistic view of the Council's overall position regarding capital can therefore be taken.

14. To ensure that value for money is being achieved across the entire range of transport related budgets, the Council undertook a complete Zero Based Budget Review in October and November 2005. A series of subsequent value for money audits as well as reviews by the Council's Transformation and Efficiency Board (TEB) will continue to ensure that the Council's resources are used to the best effect by directing funds to the most needed area.

Budget Optimisation and Depreciation Modelling

15. To carry out budget optimisation and depreciation modelling on the classified network, the Council applies a financial model that is able to predict the level of investment required to deliver any predefined level of service as measured by road condition surveys. The model is also used to assess the effect of treatments and budget strategies on the 130-01 and 130-02 data sets and the Depreciated Asset Value over selected time periods.

16. For the unclassified road network, a separate model was used to predict budgets required to achieve selected LV224b values using the results from past CVI surveys. However, from 2011, the mini-SCANNER was introduced to assess the unclassified network and this data has now been combined as part of the classified road network model.

17. The model is populated using the latest SCANNER and SCRIM survey data from the Principal, Non Principal Classified and the Unclassified road networks and a treatment decision matrix that links the individual condition parameters (rutting, longitudinal profile, cracking and texture etc) to specific maintenance treatments (reconstruction, resurfacing, surface dressing etc) is used to formalise treatments.

18. The model uses a deterioration rate to predict the future condition. The SCANNER road condition indicator (RCI) has been linked to a residual life which enables the life of the road to be determined from the condition data.

19. Using the financial model a number of scenarios can be run to enable West Berkshire Council to evaluate the effect of different budget allocations on the network condition and the resulting effect on the value of the asset.

20. The Council has developed a financial model that uses the latest road condition data and a deterioration model to help predict budget requirements to achieve target condition service levels over different timescales and future condition of the road network should investment levels change.

21. The financial model has also been used to target budget allocations to specific road hierarchies. Based on current model simulations using condition data and deterioration parameters, Table 9 below shows the average cost to achieve a "steady state" scenario, namely, the budget amounts required to deliver the set service levels over the next 25 years:

Table 9

Road Class	Average Annual Cost (25 Years)	Total Network Cost	% of the Total Cost
A Classified Rural	£389,759	£9,743,982	11%
A Classified Urban	£141,918	£3,547,950	4%
B Classified Rural	£227,180	£5,679,505	6%
B Classified Urban	£54,423	£1,360,571	1%
C Classified Rural	£1,060,637	£26,515,933	29%
C Classified Urban	£229,979	£5,749,471	6%
U Unclassified Urban and Rural	£1,546,038	£38,650,961	43%
TOTAL	**£3,649,934**	**£91,248,373**	**100%**

The above figures are based on the condition data and unit costs up to and including 2010

22. The above table has also been used to establish a budget allocation between the classified (60% of the budget) and non-classified networks (40% of the budget), enabling a more targeted maintenance regime based on existing network condition.

Condition Threshold Values and Availability of Condition Data

23. Condition threshold values represent the condition beyond which the road would be classified as in need of investigation and possible treatment. The condition is defined from SCANNER surveys, which now provide very high levels of network coverage.

24. Threshold levels from SCANNER surveys are defined in terms of a Road Condition Indicator (RCI), which combines defects together into a composite measure for every 10 metre subsection of road, and can range from 0 to 315 for the classified network and from 0 to 246 for the unclassified network. An RCI ≥ 100 indicates the section is in 'need of maintenance' and is classified as red for national indicator reporting. Amber is used to describe roads with an RCI > 40 and < 100.

25. However, in order to manage a network not only are the lengths of road with an RCI ≥ 100 considered for treatment but some of the roads with RCI values of between 80 and 100 are also considered because these are approaching a critical condition and early treatment is more cost effective as it is usually less extensive at this stage in the life cycle. The model therefore, takes into account treatments that have been applied to the road in a "high" amber and red condition.

26. Tables 10, 11, 12 and 13 below highlight the parameters, thresholds, weightings and the subsequent "points" score used to calculate the RCI for A, B, C and U roads using condition data collected from SCANNER surveys. Each 10-metre section of surveyed road is allocated a condition ranking shown as green, amber, high amber or red depending on the value of the "points" scored. The total length of the red sections is reported as a percentage of the total network coverage to establish the national datasets 130-01 and 130-02 and the local indicator LI224b.

Table 10

Condition of Principal Roads (A Roads: Data set 130 - 01)					
Parameter (defect)	**Units**	**Lower Threshold**	**Upper Threshold**	**Weighting (Importance x Reliability)**	**Maximum Score (Points)**
Rut depth (larger of LLRT or LRRT)	mm	10	20	1.0	100
3m profile Variance (LV3)	mm2	4	10	0.8	80*
10m profile Variance (LV10)	mm2	21	56	0.6	60*
Whole c/w cracking (LTRC)	% area	0.15	2.0	0.6	60
Texture depth (Urban roads) (LLTX)	mm	0.6	0.3	0.5	50
Texture depth (Rural roads) (LLTX)	mm	0.7	0.4	0.75	75
Maximum Scores (RCI)			**Urban Roads**		**290**
			Rural Roads		**315**

** Only the higher score from the two measures of longitudinal profile (3m and 10m profile variance) is counted in the overall score*

Glossary of Terms

LLRT Left wheel path rut depth
LRRT Right wheel path rut depth
LV3 3m moving average longitudinal profile variance
LV10 10m moving average longitudinal profile variance
LTRC Whole carriageway cracking
LLTX Left wheel path average texture depth

Table 11

Condition of Classified Roads (B Roads: Data set 130 - 02)					
Parameter (defect)	**Units**	**Lower Threshold**	**Upper Threshold**	**Weighting (Importance x Reliability)**	**Maximum Score (Points)**
Rut depth (larger of LLRT or LRRT)	mm	10	20	1.0	100
3m profile Variance (LV3)	mm2	5	13	0.8	80*
10m profile Variance (LV10)	mm2	27	71	0.6	60*
Whole c/w cracking (LTRC)	% area	0.15	2.0	0.6	60
Texture depth (Urban roads) (LLTX)	mm	0.6	0.3	0.5	50
Texture depth (Rural roads) (LLTX)	mm	0.6	0.3	0.75	75
Maximum Scores (RCI)			**Urban Roads**		**290**
			Rural Roads		**315**

** Only the higher score from the two measures of longitudinal profile (3m and 10m profile variance) is counted in the overall score*

Table 12

Condition of Classified Roads (C Roads: Data set 130 - 02)					
Parameter (defect)	**Units**	**Lower Threshold**	**Upper Threshold**	**Weighting (Importance x Reliability)**	**Maximum Score (Points)**
Rut depth (larger of LLRT or LRRT)	mm	10	20	1.0	100
3m profile Variance (LV3)	mm2	7	17	0.8	80*
10m profile Variance (LV10)	mm2	35	93	0.6	60*
Whole c/w cracking (LTRC)	% area	0.15	2.0	0.6	60
Texture depth (Urban roads) (LLTX)	mm	0.6	0.3	0.3	30
Texture depth (Rural roads) (LLTX)	mm	0.6	0.3	0.5	50
Maximum Scores (RCI)			**Urban Roads**		**270**
			Rural Roads		**290**

** Only the higher score from the two measures of longitudinal profile (3m and 10m profile variance) is counted in the overall score*

Table 13

Condition of Classified Roads (U Roads: Local Indicator LI224b)					
Parameter (defect)	**Units**	**Lower Threshold**	**Upper Threshold**	**Weighting (Importance x Reliability)**	**Maximum Score (Points)**
Rut depth (larger of LLRT or LRRT)	mm	10	20	1.0	100
3m profile Variance (LV3)	mm2	10	20	0.6	60*
10m profile Variance (LV10)	mm2	50	95	0.5	50*
Whole c/w cracking (LTRC)	% area	0.15	2.0	0.36	36
Texture depth (Urban roads) (LLTX)	mm	0.6	0.3	0.3	30
Texture depth (Rural roads) (LLTX)	mm	0.6	0.3	0.5	50
Maximum Scores (RCI)			**Urban Roads**		**226**
			Rural Roads		**246**

** Only the higher score from the two measures of longitudinal profile (3m and 10m profile variance) is counted in the overall score*

27. The total number of points attributed to each 10 metre section of road is calculated based on the above tables. The Road Condition Indicator (RCI) is assigned a "condition" colour based on the RCI value as detailed in Table 14 below.

Table 14

RCI Range	Condition Colour
0 to 39	Green
40 to 79	Amber
80 to 99 (locally created range)	High Amber
greater than or equal to 100	Red

28. The nationally recognised definitions for the colour groupings shown above are as follows:

- GREEN – Lengths where the carriageway is generally in a good state of repair.
- AMBER – Lengths where some deterioration is apparent which should be investigated to determine the optimum time for planned maintenance treatment.

- HIGH AMBER – (Locally created range) Lengths where the carriageway is in need of planned maintenance as soon as possible to justify carrying out a lesser maintenance treatment rather than a more extensive treatment later, in order to minimise whole life costs.

- RED – Lengths in poor overall condition which are likely to require planned maintenance soon (i.e. within a year or so) on a "worst first" basis. (Although there may be justification for postponing major repairs, and only carrying out minor repairs to keep the road safe and serviceable, in order to minimise whole life costs i.e. "economic prioritisation").

Maintenance Treatments

29. Road surfaces can be renewed, repaired, protected or retextured.

- Renewal involves replacing some or all of the structural layers and in some cases the sub-base layer in order to restore strength and life expectancy.

- Repairs include patching, permanent pothole repairs, crack sealing and resetting of ironwork.

- Protection treatments restore the skid resistance and seal the surface of the road which prevents moisture and water ingress getting into the surface and oxidation of the binder. Treatments include surface dressing, micro-asphalts and slurry seals.

- Retexturing increases the serviceable life of the surface course by removing excess binder and "roughing up" the polished aggregate, improving both macro and micro texture to increase skidding resistance in wet conditions and reduce aqua-planing.

30. A set of maintenance treatments for various defect conditions have been established along with unit costs and typical design lives for each road class. For the classified and unclassified networks, the treatment cost/life expectancy matrix is detailed in Table 15 below.

Table 15

Treatment	Design Life (Years)	Unit Cost (£/m2)			
		A Roads	B Roads	C Roads	D & U Roads
Reconstruction (450-525mm)	50	70.00	67.00	45.00	45.00
Thick Overlay (150mm)	50	25.00	25.00	21.00	21.00
Moderate Overlay (100mm)	40	22.00	22.00	19.00	19.00
Thin Overlay (40-60mm)	20	18.00	17.00	16.00	16.00
Thin Inlay (40mm)	15	20.00	19.00	17.00	17.00
Moderate Inlay (90-110mm)	20	24.00	24.00	22.00	22.00
Surface Dress/Micro (10-25mm)	10	5.00	5.00	5.00	5.00
Retexturing	10	15.50	15.50	15.50	15.50

Linking Condition with Treatment

31. Using the latest national rules and parameters (RP 10.01), the parameters and thresholds tabulated in Section 26 are used to calculate national datasets 130-01 and 130-02. For local indicator (LI224b), local parameters have been established for the unclassified network based on engineering judgement, knowledge of network performance and the locally set thresholds as detailed in Table 13 of this appendix.

32. The four main defect mechanisms used to identify treatments are rut depth, texture depth, whole carriageway cracking and variance (ride quality). These are all recorded by the SCANNER surveys and are also used to establish the RCI and national datasets. There is a fifth defect mechanism which is the skidding resistance of the road surface as measured by SCRIM. Within the analysis, this data is combined with wet injury accidents and given the highest weighting when compared against the other four defect mechanisms.

33. When a scheme has been identified as in need of maintenance, the five defects will be analysed on an individual basis to establish the main defect mechanism causing the deterioration and the most suitable and cost effective treatment will be recommended. For example, a scheme that has a deep wheel track rutting problem would most likely require an inlay or thicker overlay of new material to remove the rutting. Surface dressing or a thin inlay/overlay would not eradicate the problem. If a scheme is deficient in texture depth and areas of cracking are evident, a surface dressing maybe the most cost effective treatment to improve texture, skidding resistance and seal the cracks to prevent water ingress.

Effectiveness of Treatment

34. By the very nature of the work, maintenance schemes will contain ‘non-defective’ sections and therefore treatments will be applied where they do not produce the full benefit of the treatment. The amount of non effective maintenance is defined as the effectiveness factor for the treatment and is a variable within the model. The distribution of RCI on the length where ‘non-effective’ maintenance is applied is based on the network distribution as a best estimate for forward projection of condition. An effectiveness factor of 50% has been assumed within the financial model.

Timing of Treatment

35. If defects are treated before they reach an RCI of 100, the cost of repair will tend to be less expensive than if they are left untreated and allowed to deteriorate into the “red”, resulting in the reduction of the whole life cost of the pavement. It is often not possible to treat all defects as they occur and, therefore, it is necessary to allow for the additional cost of repairs. Factors can be applied to increase treatment unit costs as the RCI increases beyond 100.

Scenario's

36. When the need arises, financial models can be run on all classes of road. The following scenarios were run for the period 2009/10 to establish base levels of spend in order to set realistic service levels.

- Headline backlog – the cost to remove all defects within 1 year (£31.4m)
- Current budget – condition projections for 10 years using current budgets
- Budget required meeting defined service level over 10 years
- Budget required achieving steady state over 10 years.

Scheme Identification and Prioritisation Framework

37. Schemes are identified in a number of ways and originate from a number of sources. Once a scheme has been identified as having a possible maintenance need, it is then analysed along with all the other schemes to establish a priority.

38. Initial scheme identification will normally come from one or more of the following sources:

Objective sources:

- SCANNER data – identified from sections with a high concentration of "Red" or "High Amber" RCI values.
- SCRIM data – sections of carriageway which are both deficient in skidding resistance and have had an occurrence of wet injury accidents.

Subjective sources:

:

- Visual condition reports in addition to the routine safety inspections from the Council's inspectors who are on the network daily.
- Members of the public/Council Members/Parish Councils – Concern raised regarding poor condition of surfaces.
- Safety Inspections – Analysis of surface defect repairs where clusters and/or repeat reactive maintenance is occurring.

39. For each identified scheme, the available machine based condition data is analysed to establish its priority rating using the following criteria:

- Skidding Resistance and Wet Accidents
- Road Condition
- Deterioration Trends
- Road Classification

40. Table 16 below shows how the points are allocated across each defect type. For any particular defect, the maximum possible priority rating is 620. This table is based on the format for RCI calculations shown in Tables 10, 11, 12 and 13.

Table 16

Defect Type	Units	Lower Threshold	Upper Threshold	Weighting (Importance /Reliability)	Max Score (Points)
Wet Injury Accidents in the past 3 years	Number	1	3	3.0	300
SCRIM (Worst 100m Average)	I.L minus MSSC	0	0.2	1.0	100
SCANNER RCI	Factor of RCI%	50	300	1.0	100
Trend Analysis	% change in RCI	10	17	0.8	80
Road Classification	Class	D&U	A	0.4	40
Maximum Score					**620**

Glossary of Terms:

I.L Investigatory Level
MSSC Mean Summer SCRIM Coefficient
RCI Road Condition Index

Wet Injury Accidents

41. Wet accident score is only triggered if SCRIM shows the surface to be deficient. If the skidding resistance of the road surface is above the recommended investigatory level for that particular site, then no points for wet accidents will be added. Skidding resistance is combined with wet injury accidents to assign points based on the level of deficiency and the number of accidents which have occurred in the past 3 years. Points are allocated based on a sliding scale of skid deficiency i.e. the greater the deficiency the more the points gained, up to a maximum of 100. For each wet injury accident where the road surface has been identified as deficient within a scheme, 100 points are awarded up to a maximum of 3 wet accidents. This gives a possible maximum score of 300.

SCRIM

42. A SCRIM score is calculated using the Mean Summer SCRIM Coefficient (MSSC) and the Investigatory Level (IL). For any given scheme, the worst 100 metre section is taken and a value of deficiency is calculated by subtracting the MSSC from the IL. If the result is equal to or above zero, the surface is not deficient in skid resistance and as a consequence no points are added to the overall score.
If the result is equal to or less than zero, points are added depending on the degree of deficiency.

Example:

43. A 100 metre length of A Class road has a MSSC of 0.27 and an investigatory level of 0.4, the value of deficiency would be -0.13. Applying this value to Table 17 below, the point score for the scheme would be 65.

Table 17

Deficiency	0 to -0.1	-0.11	-0.12	-0.13	-0.14	-0.15	-0.16	-0.17	-0.18	-0.19	>=0.20
Point Score	50	55	60	**65**	70	75	80	85	90	95	100

44 The above calculation is added to the scores from wet injury accidents, SCANNER, trend analysis and road classification to determine the overall score for the scheme. With this overall score, it is possible to compare schemes and set priorities in an objective manner.

SCANNER

45. A SCANNER RCI score is calculated based on the percentage of green, amber, high amber and red values there are for each individual scheme. These percentages are multiplied by the factors detailed in Table 18 to establish an overall rating where the weighting is biased towards high amber and red.

Table 18

Condition Colour	Multiplier
Green	0
Amber	1
High Amber	6
Red	5

This rating, between 50 and 300 is then converted into a points score up to a maximum score of 100.

Example

A section of urban A class road has the following condition data over a 10 metre section:

Defect Type	Units	Condition Data	RCI Score *
Rut Depth	mm	20	100
Profile variance**	mm2	10	80
Cracking	% area	0.175	30***
Texture Depth	mm	0.8	0
		Total RCI Score	**210**

* *The RCI scores have been calculated using the figures in Table 10*
** *The profile variance is the average of the 3m and 10m profile variance results*
*** *Calculated on a pro-rata basis using the figures in Table 10*

From paragraph 29, a score of 210 will place this 10 metre section into category RED as it is greater than 100. This calculation is then repeated for the whole length of the proposed scheme giving a consolidated set of results as tabled below.

Table 19

	% RCI GREEN	% RCI AMBER	% RCI HIGH AMBER	% RCI RED	
Consolidated RCI score % for scheme	14	42	18	26	
Multiplier*	0	1	6	5	
Overall Rating	0	42	108	130	**Total 280**

Using the overall rating total above and Table 20 below, the points score for the scheme is 95.

Table 20

Rating	<=50	51-75	76-100	101-125	126-150	151-175	176-200	201-225	226-250	251-275	276-300	>300
Point Score	0	50	55	60	65	70	75	80	85	90	**95**	100

Trending Analysis

46. Trending analysis is also carried out to establish how the road pavement within an identified scheme has performed over a period of time. Deterioration modelling can be unpredictable due to the high number of variables that have an effect on a road pavements residual life, for example, extreme weather, traffic levels, drainage, location etc. However, analysis of past RCI values and the changes that may have occurred over time, can give a good indication of the rapid onset of failure. It can also identify road pavements that may have reached the high end of their RCI value (high amber), and have stabilised, indicating a slowing down of deterioration. This may offer the opportunity to delay maintenance for a year or two, enabling resources to be redirected to other schemes.

47. Trend analysis is carried out on each scheme by calculating the percentage change of high amber and red RCI values over the past 2 surveys. For example, an A class road is surveyed once every two years. Being a designed pavement, expected serviceable life is 20 years, therefore the predicted rate of deterioration would be 5% per annum. Over the two year period, the predicted rate of deterioration would be 10% and this represents the lower threshold used for assigning points. For any value above this percentage (up to an assumed maximum of 17%), points are assigned linearly to a maximum value of 80 similar to using the calculation method described above for SCRIM and SCANNER.

48. The final item contributing towards the priority points total is the road classification. A small number of points are awarded based on the usage of the road and environment it is situated in. Table 21 below highlights the allocation of points.

Table 21

Road Classification	Environment	
	Urban Points	**Rural Points**
Principal Roads (A Road)	40	30
Classified Roads (B Road)	30	25
Classified Roads (C Road)	20	15
Unclassified Roads (U Road)	10	0

Scheme Prioritisation

49. By adding the point scores for each of the defect type shown above for each scheme, it is possible to compare schemes and set priorities in an objective manner. From this analysis, the Council is able to prepare it's budget based Three Year Highway Improvement Programme.

Risks

50. The risks involved in implementing the lifecycle action plan have been assessed against the Council's standard grid of likelihood versus impact and are detailed in Tables 22 and 23 below, with an outline of the mitigation to be planned. The 'red' risks from each lifecycle plan are listed in Section 7 of the main TAMP document.

Table 22

Impact				
	Extreme Impact - Rarely 4	**Extreme Impact - Moderate** 8	**Extreme Impact - Likely** 12	**Extreme Impact - Almost certain** 16
	High Impact - Rarely 3	**High Impact - Moderate** 6	**High Impact - Likely** 9	**High Impact - Almost certain** 12
	Medium Impact - Rarely 2	**Medium Impact - Moderate** 4	**Medium Impact - Likely** 6	**Medium Impact - Almost certain** 8
	Low Impact - Rarely 1	**Low Impact - Moderate** 2	**Low Impact - Likely** 3	**Low Impact - Almost certain** 4

Likelihood

Table 23

Risk	Level	Mitigation	Responsible
1. Insufficient staff resources.	6	Highlight in Service Plan Present Business Case for additional support	Head of Highways and Transport Highways Manager
2. Insufficient national guidance and support	6		
4. Materials/ labour/ plant/ staff costs	6	Ensure value for money is being achieved	Project Managers Contractors
5. Reduced capital funding	12	Prioritise key assets to minimise overall deterioration whilst maintaining safety	Council Officers
6. Reduced revenue funding	12	Prioritise key assets to minimise overall deterioration whilst maintaining safety	Council Officers

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Appendix B

Footway, Footpath, Cycleway and Cycletrack Lifecycle Plan (Metalled)

Introduction

1. The background to lifecycle plans, and the format of each, are described in Section 5 of the HAMP. This appendix provides the lifecycle plan for footways, footpaths, cycleways and cycletracks that have hard surfaces (metalled). At this stage of development of the TAMP, footways are taken to exclude non-metalled public rights of way.

2. The condition of footways will be determined using Footway Network Surveys (FNS). These surveys are nationally recognised and will provide information for asset management and valuation purposes. A full survey will be undertaken in 2012 across West Berkshire.

   Footways are defined in categories 1 to 4 as detailed in Table 1 below.

Table 1

Category	Category Name	Description
1	Primary Walking Route	Major town and village centres with +30 number shops.
2	Secondary Walking Route	Small retail shopping outlets +8 shops, large schools and industrial outlets +500 pupils or equivalent pedestrian movements.
3	Link Footways	Urban access, busy rural, all other schools.
4	Local Access Footways (metalled)	Rural footways, non-feeder footway in housing estates.

Notes:

Cycleways (those that form shared cycle/pedestrian thoroughfares on either the carriageway or footway)will be included as part of the carriageway/footway as detailed in Appendix A and B respectively.

Cycletrack (those that are remote from the carriageway/footway) will be treated as their own asset group.

Metalled Footpaths (those that are remote from the carriageway) will be treated as a Local Access Footway

Levels of Service

3. The desirable level of service for this asset category is set out in Table 2 overleaf.

Table 2

Attribute	Desired Standard		Performance Measure
Safety	Surface and profile should be safe for all users and free from obstruction.		Number of R1e and R1 defects. Accident record. Routine safety inspections.
Availability	90% of footways available for use at all times.		User Surveys. ELM Reports.
Serviceability	Category 1 and 2 footways to be clearly recognisable and signed as appropriate.		ELM Reports. Correspondence. Consultation.
Condition	Primary Walking Route	5% in need of intervention *	Number of recorded defects. Footway Network Survey (FNS) Data. Accident record. ELM Reports.
	Secondary Walking Route	9% in need of intervention *	
	Link Footways	12% in need of intervention *	
	Local Access Footways (metalled	15% in need of intervention *	

Notes.

* *The set Service levels are initial estimates that will be refined over the course of this HAMP with the collection of FNS survey data.*

4. Failure to respond adequately to any of these four dimensions of level of service will produce risk to the authority. Table 3 below details the main risks and underlines the importance of responding properly to each.

Table 3

Risk Type	Description
Physical	Accidents caused by asset defects
Business	Legal proceedings for failure in duty of care
Financial	Reduction in asset value as a result of deteriorating condition; increased in settled claims and associated legal costs
Corporate Image	Poor condition of footways reflect on the overall image of the Council.
Network	Unnecessary disruption to users as a result of inadequate and unplanned maintenance.

Asset Base and Characteristics

5. A breakdown of the footway asset is shown in Table 4 below. The areas and types of construction are currently estimates, however, these will refined following the collection of the 2012 FNS data. All asset data will be stored and managed within in the Council's WDM UKPMS system.

Table 4

Description	km	Bituminous		Modular *	
		km	m2	km	m2
Primary Walking Route	11	3	5400 **	8	14400
Secondary Walking Route	18	11	19800 **	7	12600
Link Footways	246	246	442800 **	0	0
Local Access Footways	574	574	1033200 **	0	0
Remote Metalled Cycletracks	TBC	TBC	TBC	0	0

Notes

* *Modular covers flags and block paving. This data set will be refined to include separate data sets for flags, block and concrete on completion of the 2012 FNS.*

** *The areas shown are currently estimates based on Ordinance Survey data. This data set will be refined on completion of the 2012 FNS.*

6. Following a full survey in 2012, Footway Network Surveys (FNS) will be carried out on a sample basis on each footway type in order for the purposes of asset management, programming and valuation. The sample coverage will be as detailed in Tabel 5 below.

Table 5

Description	Bituminous %	Flags %	Block %	Concrete %
Primary Walking Route	10	10	10	TBC
Secondary Walking Route	10	10	10	TBC
Link Footways	5	5	5	TBC
Local Access Footways	5	0	0	TBC
Remote Metalled Cycletracks	5	0	0	TBC

Asset Condition and Assessment

7. To assess the extent to which the desirable levels of service are met requires measurements covering the four dimensions of safety, availability, serviceability and condition. There are as yet no measures for availability and serviceability, and these will be considered further in the second edition of the HAMP.

8. The Council's standards for the frequency of footway inspections take into account national guidelines as detailed in the national Code of Practice for Maintenance Management "Well Maintained Highways" (July 2005) as detailed in Table 6 below.

Table 6

Category	Description	Frequency of Inspection
1	Primary walking route	Monthly
2	Secondary walking route	Every 3 months
3	Link footways	Every 6 months
4	All other metalled footways	Every 12 months

Asset Valuation

9. Currently the preset values as provided by HAMFIG have been used to calculate the value of the footway asset. The areas and unit rates will be developed and refined over the course of the HAMP as more detailed data is collected using FNS. Appendix E details the valuation and the initial gross replacement cost has been calculated to be £115 million.

Future Changes in Demand

10. A significant level of new development is planned in the District over the next ten years and this expansion will inevitably increase the length of the current carriageway and footway assets. This increase will, in the long term, present a maintenance expenditure pressure, however, in the short term, the rate of deterioration as a result of this increase in use is likely to be marginal.

Treatment Options and Costs

11. The limited number of types of footway construction, and ways in which they deteriorate, lead to a relatively short list of maintenance treatments. The frequency and use of these treatments are dictated by the category of the footway in question. In most instances category 1 and 2 footways require a higher level of maintenance to maintain the standards set out in the levels of service. Table 7 below summarises the list of maintenance treatments for footways.

Table 7

Treatment	Design Life (Years)	Unit Cost (£/m2)
Reactive Maintenance		
Bituminous (Patching etc)	5 -10	13.00
Blocked	10 *	25.00
Paved	10 *	20.00
Preventative Maintenance		
Bituminous (Slurry sealing)	8	1.40
Blocked	N/A	-
Paved	N/A	-
Renewal		
Bituminous(Resurfacing)	25	23.00
Blocked	30+	20.00
Paved	30+	17.00

* *Maintenance requirement in many locations is likely to be negligible, but where the underlying construction is damaged by heavy vehicle overrun, utility works etc., relaying may be required.*

Linking Condition with Treatment, Scheme Identification and Prioritisation

12. On completion of the Footway Network Surveys, the data and the defined rules and parameters will be used to form a treatment matrix that will link condition with treatment. With this matrix, it will be possible to identify and prioritise treatments to ensure that the asset is maintained at minimum cost using the appropriate treatment. At present, footway condition is assessed using safety inspection and visual inspection data.

Lifecycle Action Plan

13. Please refer to Section 9 of the Highway Asset Management Plan.

Risks

14. The risks involved in implementing the lifecycle action plan have been assessed against the Council's standard grid of likelihood versus impact and are detailed in Tables 8 and 9 below, with an outline of the mitigation to be planned. The 'red' risks from each lifecycle plan are listed in Section 7 of the main TAMP document.

Table 8

Impact				
	Extreme Impact - Rarely **4**	**Extreme Impact - Moderate** **8**	**Extreme Impact - Likely** **12**	**Extreme Impact - Almost certain** **16**
	High Impact - Rarely **3**	**High Impact - Moderate** **6**	**High Impact - Likely** **9**	**High Impact - Almost certain** **12**
	Medium Impact - Rarely **2**	**Medium Impact - Moderate** **4**	**Medium Impact - Likely** **6**	**Medium Impact - Almost certain** **8**
	Low Impact - Rarely **1**	**Low Impact - Moderate** **2**	**Low Impact - Likely** **3**	**Low Impact - Almost certain** **4**

Likelihood

Table 9

Risk		**Level**	**Mitigation**	**Responsible**
1.	Insufficient staff resources.	6	Highlight in Service Plan Present Business Case for additional support	Head of Service, Service Managers
2	Insufficient national guidance and support	6		
4.	Materials/ labour/ plant/ staff costs	6	Ensure value fro money is being achieved	Project Managers, Contractors
5.	Reduced capital funding	12	Prioritise key assets to minimise overall deterioration whilst maintaining safety	
6.	Reduced revenue funding	12	Prioritise key assets to minimise overall deterioration whilst maintaining safety	

Appendix C

Structures Lifecycle Plan

Introduction

1. The background to lifecycle plans, and the format of each, is described in Section 5 of the HAMP. This lifecycle plan covers highway structures owned and maintained by the Council.

2. The highway structures covered under this appendix are bridges, culverts, retaining walls, sign gantries and subways.

3. A significant number of bridges on the highway network are the responsibility of other owners, such as the Highways Agency and Network Rail, and so are not included in this plan.

Levels of Service

4. The desirable levels of service for this asset category are set out in Table 1 below and Table 2 overleaf.

Table 1

Attribute	Service Level	Measure
Safety	Provide adequate containment for vehicles, pedestrians and livestock.	Principal (alternates with General Inspections) Inspections – every 6 years. General and superficial inspections – every 2 years. Special/safety – as required.
Availability	Provide adequate load-carrying capacity (which may include weight limits in lieu of strengthening at appropriate locations), width and headroom.	All bridges will be capable of carrying European standard 40/44T vehicles (except where weight limits have been imposed).
Serviceability	Maintain appropriate appearance, including removal of:- • offensive graffiti • debris in watercourse beneath bridges	Complaints. NHT Survey. Council surveys. ELM Reports.
Condition	At a level consistent with achieving minimum whole-life cost, that is SCICRIT for all bridges to be above 75.	Bridge Condition Indices (SCICRIT and SSCICRIT) monitored on an annual basis. (See Table 2)

Table 2 - Condition Related Service Levels

Service Level	Condition Index	Service Level
Target 1	SCICRIT	No bridge spans will have a SCICRIT value below 75
Target 2	SSCICRIT	The bridge stock will have a minimum SSCICRIT value of 86
Target 3	Strength Assessment	All bridges will be capable of carrying European standard 40/44T vehicles (except where weight limits have been imposed)
Target 4	Bridge Inspections	All bridges will be inspected on a 2-year cycle

5. Later sections of this life cycle plan show how different levels of available funding will influence the extent to which the desirable levels of service can be achieved.

6. Failure to respond adequately to any of these four levels of service will produce risk to the authority. Table 3 below, which details the main risks, underlines the importance of responding properly to each:-

Table 3

Risk Type	Description Example
Physical	Accidents caused by asset defects
Business	Legal proceedings for failure in duty of care
Financial	Reduction in the net book value of the asset and increase in eventual maintenance costs arising from lack of timely repairs
Corporate Image	Poor condition reflects on the overall image of the Council.
Environmental	Increased risk of flooding if watercourses beneath structures are not properly maintained.
Network	Increased disruption to highway users caused by emergency unplanned maintenance arising from suboptimal maintenance

Asset Base and Characteristics

7. The highway bridge stock comprises many different types of structures including masonry arches, concrete, and steel. They carry a wide range of highways from A Roads to Public Footpaths. The council holds information and data about the highway bridges and other highway structures is held on the WDM computerised structures asset management system. The WDM system is also able to interrogate the data held.

Highway Structures Inventory.

8. The Council's structures inventory is summarised in Table 4 below.

Table 4

Structure Type	Number of Structures
Bridges	209 No.
Footbridges	192 No.
Culverts	97 No.
Subways	11 No.

Asset Condition and Assessment

9. To asses the extent to which the desirable levels of service are met requires measurements covering the four dimensions of safety, availability, serviceability and condition. There are as yet no measures for serviceability and these will be considered further in the second edition of the HAMP.

10. Highway structures are subject to periodic inspection to determine their condition and to record any defects present. The regime is shown in Table 5 below.

Table 5

Type	Frequency	Assets Inspected
General Inspections	2 years	All bridges
Principal Inspections	6 years	All bridges except minor footbridges
Diving Inspections	Ad hoc	Bridges which have substructures in deep, often fast-flowing, watercourses
Special Inspections	Ad hoc	All structures as necessary
Superficial Inspections	2 years	Privately owned bridges

11 A Structure Condition Index (SCI) is determined for each individual structure, based on its condition at the time of the inspection. The SCI system is a nationally developed method, endorsed by ADEPT, with two SCI values calculated for each bridge:-

SCICRIT the value when only the critical load-carrying elements are considered

SCIAV the value when every element of the bridge is considered

12. How the SCI value relates to condition is shown in Table 6 below.

Table 6

SCI Range	Condition
100 – 95	Very Good condition
94 – 85	Good condition
84 – 65	Fair condition
64 – 40	Poor condition
39 – 0	Very Poor condition

13. An average value for the whole bridge stock, known as the Structure Stock Condition Index (SSCICRIT), is also calculated based on the individual SCICRIT values, and is weighted by area.

14. Bridge condition deteriorates at different rates according to the construction type, exposure conditions, traffic flows and maintenance regime adopted. It is a complex interaction of variables which makes forecasting trends very difficult.

15. Condition values monitored over time are shown in Table 7 below.

Table 7

Date	SSCIAV	SSCICRIT	% below SCICRIT 75
2009	93.79	90.75	12.80
2010	93.01	87.92	17.55
2011	92.77	87.79	16.81

16. In addition highway bridges are assessed to establish their ability to carry the loads which are imposed upon them. The assessment provides valuable information for managing the safety and serviceability of highway bridges. The road bridges in West Berkshire were last assessed under a national programme of assessment undertaken in the mid 1980s.

17. In accordance with current guidance bridges will be re-assessed at the following intervals:-

- a minimum of 12 years, to coincide with principal inspections;
- whenever there is a significant change in the bridge condition.

Asset Valuation

18. The background to Asset Valuation is described in Section 4 and Appendix E. The interim value of the highway bridge stock, based on the Gross Replacement Cost (GRC), is estimated to be approximately £ 75,351,000

19. This valuation has been developed from an unrefined method which will eventually be updated in line with the Guidance Document for Highway Infrastructure Asset Valuation once published.

Treatment Options and Costs

20. Treatment options and costs are summaries in Table 8 below.

Table 8

	Maintenance Activity	Treatment Option
Reactive	Emergency and non-programmed essential maintenance.	Ad-hoc emergency repairs. Graffiti removal.
Regular	Routine and cyclic maintenance.	Vegetation removal. Re-pointing of brickwork. Re-painting of metalwork. Drainage cleansing.
	Management of sub-standard structures.	Weight restriction.
Programmed	Preventative maintenance.	Concrete repairs. Re-painting of metalwork.
	Component renewal/upgrading.	Waterproofing. Parapets. Joints. Bearings.
	Replacement.	Replacement of Structure Replacement of deck Replacement of brick arches with precast concrete box culverts.

21. Table 9 below shows the expected service life for the different bridge types and treatments with their respective estimated replacement costs.

Table 9

Structure	Work	Interval	Cost (£000s)
Masonry arch (span range 1.5m – 12.0m, average span – 4.6m, average area – 131m2)			
	Brickwork repairs	10 years	15
	Complete replacement(with modern equivalent)	120 years	249
Concrete bridge (span range 1.5m – 33.5m, average span – 5.0m, average area – 103m2)			
	Drainage/bearing shelf cleaning	5 years	0.5
	Parapet painting	15 years	7.5
	Deck re-waterproofing	20 years	25
	Expansion joint renewal	20 years	15
	Concrete repairs	30 years	15
	Bearing renewal	30 years	60
	Complete replacement	120 years	196
Steel bridge (span range 3.0m – 39.0m, average span – 8.6m, average area – 265m2)			
	Drainage/bearing shelf cleaning	5 years	0.5
	Structural metalwork painting	12 years	10
	Parapet painting	15 years	7.5
	Deck re-waterproofing	20 years	30
	Expansion joint renewal	20 years	15
	Bearing renewal	30 years	60
	Complete replacement	120 years	665

22. It should be noted that not all bridges will require each of the treatments shown.

Management Strategy for Minimising Whole-Life Costs

23. When considering whole life costs, account needs to be taken of the direct and indirect costs associated with the asset group, including works, design and supervision, and inspection. With bridges, which have a long life but are very expensive to replace at the end of that life, it is essential to plan preventative maintenance works in a timely manner, since delays will increase the whole life cost of the structure.

24. Currently, our work programme is determined using the data in the bridge management system, and priority is given to the following:-

- structures with low SCICRIT values, i.e. those with structural defects which have a direct impact on their load-carrying capacity;
- structures with safety-related defects;
- structures with defects which, if not remedied, are likely to lead to more serious problems, for example failed waterproofing systems which will permit water ingress into decks, leading to corrosion of steel reinforcement.

25. The available funding is allocated to each of the above work-types on an annual basis to suit the importance or criticality of the works identified. This strategy is intended to deliver the identified levels of service.

26. Precedence is given to bridges on higher category roads and on roads carrying higher volumes of traffic.

27. Currently, maintenance works are identified in an annual programme, although major schemes are planned up to two years ahead.

Options and Targets within the Management Strategy

28. The analysis which follows looks at levels of maintenance spending against predicted outcomes for structures condition. The impact of spending on condition and service levels will continue to be developed over the course of HAMP.

Maintenance Budgets

29. The bridge maintenance budget is funded from Capital and Revenue budgets. Table 10 below shows the total level of funding over the last 3 years and how this funding has affected the condition of the bridge stock and service levels respectively.

Table 10 - Funding

Date	Total Funding (Capital and Revenue)	SSCIAV	SSCICRIT	% below SCICRIT 75
2009	£862,790	93.79	90.75	12.80
2010	£938,000	93.01	87.92	17.55
2011	£708.000	92.77	87.79	16.81

30. From the data collected to date, it has been established that the maintenance funding over the last three years has kept the condition of the bridge stock more or less stable. However, with reference to the set condition based service levels, Service Level 1 has not been met. Further development will take place over the course of this HAMP to refine the budget/service level relationship to enable us to set appropriate service levels for different budget allocations.

31. The Service Level Targets 2, 3 and 4 are all currently being achieved and there is a reasonable level of confidence that, with the same level of future funding, these service level will continue to be maintained.

32. Based on evidence currently available, minimum whole life cost is obtained if individual bridges have a SCICRIT value of 75 or above, i.e. in the 'fair condition' range. Reduced performance, that is lower SCICRIT values, will therefore lead to increased costs in the longer term. To achieve a level of condition which reflects minimum whole-life cost we need to reach a point where 100% of bridges meet this criteria. To achieve this may require some increased spending, though this can not be confirmed until more data is available to identify the correlation between maintenance spending and bridge condition.

Risks

33. The risks involved in implementing the lifecycle plan have been assessed against a standard grid of likelihood versus impact as shown in Tables 10 and 11 below, with an outline of the mitigation to be planned. The 'red' risks are listed in Section 7 of the main HAMP document.

Table 10

Impact				
	Extreme Impact - Rarely 4	**Extreme Impact - Moderate** 8	**Extreme Impact - Likely** 12	**Extreme Impact - Almost certain** 16
	High Impact - Rarely 3	**High Impact - Moderate** 6	**High Impact - Likely** 9	**High Impact - Almost certain** 12
	Medium Impact - Rarely 2	**Medium Impact - Moderate** 4	**Medium Impact - Likely** 6	**Medium Impact - Almost certain** 8
	Low Impact - Rarely 1	**Low Impact - Moderate** 2	**Low Impact - Likely** 3	**Low Impact - Almost certain** 4

Likelihood

Table 11

Risk	Level	Mitigation	Responsible
1. Insufficient staff resources.	8	Highlight in Service Plan Present Business Case for additional support	Head of Service Service Managers
2. Insufficient national guidance and support	2		
4. Materials/ labour/ plant/ staff costs	6	Ensure value for money is being achieved	Project Managers Contractors
5. Reduced capital funding	12	Prioritise key assets to minimise overall deterioration whilst maintaining safety	
6. Reduced revenue funding	12	Prioritise key assets to minimise overall deterioration whilst maintaining safety	

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Appendix D

Street Lighting Lifecycle Plan

Introduction

1. The background to lifecycle plans, and the format of each, are described in Section 5 of the HAMP. This appendix provides the lifecycle plan for street lighting. At this stage of development of the TAMP, feeder pillars, cabling etc have not been included in the life cycle plan.

2. Street lighting is divided into various categories for asset management purposes. The three main components of column, lantern and lamp have different requirements. The main consideration in terms of capital investment is column type. The following asset categories have been adopted:

Table 1

Category	Description
Aluminium (Cast)	Refers to columns with cast aluminium base/root section.
Aluminium (Extruded)	Refers to columns manufactured from a single piece extrusion.
Aluminium (Sheet)	Refers to columns which have been fabricated from sheet aluminium.
Cast Iron	Refers to cast iron columns.
Concrete	Refers to cast concrete columns.
Galvanised steel	Refers to galvanised/galvanised and painted columns.
Painted steel	Steel columns which are painted (may be zinc/aluminium sprayed)
Pole Bracket	Fixed to third party wooden distribution poles
Subway lighting	Fixed within pedestrian subways
Wall Brackets	Fixed to buildings

Levels of Service

3. In accordance with national guidelines, West Berkshire Council carries out a comprehensive programme of visual inspections and electrical testing. In addition to these inspections, the Council formally adopted a system of structural testing on steel columns in 2008.

4. Historically, condition/asset related data was collected and used to calculate national performance indicators, however, this has developed over the last two years and the data is now used to set budgets and priorities in accordance with the principles of asset management. Over the course of this HAMP, the management of the Street Lighting asset will continue to be developed in line with the recommendations given within the Institution of Lighting Engineers Technical Report 22 – Managing a Vital Asset; Lighting Supports and Well-lit Highways - Code of Practice for Highway Lighting Management 2004.

5. The desirable levels of service for this asset category are set out in Table 2 below and the lifecycle plan, in later sections, shows how different levels of available funding may influence the level of service.

Table 2

Attribute	Desired Standard	Performance measures
Safety	Road and footways lit to the recommended standards, to reduce accidents, crime and the fear of crime Installations physically and electrically safe.	Structural test results Electrical test results ELM reports* Term Contract performance indicators.
Availability	98% of all lights working 7 day average repair time.	LI98 LI215a
Serviceability	Low levels of light pollution. Good visual appearance in high amenity areas.	ELM reports* Customer surveys**.
Condition	Consistent with achieving minimum whole-life cost, in terms of preventative maintenance and column replacement.	Condition data.

** ELM – West Berkshire Council's enquiry logging manager.*
*** National Highway and Transport (IHT) survey 2009, 2010 and Council surveys*

6. Failure to respond adequately to any of these four dimensions of level of service will produce risk to the authority. Table 3 below details the key risks and underlines the importance of responding properly to each risk.

Table 3

Risk type	Description example
Physical	Accidents caused by structural defects or failure to maintain adequate structure. Electrical risk to the public. Injury to an operative working in the highway due to incomplete records, particularly underground cable records.
Business/ Financial risk	Legal proceedings for failing in duty of care. Increase in compensation payouts due to a rising number of accidents and third party claims. Fines imposed on the authority as a result of legal proceedings. Reduction in the net book value of the asset. Higher un-metered energy charges
Corporate Image	Ineffective or defective lighting reflecting on the overall image of the Council.
Environmental	Higher energy use and light spillage from old equipment.

Asset Base and Characteristics

7. The street lighting asset group comprises street lighting, feeder pillars and cabling that is owned and maintained by West Berkshire Council. A summary of the street lighting asset is summarised in Tables 4, 5, 6 and 7 below.

Table 4 - Column Type

Column Material	Number
Aluminium (Cast)	1715
Aluminium (Extruded)	3828
Aluminium (Sheet)	122
Cast Iron	7
Concrete	818
Galvanised Steel	2755
Painted Steel	2928
Pole Bracket	95
Subway Lighting	157
Wall Brackets	67
Total	**12492**

Table 5 - Lamps

Lamp Type	Wattage	Number
CDO	50	10
	70	87
	100	38
	150	36
	250	3
Compact Fluorescent	40	41
	55	4
Cosmopolis	45	26
	60	19
Fluorescent	20	10
	40	1
	70	108
LED	21	20
	29	153
	31	6
	37	45
	42	34
	61	17

Table 5 - Lamps (continued)

Lamp Type	Wattage	Number
MBFU	80	4
SON	50	434
	70	1567
	100	1064
	150	1610
	250	452
	400	1
SOX	35	5753
	55	256
	90	435
	135	346
	180	52
Total		**12632**

Table 6 - Controls

Control Type	Number
Time switch – all night	3907
Time switch – part night	0
Photo cell – all night	8483
Photo cell – part night	38
24 hour operation	139
Dimmed equipment	0
Total	**12632**

Table 7 - Column Age

Column Material	Age (Years)	Number of Columns by Mounting Height						
		< 5m	5m	6m	8m	10m	12m	Total
Aluminium (Cast)	0 – 20		17					17
	21 - 30		843					843
	31 – 40		822	3				825
	Over 40		30					30
	Total	0	1712	3				1715
Aluminium (Extruded)	0 – 20	2	1614	432	416	497	101	3062
	21 - 30		754					754
	31 – 40		10				1	11
	Over 40		1					1
	Total	2	2379	432	416	497	102	3828

Table 7 - Column Age (continued)

Column Material	Age (Years)	Number of Columns by Mounting Height						
		< 5m	5m	6m	8m	10m	12m	Total
Aluminium (Sheet)	0 – 20							
	21 - 30					37	35	72
	31 – 40					50		50
	Over 40							
	Total					87	35	122
Cast iron	0 – 20							
	21 - 30							
	31 – 40							
	Over 40	2	5					7
	Total	2	5					7
Concrete	0 – 20		3					3
	21 – 30		50					50
	31 – 40		416					416
	Over 40		349					349
	Total		818					818
Galvanised Steel	0 – 20	23	913	111	507	164	17	1735
	21 – 30		319	59	125	21	0	524
	31 – 40		214	13	44	124	45	440
	Over 40		48		8			56
	Total	23	1494	183	684	309	62	2755
Painted Steel	0 – 20	4	135	90	306	281	72	888
	21 – 30		38	91	270	36	5	440
	31 – 40		209	39	124	351	32	755
	Over 40		716		40	72	17	845
	Total	4	1098	220	740	740	126	2928
Pole Bracket	0 – 20		9					9
	21 - 30							
	31 – 40		5					5
	Over 40		75	6				81
	Total		89	6				95
Subway lighting	0 – 20	147						147
	21 - 30							
	31 – 40	10						10
	Over 40							
	Total	157						157

Table 7 - Column Age (continued)

Column Material	Age (Years)	Number of Columns by Mounting Height						
		< 5m	5m	6m	8m	10m	12m	Total
Wall Brackets	0 – 20	7	7	1	10	10		35
	21 – 30		3			1		4
	31 – 40	1	5	2	5	1		14
	Over 40		6	5	3			14
	Total	8	21	8	18	12		67
	Total	**196**	**7616**	**852**	**1858**	**1645**	**325**	**12492**

Asset Condition and Assessment

8. To establish the condition of the street lighting assets and the extent to which the desirable levels of service are met, the routine inspections and tests detailed in Table 8 below are carried out. Whilst there are no current measures for serviceability, this dimension will be developed over the course of this HAMP.

Table 8

Inspection/Test	Frequency
Clean, inspect and change lamp	2 & 4 years dependant on lamp type
Structural test	6 years
Electrical test	6 years
Visual safety check	Every visit
Scouting to check light operational	28 day cycle

9. Whilst there are no current national indicators for street lighting, the following Best Value Indicators have been retained as local indicators for reporting performance and for setting service levels:

- BVPI215a: Average number of days to repair a street light under the control of the Local Authority.
- BVPI98: The percentage of street lights not working as planned under the control of the Local Authority.

A summary of results for the period 2006 to 2010 is shown in Table 9 below.

Table 9

Indicator/Year	2006/07	2007/08	2008/09	2009/10	2010/11
LI215a (formally BV215a)	4.24	5.90	3.87	3.75	6.22
L98 (formally BV98)	0.89	1.01	1.01	1.04	1.17

Structural Testing and Inspection

10. Analysis has shown that different types of lighting columns have different structural problems. All street lighting columns are regularly inspected and specific structural testing has been undertaken on steel lighting columns. Visual inspections of concrete and aluminium columns are carried out at every visit as are brackets mounted on Electricity Board wooden poles, bridges and other buildings and structures not owned by the Council. Maintenance of the structure itself is the responsibility of others.

11. Steel street lighting columns over 12 years of age are tested every 6 years. Eddy current material thickness testing is used along with ultra sonic testing for the swage joint.

12. From the data obtained from these tests, colour based condition indicators are applied to the data to highlight the severity of each defect as detailed in Table 10 below.

Table 10

Colour Code	Loss of Thickness	Visual Inspection	Outcome
Red	> 50 %		Immediate replacement of column
High Amber	11 – 50 %	Damage assessed visually	Next test and visual inspection set for 3 years
Low Amber	0 – 10%	Damage assessed visually	
Green	0 – 10 %		Next inspection set for 6 years

13. The results of recent testing are summarised in Table 11 below:

Table 11

Date	Total	Red		High Amber		Low Amber		Green	
		Units	%	Units	%	Units	%	Units	%
2008/09	2029	14	0.69	59	6.60	1182	58.26	774	38.15
2009/10	133	2	1.50	30	22.56	14	10.53	87	65.41
2010/11	2500	86	3.44	123	4.92	610	24.4	1681	67.24
Totals	4662	102	2.19	212	30.57	1806	38.74	2542	54.53

14 From the available asset data, it has been established that steel columns have the highest percentage failure rate where the primary cause of failure is through a loss of wall thickness to the root section up to ground level as a result of corrosion.

15 In adopting the principles of asset management, initial consideration would be given to the high ambers in order to prevent these assets from deteriorating further and entering the red. However, because of the high safety risk associated with column failure, it is the Council's current policy to tackle the reds before the high ambers and budgets are set accordingly. From Table 10 above, the current replacement rate for red columns lies between 0.69% to 3.44%. (testing period 2008/9 to 2010/11).

16. It has been established that concrete lighting columns vary in structural condition according to manufacturer and this is taken into account when the routine visual inspections are carried out. Because of the destructive and disruptive nature of the standard load test, visual inspections are the preferred method of identifying column condition using the green/amber/red condition criteria.

17. Aluminium columns also vary in structural condition according to the type of construction, for example, columns with a cast aluminium base suffer from corrosion of the underground base section and cracking of the casting. Columns of a fabricated sheet construction suffer from corrosion of the underground base section and columns of an extruded construction have to date shown no significant structural defects. With this knowledge, it has been possible to apply the concrete column approach to assess condition.

18. A visual assessment of the structural condition of each lighting column is carried out on every visit. Lighting columns thought to be structurally unsound are further assessed and may be subject to an emergency "make safe" or are replaced. The visual inspection process will continue to be developed in accordance with recommendations given within TR22 Managing a Vital Asset: Lighting Supports over the course of this HAMP.

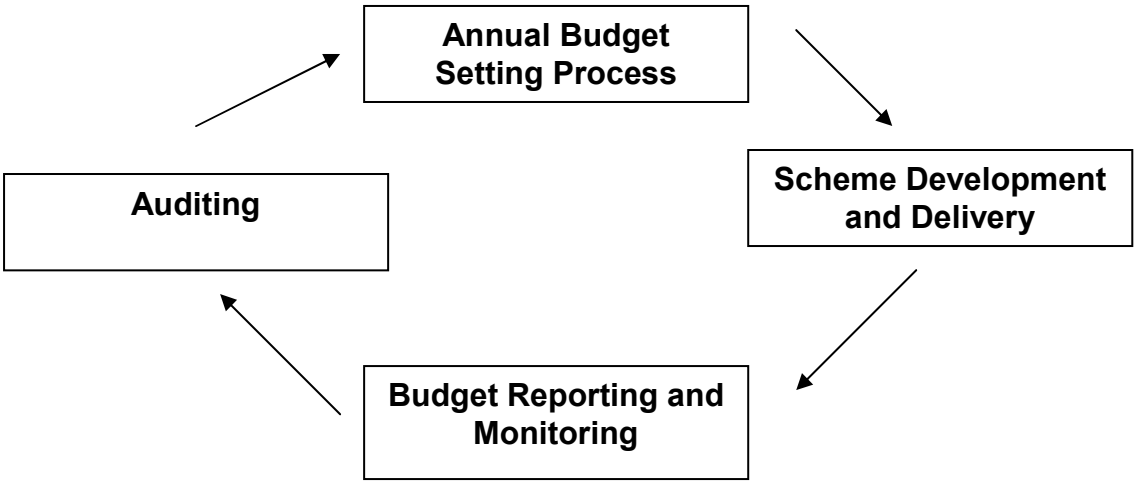
Electrical Testing

19. Electrical testing of each lighting column, feeder pillar and council-owned cable network is carried out every six years in accordance with the IEE regulations. By applying the red/amber/green condition methodology, the test results are prioritised in order of importance and programmed accordingly subject to the nature and severity of the defect and the inherent level of risk.

Financial Management, Investment and Programming.

20. The Council's constitution provides a flexible mechanism for ensuring effective and fully accountable financial management of the Council's transport budgets, both capital and revenue.

21. The framework within which operational budgets are managed is as follows:



22. Day to day budget control is the responsibility of the budget manager, a senior officer reporting directly to the Head of Service. The Head of Service has overall responsibility for the department's financial situation, working very closely with the Directorate Group Accountant, who is a key member of the Directorate Management Team. Service budgets are monitored at Directorate Management Team level and a formal budget report presented monthly to Corporate Board.

23. To ensure compliance with the constitution, regular independent audits are undertaken particularly in areas of high cash turnover such as car parks and concessionary fares.

24. The process for managing capital expenditure is very similar but the Council's Capital Strategy Group plays a key role in monitoring scheme progress and cost. Whilst an overview is taken by the Directorate Management Team, the details are closely monitored by the Capital Strategy Group using detailed monthly reports. This group is a good example of cross service corporate working as it comprises representatives of all Council Services with a capital expenditure programme. A holistic view of the Council's overall position regarding capital can therefore be taken.

25. To ensure that value for money is being achieved across the entire range of transport related budgets, the Council undertook a complete Zero Based Budget Review in October and November 2005. This review will continue to ensure that the Council's resources are used to the best effect by directing funds to the most needed area.

Budget Optimisation and Depreciation Modelling.

26. From the asset data, it has been possible to identify the level of funding required to meet the set service levels and this will be developed and refined in accordance with the recommendations of TR22 Managing a Vital Asset: Lighting Supports and Well-lit Roads – Code of Practice for Highway Lighting Management 2004.

27. Gross replacement cost and the depreciation cost have been calculated using the Code of Practice on Transport and Infrastructure Assets 2010 calculation template and standard rates and this will be developed in line with the Code of Practice recommendations over the course of this HAMP.

Maintenance Options

28. The limited number of types of lighting installation and ways in which they deteriorate, lead to a relatively short list of maintenance treatments. The key assets are summarised in Table 12 below. Short-term treatments are dictated by safety and serviceability requirements. Decisions on when to intervene with medium and long-term treatments are determined in accordance with the asset management strategy.

Table 12

Asset Type	Material	Treatment Type	Service Life Years	Height m	Unit Cost £
Columns	Steel**	Painting	7	All	50
		Replacement	40	5.0	750*
				6.0	800*
				8.0	1050*
				10.0	1350*
				12.0	1450*
	Concrete**	Replacement	40	5.0	750*
	Aluminium**	Replacement	40 +	5.0	750*
				6.0	800*
				8.0	1050*
				10.0	1350*
				12.0	1450*
Lamps****	SOX	Replacement	4		16.62
	SON	Replacement	4		5.60
	CDO	Replacement	3		22.62
	COSMO	Replacement	3		22.62
	Fluorescent	Replacement	2		2.09

Table 12 (continued)

Asset Type	Material	Treatment Type	Service Life Years	Height m	Unit Cost £
Lanterns***	LED	Replacement	25		500.00
	SOX	Replacement	25		250.00
	SON	Replacement	25		250.00
	CDO	Replacement	25		250.00
	COSMO	Replacement	25		250.00
Electrical components	Under the present contract, electrical components are replaced as part of an annual maintenance lump sum. In addition, the lanterns include for all the main components apart from the isolator and photocell. Compared to the key assets, their replacement cost is small and therefore have been included within the replacement cost of a column.				

* *including DNO service transfer cost*

* *concrete columns are replaced with extruded aluminium where design parameters allow.*

*** *lanterns are replaced with LED equivalents where designs parameter allow. Where it is not possible to fit an LED equivalent, the lantern will be replaced on a like for like basis. All replacement lanterns include lamps.*

**** *To cover the various wattages, an average cost of a lamp has been calculated for valuation/assessment purposes.*

Column Painting

29. In 2002, the Council introduced a standard where extruded aluminium columns would be used for new installations and to replace existing columns. The benefits of using aluminium columns are:

- To reduce routine maintenance costs
- To reduce the whole life cost of the asset
- To improve passive safety

30. Over time, aluminium columns will replace the current stock of steel columns, however, in managing the current stocks, unless painting is required for aesthetic reasons, the Council has adopted a non painting policy for the following reason. Whilst painting will arrest external corrosion, there is sufficient evidence to indicate that internal corrosion affects structural integrity and therefore painting of the exterior will not guarantee an extension to the service life of a column.

Lamp Replacement

31. Most lamp types have an expected service life between 2 and 4 years. In order to meet the set service levels, it is deemed more economical to replace lamps at the recommended intervals in order to minimise expensive reactive replacements, for example, control gear and lamp failure.

Strategy for Minimising Whole Life Cost

32. An asset's whole life cost includes the direct costs of works, design, supervision, testing and inspections. The main factors which will affect the whole life cost of an individual installation are:

- Specification and quality of materials and equipment.
- Degree and type of damage and degradation.
- Age of components.
- Speed and quality of response to damage and degradation.
- Timing of intervention and quality of medium and long term treatments.

33. The Council's strategy for maintaining street lighting maybe summarised as follows:

- To deliver a high standard of initial installation.
- To specify high quality materials and equipment.
- To carry out routine electrical and structural testing.
- To inspect lighting systems on a regular basis such that defects are identified within a reasonable period.
- To 'scout' for out of service lighting.
- To undertake reactive maintenance works expeditiously to prevent short term deterioration and keep in a safe condition.
- To maintain an up-to-date inventory of lighting stock to facilitate asset management and enable competitive purchase of energy.
- To bulk-change lamps to maintain light output at satisfactory levels.
- To replace end of service life columns.

34. The above strategy is based on good practice and will continue be developed over the course of this HAMP in accordance with national guidelines. In carrying out routine inspections, the Council is able to monitor the condition and the rate of degradation of the key components and as a consequence, deliver timely and cost effective treatments.

Options and Targets Within The Management Strategy

35. In managing the street lighting asset, the Council's policy is to first address columns that have been classified as being red followed by those that have been classified as high amber.

36. Under the current strategy, columns that have either failed a structural test, or have failed a visual inspection (condition RED) are replaced immediately and budgets have been set accordingly. Columns that have been deemed as being close to failing the structural test (deemed as HIGH AMBER) are then programmed for replacement in order of severity on a rolling three year programme as summarised in Table 13 below.

Table 13

	2010/11*	2011/12	2012/13	2013/14**	2014/15	2015/16
RED 5 and 6m Steel	**X**	**-**	**-**	**-**	**-**	**-**
HIGH AMBER 5 and 6m Steel	**X**	**X**	**X**	**-**	**-**	**-**
RED 8, 10 and 12m Steel	**-**	**-**	**-**	**X**	**-**	**-**
HIGH AMBER 8, 10 and 12m Steel	**-**	**-**	**-**	**X**	**X**	**X**
RED Aluminium (Visual Inspection)	**X**	**X**	**X**	**X**	**X**	**X**
RED Concrete (Visual Inspection)	**X**	**X**	**X**	**X**	**X**	**X**
RED Other (Visual Inspection)	**X**	**X**	**X**	**X**	**X**	**X**

* *Following the testing of the 5m and 6m steel columns*
** *Following the testing of the 8m, 10m and 12m steel columns*

37. As previously stated, the current column condition indicator calculation will be refined over the course of the HAMP using the Council's WDM asset management system and the guidance given within TR22.

38. To reduce the Council's carbon footprint and reduce energy and maintenance costs, focus is given to the replacement of aged and inefficient lanterns, lamps and control gear. Inefficient lanterns are being replaced with energy efficient LED luminaires on the existing column where residual service life of the column allows. LED luminaires provide improved quality 'white' light and have an expected useful life of 25 years. Currently 70w SON lanterns are being targeted for replacement as this gives the greatest energy saving.

Risks

39. The risks involved in implementing the lifecycle action plan have been assessed against the Council's standard grid of likelihood versus impact and are detailed in Tables 14 and 15 below, with an outline of the mitigation to be planned. The 'red' risks from each lifecycle plan are listed in section 7 of the main HAMP document.

Table 14

Impact				
	Extreme Impact - Rarely 4	**Extreme Impact - Moderate** 8	**Extreme Impact - Likely** 12	**Extreme Impact - Almost certain** 16
	High Impact - Rarely 3	**High Impact - Moderate** 6	**High Impact - Likely** 9	**High Impact - Almost certain** 12
	Medium Impact - Rarely 2	**Medium Impact - Moderate** 4	**Medium Impact - Likely** 6	**Medium Impact - Almost certain** 8
	Low Impact - Rarely 1	**Low Impact - Moderate** 2	**Low Impact - Likely** 3	**Low Impact - Almost certain** 4

Likelihood

Table 15

Risk		Level	Mitigation	Responsible
1.	Insufficient staff resources.	6	Highlight in Service Plan Present Business Case for additional support	Head of Service Service Managers
2.	Insufficient national guidance and support	6	Lobby DfT	Head of Service Service Managers
3.	Materials/ labour/plant/ staff costs	6	Ensure value for money is being achieved	Project Managers Contractors
4.	Reduced capital funding	12	Prioritise key assets to minimise overall deterioration whilst maintaining safety	Council Officers
5.	Reduced revenue funding	12	Prioritise key assets to minimise overall deterioration whilst maintaining safety Use of energy efficient components.	Council Officers

SCRIM (Measurement of Skidding Resistance of the Road Surface)

Introduction

1. West Berkshire Council has a "Skid Resistance Related Accident Reduction Policy" to manage and maintain an appropriate level of skidding resistance on running surfaces, with the overall aim of reducing the frequency of skid related accidents in wet conditions on its classified road network (referred to as the 'critical network').

2. Whilst a high skid resistance will not prevent the emergency braking situation from arising or improve driver judgment, it can often alleviate the effects of driver error and reduce the risk of an accident occurring or at least reduce the severity of a collision. This will not only reduce the amount of suffering but also save considerable costs to the community. The implementation of a robust Skid Resistance policy will also provide a defence against litigation.

3. The intention of the policy is to provide procedures and guidance to assist the Engineer in measuring skid resistance and offer a methodology in assessing the need for and the prioritising of remedial works in order to maintain an appropriate level of skidding resistance on the highway network.

4. The term "skid resistance" refers to the frictional properties of the road surface, measured using an approved testing device, under controlled conditions. Measurements obtained from skid resistance testing of a road surface are analysed in conjunction with individual site characteristics and accident statistics to assess the need for maintenance.

5. The Highways Agency has produced a standard for skid resistance referred to as HD28/04. This standard describes how the provision of appropriate levels of skid resistance for trunk roads will be managed. There is also an interim advice note IAN98/07 which was issued in 2007 and overrules some of the statements in HD28/04. The HD28/04 standard has been revised and will be reissued in due course as HD28/09.

6. The Skid Resistance Policy for the West Berkshire Council is based on the Highways Agency Standard HD28/04 and also takes into account the information from the soon to be issued HD28/09. However, it should be noted that the Highways Agency standard is specifically for the management of skid resistance for Motorways and Trunk Roads within the UK. Therefore, the policy also considers advice from the following key documents, for managing skid resistance on the local road network:

    - County Surveyors Society (CSS) Guidance Note on Skidding Resistance
    - Horses and Highway Surfacing ENG 03/05
    - Code of Practice for Highway Maintenance Management
    - Interim Advice Note IAN 49/03
    - Skid resistance studies on Local Roads in the UK carried out by WDM®

Routine Testing (SCRIM)

7. Within West Berkshire, the SCRIM (Sideway-force Coefficient Routine Investigation Machine) is used for measuring skid resistance by measuring the force between a rubber tyre against a wetted road surface. The resulting value, referred to as the Sideway-force Coefficient, relates to the coefficient of friction and provides an indication of the polished state of a road surface.

8. The skid resistance policy only applies to the roads that are surveyed and this set of roads is referred to as the critical network. As a consequence, there is no formal skid resistance policy for the unclassified roads, however, there is a requirement for surfacing aggregates to meet minimum specified levels for Polished Stone Values to help maintain the skid resistance of the surface on the unclassified road network. The traffic levels on the unclassified roads are relatively low and so are the number of wet skidding accidents, therefore, this approach is considered an acceptable risk to achieve a cost effective output.

9. The Investigatory Level (IL) is a skid resistance warning level. If the skid resistance is found to be below the IL then an investigation is required to establish if treatment should be undertaken. The IL's have been specifically established for West Berkshire Council by using previous studies and comparing the accident rates to the skid resistance at various site categories across the critical network. It has been found that different sites present different risks and as a consequence, the IL varies depending on the site in an attempt to present an equal risk across the critical network. A summary of the IL bands is shown in Table 1 overleaf.

10. With reference to Table 1, the initial IL's are shown with an 'I' in the cell. The initial values will be applied to each site category but these initial values will be reviewed as each site is investigated and the IL will be confirmed or an alternative IL selected within the band highlighted in dark grey as appropriate to the risks presented by the site. Some site categories have a light grey cell below the dark grey band, as recommended in HD 28/04.These IL values may be used on sites that are considered very low risk.

Site Categories and Investigatory Levels

Site Category and Definition		Investigatory Level at 50 km/h							
		0.30	0.35	0.40	0.45	0.50	0.55	0,60	0.65
A	Motorway Class		I						
B	Dual Carriageway non-event		I						
C	Single Carriageway non-event			I					
Q1	Approaches to and across minor and major junctions				I				
Q2	Approaches to roundabouts					I			
K	Crossings and other high risk situations						I		
R	Roundabout				I				
G1	Gradient 5-10% longer that 50m				I				
G2	Gradient >=10% longer than 50m					I			
S1	Bend radius <=500m – dual carriageway				I				
S2<100	Bend radius <=100m – single carriageway					I			
S2>100	Bend radius > 100m and <=250m – single carriageway				I				
S2>250	Bend radius >250m and <500m – single carriageway				I				

Site-Investigation and Treatment

11. Once the SCRIM and accident data are processed, the information can be filtered and collated into lists that identify sites that are below the required SCRIM IL and or have disproportionately high accident rates. These sites will then be assessed and prioritised for investigation by a designated Site Investigator. In carrying out the investigation, the Site Investigator will carry out a risk assessment and make a recommendation based on the four options below for each site.

    - The site requires a change in the investigatory level
    - The site requires treatment to improve the skid resistance
    - The site requires a treatment other than for the skid resistance
    - The site does not require treatment.

12. The recommendation to treat sites for skid resistance will initially be made by the Site Investigator and then confirmed by the Highways Manager. The Highways Manager or his delegated representative will decide which sites are to be treated to improve the skid resistance and the time frame. If it is agreed that certain sites require treatment other than for the skid resistance, these sites will be considered as safety sites and passed over to the Traffic Services team within Highways and Transport.

13. If treatment for skid resistance is required and the work cannot be started within a reasonable period of time, slippery road signs may be erected if highlighted as a risk. If a site that has been signed but has not been treated due to timescale/budget constraints and wet injury accidents have decreased to zero within a 3 year period, signs will be removed. Once a site has been treated and on re-surveying, is found to be above the required IL, any slippery road signs will be removed as soon as is reasonably practicable.

Appendix F

Initial Asset Valuation for West Berkshire

1. Introduction

1.1 In 2010, CIPFA published the Code of Practice on Transport and Infrastructure Assets. This code provides guidance on the development and use of financial information to support asset management, financial management and reporting of local transport infrastructure assets.

1.2 The Code has been developed in collaboration with the Highways Asset Management Information Group (HAMFIG), whose work is supported by a number of government funded research projects.

1.3 This appendix describes the analysis carried out to produce the first valuation for our highways assets in accordance with the CIPFA guidance. The most detailed work has been carried out on carriageways and street lighting but simplified estimates have been made for footways, structures, traffic management and street furniture. The second version of the HAMP will include a more detailed analysis for these assets.

2. Carriageways, Footways and Cycletracks

2.1 The road lengths and categories are taken from R199B, an annual return of network length. The categories are A, B, C and unclassified roads, split between urban and rural, where rural is defined as roads with a speed limit of over 40 mph.

2.2 For each road class, the average carriageway width has been calculated using measurements from Ordnance Survey MasterMap data and the Council's United Kingdom Pavement Management System (UKPMS) as supplied by WDM Ltd.

2.3 The UKPMS specification provides a national standard for management systems for the assessment of local road network condition and for the planning of investment and maintenance on paved areas of roads, kerbs, footways and cycletracks on local roads within the UK.

2.4 The estimated Gross Replacement Cost (GRC) has been calculated using the Carriageway and Footway Gross Replacement Cost Calculator as published by CIPFA. This calculator uses default unit construction rates for all classes of road as developed by the Highways Asset Management Financial Information Group (HAMFIG).

2.5 Adopting the Code of Practice - Well Maintained Highways classifications and the urban/rural split in accordance with the CIPFA recommendations, the annual depreciation has been calculated for each asset group using UKPMS and combined to produce a gross depreciation value for the network.

Depreciation and Net Value of Carriageways

2.6 For all classes of road, the condition of the road network is determined using SCANNER surveys and the results are reported annually through national indicators. The condition indicators refer to the percentage of the road category that is exhibiting sufficient defects to merit repair. This is sometimes referred to as the “red” portion. The next level down is referred to as the “amber” portion, which suggests that it is acceptable at present, but will require attention in the future.

2.7 Depreciation parameters, including default renewal unit rates, total useful life and deterioration models for each road class are used to establish the Depreciated Replacement Cost (DRC). The calculation is carried out using the United Kingdom Pavement Management System (UKPMS) in accordance with the guidance given in the Code of Practice on Transport/ and Infrastructure Assets 2010 and UKPMS Technical Note TN46 Part 1 June 2010.

2.8 The net value of the carriageway asset can then be determined by deducting from the Gross Replacement Cost (GRC) the DRC, where the GRC is the total cost of renewing the asset.

2.9 A summary report detailing the current GRC and DRC is included within this appendix

Depreciation and Net Value of Footways

2.10 In 2008/9, BV187 was formally removed by the Government as a national indicator. This indicator was calculated in UKPMS using condition data collected from annual detailed visual inspection (DVI) surveys on the Category 1 and 2 footway networks.

2.11 Following this change and with the knowledge that the routine safety inspection process would continue to identify any defects on the footway network in its entirety, the asset inventory and machine based condition surveys on the carriageway became the main focus point.

2.12 Using the estimated areas of each footway category, it has been possible to calculate the GRC for the footway network. However, in order to calculate the DRC, a detailed survey of the footway network is required in order to determine the necessary asset data. To achieve this, the Council has embarked on a full Footway Network Survey (FNS) and the depreciation modelling will be developed over the life of the HAMP using the collected condition data.

2.13 A summary report detailing the current GRC and DRC is included within this appendix

3. Bridges

3.1 Although it was not a requirement to produce a valuation for bridges in 2010/11, the Council has estimated the GRC and DRC using the Roads Liaison Group's Guidance Document for Highway Infrastructure Asset Valuation 2005 Edition. This methodology will be replaced once the new guidance has been published by CIPFA in 2012.

3.2 This Asset Valuation includes all the following Asset Groups.

- bridges
- culverts
- subways
- footbridges

3.3 In West Berkshire, footbridges on surfaced and un-surfaced public rights of way are maintained as part of the highway infrastructure asset and so have been included in this valuation.

3.4 A summary report detailing the current GRC and DRC is included within this appendix.

4. Street Lights

4.1 This asset valuation includes all the following asset groups.

- columns
- bollards
- illuminated signs

4.2 A summary report detailing the current GRC and DRC is included at the back of this appendix.

5. Other Highway Assets including Land

5.1 In accordance with the CIPFA Code of Practice, the recommendation is for authorities to use rates broadly comparable to the two types of measures used in the Code until national rates have been published. Rural land will, therefore, be valued using the rates for mixed agricultural use and urban land at residential land values, which are at the upper end of the developed land values. These two measures are used because they are believed to provide good representative values for urban and rural land as a whole.

5.2 The urban/rural split has been determined using the standard local road urban/rural classification which is based on speed limits. This provides a good indicator of the nature of the adjacent land and it is one that can be applied readily and consistently.

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Annual Depreciation Report

RCI Run Identifier:	CCI	*Weighting Set ID:*	WSCCIv0102	*RCI Run Date:*	08/06/2011	*From Date:*	01/04/2009	*To Date:*	08/06/2011
Report Run Date & Time:	08/06/2011 16:02			*UKPMS System:*	PMS	*UKPMS System Version:*	4.4.0		
Automatic Pass Run ID:	?			*Rule Set Identifier:*	RP10.01	*Run Date:*	07/02/2011		
From Date:	01/04/2010	*To Date:*	31/03/2011	*Merge Method:*	Fixed	*Parameter (CI tolerance):*	12	*Parameter (Length tolerance):*	10

Depreciation Paramteters

		Deterioration Initiation T_{INI}	Total Useful Life T_{TUL}	Renewal Unit Rate
R	3	3	20	20.00
R	4	3	15	18.00
R	5	5	25	12.00
R	6	3	20	10.00
U	3	3	20	25.00
U	4	3	20	20.00
U	5	5	20	15.00
U	6	5	20	8.00

Network Grouping			Total Number of Sections	Network length (km)	Average width (m)	Status	Total Useful Life $T_{Tul\ Yrs}$	Renewal Unit rate £/m2	Survey Coverage		Depreciation		
											Annual	Accumulated	
									km	%	£ '000s	%	£ '000s
R	**3**		109	**88.734**	6.8	D	20	20.00	81.276	91.6	603.391	36.5	4,404.756
R	**4**		70	**62.785**	6.5	D	15	18.00	62.753	99.9	489.723	42.1	3,092.601
R	**5**		396	**357.423**	6.5	D	25	12.00	356.336	99.7	1,115.160	52.9	14,747.988
R	**6**		509	**374.389**	6.5	D	20	10.00	359.504	96.0	1,216.764	54.5	13,262.730
R	**ALL**		**1,084**	**883.331**					**859.869**	**97.3**	**3,425.038**	**49.6**	**35,508.075**
U	**3**		94	**28.946**	6.8	D	20	25.00	27.454	94.8	246.041	42.3	2,081.507
U	**4**		43	**11.802**	6.6	D	20	20.00	11.802	100.0	77.893	43.5	677.671
U	**5**		250	**65.556**	6.5	D	20	15.00	63.487	96.8	319.586	52.1	3,330.081
U	**6**		1715	**280.035**	6.5	D	20	8.00	208.657	74.5	728.091	54.3	7,907.068
U	**ALL**		**2,102**	**386.339**					**311.400**	**80.6**	**1,371.611**	**51.0**	**13,996.327**

Network Grouping			Total Number of Sections	Network length (km)	Average width (m)	Status	Total Useful Life $T_{Tul\ Yrs}$	Renewal Unit rate £/m2	Survey Coverage		Depreciation		
											Annual	Accumulated	
									km	%	£ '000s	%	£ '000s
3	**ALL**		**203**	**117.680**					**108.730**	**92.4**	**849.432**	**38.2**	**6,486.263**
4	**ALL**		**113**	**74.587**					**74.555**	**100.0**	**567.616**	**42.3**	**3,770.272**
5	**ALL**		**646**	**422.979**					**419.823**	**99.3**	**1,434.745**	**52.8**	**18,078.069**
6	**ALL**		**2,224**	**654.424**					**568.161**	**86.8**	**1,944.855**	**54.4**	**21,169.799**
ALL DATA			**3,186**	**1,269.670**					**1,171.269**	**92.2**	**4,796.649**	**50.0**	**49,504.402**

Appendix F

STRUCTURES VALUATION 2011

Bridges

Item	Item Type	Bridge Code	Bridge Name	Gross Replacement Cost GRC £	Depreciated Replacement Cost DRC £
14	BRIDGE	101	SWAN (NEWBURY)	390,099.20	385,099.20
25	BRIDGE	102	HAM (IRON)	912,960.00	897,960.00
26	BRIDGE	1027	CURRIDGE TURN	1,339,728.00	1,339,728.00
31	BRIDGE	1031	LOVE LANE	2,643,408.00	2,643,408.00
32	BRIDGE	1032	RIVER LAMBOURN	704,160.00	703,760.00
34	BRIDGE	1034	LONDON ROAD	2,125,440.00	2,122,440.00
37	BRIDGE	104	BOURNE ARCH	4,800.00	4,800.00
38	BRIDGE	105	NORTHFIELD	222,583.70	222,583.70
40	BRIDGE	107	LONG	882,720.00	871,720.00
41	BRIDGE	108	QUAKING	187,200.00	183,250.00
42	BRIDGE	109	KINGS (BRIMPTON)	763,200.00	761,200.00
44	BRIDGE	110	ABEL	341,376.00	339,876.00
46	BRIDGE	1115	WALTON WAY	604,800.00	604,800.00
47	BRIDGE	112	SHALFORD	236,592.00	236,592.00
48	BRIDGE	113	WARRENS	58,379.04	55,929.04
52	BRIDGE	114	MALTHOUSE SOUTH	89,280.00	68,480.00
54	BRIDGE	115	MALTHOUSE NORTH	160,512.00	140,012.00
60	BRIDGE	116	ENBORNE DRAIN WEST	122,304.00	122,304.00

Bridges continued

Item	Item Type	Bridge Code	Bridge Name	Gross Replacement Cost GRC £	Depreciated Replacement Cost DRC £
61	BRIDGE	117	OLD MILL WEST	217,488.00	216,488.00
65	BRIDGE	118	ALDERMASTON IRON	1,774,080.00	1,773,480.00
69	BRIDGE	119	OLD MILL	309,120.00	308,920.00
72	BRIDGE	120	OLD MILL EAST	44,640.00	41,640.00
80	BRIDGE	122	PADWORTH HIGH	39,600.00	36,600.00
81	BRIDGE	123	PADWORTH GREAT	673,941.60	673,941.60
85	BRIDGE	124	FORD SULHAMSTEAD	4,800.00	-1,200.00
86	BRIDGE	1240	CHAPEL ALDERS (332A)	57,600.00	56,100.00
87	BRIDGE	1241	RED HOUSE (332B)	86,400.00	79,400.00
88	BRIDGE	1242	HAMSTEAD MILL RACE (333A)	48,000.00	38,600.00
90	BRIDGE	125	TYLE MILL	741,607.70	720,107.70
91	BRIDGE	1252	ENBORNE RD RLY	4,800.00	4,800.00
95	BRIDGE	126	SHEFFIELD MILL SOUTH	218,419.20	196,219.20
101	BRIDGE	127	SHEFFIELD MILL NORTH	391,579.80	380,579.80
102	BRIDGE	128	BRICK	206,185.00	205,735.00
103	BRIDGE	129	KENNET (THEALE)	226,386.70	226,386.70
105	BRIDGE	130	FOLLY	195,975.00	195,975.00
107	BRIDGE	131	CHALK PIT	82,168.80	82,168.80
110	BRIDGE	1313	HUNGERFORD MAIN ROAD	242,990.40	242,990.40
115	BRIDGE	132	HOG MOOR EAST	289,169.30	288,169.30

Bridges continued

Item	Item Type	Bridge Code	Bridge Name	Gross Replacement Cost GRC £	Depreciated Replacement Cost DRC £
116	BRIDGE	1320	KINTBURY MAIN ROAD	139,920.00	139,920.00
126	BRIDGE	133	TIDMARSH MIDDLE	47,520.00	47,520.00
127	BRIDGE	1330	THATCHAM MAIN ROAD	456,000.00	445,000.00
137	BRIDGE	134	TIDMARSH LITTLE	802,584.00	800,584.00
144	BRIDGE	135	TIDMARSH	130,942.10	125,942.10
147	BRIDGE	136	TIDMARSH MILL	149,913.60	149,913.60
153	BRIDGE	137	ALBURYS	179,376.00	176,976.00
160	BRIDGE	138	MIDDLE CHAIN ARCH	181,440.00	181,440.00
163	BRIDGE	139	EAST CHAIN ARCH	68,640.00	67,140.00
165	BRIDGE	1396	BASILDON PARK SKEW	1,586,880.00	1,586,880.00
167	BRIDGE	140	TUN	220,800.00	217,800.00
181	BRIDGE	1452	MANS HILL	47,520.00	46,320.00
205	BRIDGE	149	MILE END FARM	46,800.00	46,800.00
279	BRIDGE	1640	POTASH FARM SOUTH FOOTBRIDGE	10,752.00	9,552.00
311	BRIDGE	1723	RAF CLAYHILL	4,800.00	2,500.00
312	BRIDGE	1728	OLD MIDDLE (NEWBURY)	292,464.00	290,464.00
317	BRIDGE	1738	RED SHUTE HILL	235,200.00	235,200.00
330	BRIDGE	18	GREENHAM MILL SOUTH	169,920.00	168,520.00
366	BRIDGE	19	GREENHAM MILL NORTH	396,480.00	394,230.00
397	BRIDGE	1955	KINGS MILL RACE	590,208.00	584,208.00

Bridges continued

Item	Item Type	Bridge Code	Bridge Name	Gross Replacement Cost GRC £	Depreciated Replacement Cost DRC £
400	BRIDGE	1964	FURZEY GROUND FOOTBRIDGE	10,560.00	10,560.00
479	BRIDGE	2034	NEW FARM	76,800.00	75,800.00
505	BRIDGE	206	SNELSMORE BRIDGE	4,800.00	4,800.00
513	BRIDGE	2067	PITFIELD LANE	52,200.00	52,200.00
551	BRIDGE	217	WOOLHAMPTON MILL	91,392.01	91,392.01
557	BRIDGE	219	ENBORNE DRAIN EAST	126,144.00	126,144.00
597	BRIDGE	233	WELFORD PARK EAST	268,800.00	263,500.00
600	BRIDGE	234	ROOKERY	93,264.00	91,264.00
602	BRIDGE	235	WELFORD PARK WEST	345,600.00	345,100.00
608	BRIDGE	2357	BREACHES GULLY FOOTBRIDGE	4,800.00	4,800.00
637	BRIDGE	243	WATER	348,816.00	347,816.00
639	BRIDGE	244	MAGPIE BRIDGE	15,840.00	12,340.00
673	BRIDGE	2506	MIDGHAM LOCK	237,600.00	237,600.00
694	BRIDGE	2574	TYLERS BRIDGE	14,400.00	14,400.00
700	BRIDGE	258	BUSHNELL GREEN BRIDGE	20,736.00	20,736.00
728	BRIDGE	314	UFTON SOUTH	35,020.80	33,020.80
729	BRIDGE	316	PANG	102,000.00	93,800.00
730	BRIDGE	317	EVERINGTON	4,800.00	4,800.00
731	BRIDGE	318	MILL (BOXFORD)	124,032.00	118,832.00
732	BRIDGE	319	KENNET (BOXFORD)	174,720.00	171,420.00

Bridges continued

Item	Item Type	Bridge Code	Bridge Name	Gross Replacement Cost GRC £	Depreciated Replacement Cost DRC £
734	BRIDGE	321	BARE LEASE	39,780.00	34,780.00
735	BRIDGE	322	PEATPITS WOOD	76,608.00	73,608.00
736	BRIDGE	323	BRADFIELD NORTH	126,480.00	115,280.00
737	BRIDGE	324	BRADFIELD SOUTH	130,560.00	126,560.00
739	BRIDGE	326	BURGHFIELD	409,200.00	409,200.00
743	BRIDGE	332	BENHAM MARSH	191,520.00	180,520.00
744	BRIDGE	333	HAMSTEAD MILL	429,408.00	424,408.00
745	BRIDGE	334	WELFORD CHURCH	225,792.00	217,291.00
750	BRIDGE	339	FROUDS	74,880.00	69,880.00
751	BRIDGE	340	BRIMPTON MILL	39,312.00	38,312.00
752	BRIDGE	341	KINTBURY FARM	26,880.00	25,880.00
753	BRIDGE	342	FROUDS BRICK	74,880.00	68,680.00
756	BRIDGE	345	DUCKS	62,208.00	62,208.00
757	BRIDGE	346	WINTERBOURNE	36,960.00	36,960.00
758	BRIDGE	347	WEST BAGNOR	47,328.00	43,828.00
759	BRIDGE	348	BAGNOR MIDDLE	50,880.00	48,880.00
760	BRIDGE	349	EAST BAGNOR	105,984.00	103,784.00
761	BRIDGE	350	BOURNE	4,800.00	4,800.00
762	BRIDGE	351	BISHOPS GREEN	238,896.00	236,896.00
764	BRIDGE	353	MARLSTON GREATER	67,200.00	67,200.00

Bridges continued

Item	Item Type	Bridge Code	Bridge Name	Gross Replacement Cost GRC £	Depreciated Replacement Cost DRC £
766	BRIDGE	355	REDHILL VIEW	70,848.00	68,848.00
767	BRIDGE	356	WALNUT COTTAGE	115,200.00	115,200.00
768	BRIDGE	357	BUCKLEBURY MANOR FARM	80,640.00	78,640.00
769	BRIDGE	358	HAWKRIDGE	129,888.00	128,688.00
770	BRIDGE	359	FOUNDRY	67,680.00	66,680.00
772	BRIDGE	361	COCKS LANE	92,736.00	92,736.00
773	BRIDGE	362	POTASH FARM	57,120.00	53,920.00
774	BRIDGE	363	STANFORD DINGLEY	35,008.80	32,008.80
775	BRIDGE	364	LAMDENS	4,800.00	2,100.00
776	BRIDGE	365	GOODBOYS COPSE	26,400.00	15,300.00
777	BRIDGE	366	ADMORE	33,696.00	31,396.00
778	BRIDGE	367	PADWORTH	4,800.00	-1,700.00
779	BRIDGE	368	PADWORTH HOUSE	53,582.40	49,582.40
780	BRIDGE	369	GOOSE GREEN	81,600.00	81,600.00
782	BRIDGE	371	BOCKHAMPTON	139,200.00	130,199.00
784	BRIDGE	373	MANOR FARM EASTBURY	76,320.00	76,316.00
785	BRIDGE	374	EAST GARSTON	77,952.00	76,951.00
786	BRIDGE	375	MIDDLE (EAST GARSTON)	98,496.00	97,496.00
787	BRIDGE	376	MABERLEYS	74,880.00	71,080.00
788	BRIDGE	378	MAIDEN COURT	64,896.00	61,396.00

Bridges continued

Item	Item Type	Bridge Code	Bridge Name	Gross Replacement Cost GRC £	Depreciated Replacement Cost DRC £
790	BRIDGE	380	SHEFFORD MILL	94,377.60	94,177.60
791	BRIDGE	381	DUN MILL	190,195.20	169,995.20
792	BRIDGE	382	DENFORD MILL	104,163.40	79,363.41
794	BRIDGE	384	LOWER DENFORD SOUTH	150,672.00	150,672.00
795	BRIDGE	385	LOWER DENFORD NORTH	91,872.00	88,372.00
796	BRIDGE	386	FOXLEY BOTTOM	40,435.20	34,435.20
800	BRIDGE	390	PEBBLE HILL	72,907.20	68,807.20
801	BRIDGE	391	OLD HAT	49,680.00	47,380.00
802	BRIDGE	392	HOLT MANOR	24,883.20	24,483.20
803	BRIDGE	393	HOLTWOOD WATER SPLASH	134,400.00	131,400.00
804	BRIDGE	394	WARREN KILN	46,080.00	45,880.00
805	BRIDGE	395	PUDDLE WHARF	80,352.00	67,652.00
807	BRIDGE	397	HAZELBY	4,608.00	2,508.00
808	BRIDGE	398	SMITHAM	199,680.00	197,680.00
812	BRIDGE	477	UFTON TWIN ARCH	120,960.00	118,460.00
813	BRIDGE	478	UFTON DITCH	63,148.80	58,648.80
814	BRIDGE	479	TYLE MILL DRAIN	4,800.00	-1,200.00
816	BRIDGE	5	DISCOVERY BRIDGE	192,000.00	192,000.00
831	BRIDGE	522	KINGS HILL	61,246.08	60,296.08
836	BRIDGE	529	CLAPPERS FARM	95,040.00	94,740.00

Bridges continued

Item	Item Type	Bridge Code	Bridge Name	Gross Replacement Cost GRC £	Depreciated Replacement Cost DRC £
837	BRIDGE	532	TROWES	103,680.00	103,580.00
838	BRIDGE	533	MISSELS	89,856.00	86,506.00
839	BRIDGE	542	ELTON FARM SOUTH	115,248.00	112,245.00
840	BRIDGE	543	ELTON FARM NORTH	115,248.00	111,498.00
841	BRIDGE	550	BARRS FARM	4,800.00	1,300.00
842	BRIDGE	558	WARENNES WOOD	76,800.00	76,400.00
843	BRIDGE	561	HATCH HOUSE LANE	43,200.00	28,200.00
849	BRIDGE	571	MILTON	60,672.00	60,172.00
850	BRIDGE	575	WESTBROOK FARM	258,048.00	251,048.00
852	BRIDGE	578	AMERICAN	864,000.00	864,000.00
855	BRIDGE	582	BRADFIELD LODGE	124,800.00	114,800.00
856	BRIDGE	583	GRAZELEY GREEN	68,160.00	68,160.00
857	BRIDGE	584	BURNTHOUSE LANE	55,440.00	54,940.00
858	BRIDGE	585	BURNTHOUSE	79,175.04	79,175.04
865	BRIDGE	616	SCOTALLS	49,632.00	49,632.00
873	BRIDGE	628	SCHOOL	259,200.00	257,000.00
874	BRIDGE	629	ILSLEY ARCH	56,784.00	54,284.00
875	BRIDGE	634	BURGHFIELD BROOK	29,568.00	29,568.00
876	BRIDGE	639	FROUDS LANE	44,160.00	43,660.00
877	BRIDGE	647	WINTERBOURNE ARCH	84,096.00	82,596.00

Bridges continued

Item	Item Type	Bridge Code	Bridge Name	Gross Replacement Cost GRC £	Depreciated Replacement Cost DRC £
878	BRIDGE	648	UFTON RIVER	568,346.90	564,846.90
879	BRIDGE	649	WEST MEADOW NORTH	48,384.00	48,384.00
880	BRIDGE	650	WEST MEADOW SOUTH	48,384.00	48,384.00
881	BRIDGE	651	TIDNEY	7,200.00	7,200.00
882	BRIDGE	652	VICTORIA LODGE	7,200.00	2,200.00
883	BRIDGE	654	HILLFIELDS	4,320.00	2,820.00
884	BRIDGE	655	ACRES FARM	32,832.00	31,332.00
887	BRIDGE	662	RIVER BARN SOUTH	44,352.00	44,352.00
889	BRIDGE	664	LODGE	4,800.00	4,800.00
897	BRIDGE	7	FOUR ACRE COPSE	15,552.00	15,352.00
898	BRIDGE	70	LAMBOURN	268,320.00	266,070.00
899	BRIDGE	702	RECTORY	83,232.00	78,832.00
900	BRIDGE	703	SULHAM TURN	45,552.00	45,552.00
902	BRIDGE	709	SCHOOL LANE	21,120.00	20,920.00
904	BRIDGE	710	ENBOURNE HILL	30,720.00	27,320.00
906	BRIDGE	714	PEAR TREE	27,648.00	27,648.00
907	BRIDGE	715	OLD LANE	48,000.00	47,500.00
908	BRIDGE	716	BRIDGES FARM	13,380.96	11,380.96
909	BRIDGE	72	EASTBURY	237,456.00	235,255.00
911	BRIDGE	722	LOCKRAM ROAD	56,640.00	55,740.00

Bridges continued

Item	Item Type	Bridge Code	Bridge Name	Gross Replacement Cost GRC £	Depreciated Replacement Cost DRC £
913	BRIDGE	724	COMPTON STATION	73,440.00	66,440.00
922	BRIDGE	75	ASHBROOK	152,640.00	150,140.00
924	BRIDGE	752	TANHOUSE	40,320.00	40,320.00
925	BRIDGE	76	IVY HOUSE	71,424.00	69,224.00
926	BRIDGE	77	SWAN (SHEFFORD)	102,189.60	62,189.61
929	BRIDGE	79	BRIDGE STREET	235,200.00	220,500.00
931	BRIDGE	80	FAULKNERS	285,000.00	285,000.00
932	BRIDGE	81	EDDINGTON	1,141,920.00	1,129,120.00
934	BRIDGE	82	JESSATS	128,207.50	121,607.50
935	BRIDGE	821	KENNET (NEWBURY)	4,944,960.00	4,942,460.00
937	BRIDGE	824	BLACKBOYS RAILWAY	772,991.90	771,491.90
938	BRIDGE	83	HIDDEN	312,000.00	310,000.00
944	BRIDGE	84	LITTLE	384,300.60	381,300.60
948	BRIDGE	85	KINTBURY MILL	216,000.00	213,600.00
949	BRIDGE	852	COMPTON RAILWAY	244,800.00	239,800.00
950	BRIDGE	854	HAMPSTEAD NORREYS RAILWAY	295,776.00	295,776.00
951	BRIDGE	855	MARLSTON ROAD RAILWAY	195,216.00	184,216.00
953	BRIDGE	86	KINTBURY	147,278.40	146,278.40
954	BRIDGE	864	HAM MARSH	634,800.00	634,800.00
955	BRIDGE	87	KINTBURY LEVEL CROSSING	396,000.00	389,500.00

Bridges continued

Item	Item Type	Bridge Code	Bridge Name	Gross Replacement Cost GRC £	Depreciated Replacement Cost DRC £
956	BRIDGE	88	KINTBURY SOUTH DRAIN	179,088.00	161,588.00
957	BRIDGE	89	KINTBURY MIDDLE DRAIN	58,911.36	49,911.36
959	BRIDGE	90	KENNET - BARTON HOLT	134,400.00	130,150.00
961	BRIDGE	91	BARTON HOLT DRAIN	84,238.56	75,788.56
965	BRIDGE	95	DONNINGTON MILL	174,528.00	174,528.00
966	BRIDGE	96	LOCKETTS	238,719.80	235,719.80
974	BRIDGE	97	SHAW MILL	289,440.00	286,840.00
978	BRIDGE	973	STATION ROAD UNDERBRIDGE	1,290,240.00	1,277,740.00
985	BRIDGE	98	SHAW	289,440.00	286,940.00
996	BRIDGE	99	WHITE HOUSE	201,000.00	196,000.00
1176	BRIDGE	100	MIDDLE(NEWBURY)	551,346.70	548,346.70
			Sub Total £	**49,683,601.15**	**48,943,390.17**

Culverts

Item	Item Type	Culvert Code	Culvert Name	Gross Replacement Cost £	Depreciated Replacement Cost £
29	CULVERT	103	HAM (ARCH)	128,160.00	127,760.00
39	CULVERT	106	SMALL (THATCHAM)	68,879.04	68,879.04
45	CULVERT	111	WASING	23,424.00	20,974.00
78	CULVERT	121	KENNET DRAIN	138,000.00	138,000.00
83	CULVERT	1238	CUNNING MAN (326A)	96,480.00	94,080.00
84	CULVERT	1239	WELFORD FARM (331A)	67,200.00	66,400.00
89	CULVERT	1243	PRIORS MOOR (337A)	139,200.00	132,800.00
93	CULVERT	1254	CRAVEN CULVERT	24,576.00	22,376.00
98	CULVERT	1264	CROWN MEAD CULVERT	71,495.99	71,495.99
99	CULVERT	1265	WELFORD PARK CULVERT	103,680.00	102,980.00
145	CULVERT	1353	FIELD FARM CULVERT	96,000.00	95,500.00
172	CULVERT	141	CHURCH CULVERT	72,000.00	72,000.00
173	CULVERT	142	THE FORGE CULVERT	30,240.00	27,240.00
174	CULVERT	143	LOWER HENWICK FARM CULVERT	126,000.00	126,000.00
176	CULVERT	144	HENWICK MANOR CULVERT	126,000.00	126,000.00
180	CULVERT	145	GORDON ROAD CULVERT	126,000.00	126,000.00
182	CULVERT	1454	WOODHOUSE POND CULVERT	86,400.00	85,900.00
183	CULVERT	1455	DRAYTONS GULLY CULVERT	86,400.00	86,400.00
184	CULVERT	1456	ALDERNBRIDGE GULLY CULVERT	32,400.00	32,400.00

Culverts continued

Item	Item Type	Culvert Code	Culvert Name	Gross Replacement Cost £	Depreciated Replacement Cost £
185	CULVERT	1457	HANDPOST GULLY CULVERT	32,400.00	32,400.00
186	CULVERT	146	BOWLING GREEN CULVERT	86,400.00	86,400.00
187	CULVERT	1462	SHALFORD LODGE	168,960.00	168,960.00
190	CULVERT	1469	PADWORTH CULVERT	96,623.99	96,623.99
192	CULVERT	1472	NEWBURY LANE EAST	108,528.00	108,028.00
193	CULVERT	1473	WESTFIELDS	44,880.00	39,380.00
194	CULVERT	1474	MANOR CRESCENT	73,440.00	72,940.00
195	CULVERT	1475	BURRELL ROAD	230,400.00	230,400.00
238	CULVERT	155	WEST ILSLEY CULVERT	31,680.00	31,180.00
239	CULVERT	1553	LINDEN CULVERT	96,000.00	90,800.00
253	CULVERT	158	BARTON GABLES CULVERT	86,400.00	85,700.00
254	CULVERT	159	FLORENCE GARDENS F/P CULVERT SOUTH	25,920.00	25,720.00
258	CULVERT	160	FLORENCE GARDENS CW CULVERT WEST	25,920.00	25,920.00
260	CULVERT	161	FLORENCE GARDENS F/P CULVERT NORTH	25,200.00	25,000.00
264	CULVERT	162	FLORENCE GARDENS CW CULVERT EAST	86,400.00	86,400.00
267	CULVERT	1625	RED LANE CULVERT	46,656.00	46,456.00
268	CULVERT	1626	SPRING LANE CULVERT	32,400.00	29,900.00

Culverts continued

Item	Item Type	Culvert Code	Culvert Name	Gross Replacement Cost £	Depreciated Replacement Cost £
273	CULVERT	1632	BUSINESS PARK CULVERT EAST	4,800.00	3,300.00
277	CULVERT	1639	CALCOT ROW CULVERT	115,200.00	114,400.00
280	CULVERT	1642	PIPERS LANE CULVERT PROTECTION	240,000.00	240,000.00
289	CULVERT	1673	FIELD FARM CONVEYOR CULVERT	79,200.00	77,500.00
290	CULVERT	1674	MOATLANDS FARM CONVEYOR CULVERT	36,288.00	35,488.00
301	CULVERT	1685	FAIRHOLME FARM CULVERT	52,800.00	52,800.00
315	CULVERT	1730	THE MEAD	110,400.00	110,200.00
326	CULVERT	1787	EDDINGTON FLOOD CULVERT	192,000.00	192,000.00
377	CULVERT	1917	FORBURY HOUSE	15,360.00	15,360.00
382	CULVERT	1921	BRICKPLACE CULVERT	40,320.00	39,220.00
394	CULVERT	195	FORGE CULVERT	17,280.00	16,580.00
406	CULVERT	197	NANPIE CULVERT	4,800.00	4,800.00
417	CULVERT	198	FISH CULVERT	13,824.00	13,824.00
441	CULVERT	200	OXENHEATH CULVERT	1,800.00	1,800.00
464	CULVERT	2020	MIDGHAM CULVERT	101,376.00	98,976.01
506	CULVERT	2060	BENNETTSHILL COPSE	217,536.00	217,536.00
554	CULVERT	218	CALCOT	70,560.00	70,560.00
570	CULVERT	224	ALDERMASTON PIT EAST	30,240.00	29,540.00

Culverts continued

Item	Item Type	Culvert Code	Culvert Name	Gross Replacement Cost £	Depreciated Replacement Cost £
612	CULVERT	2365	HAM MARSH SURFACE WATER CULVERT.	192,000.00	192,000.00
638	CULVERT	2435	YEW TREE STABLES	51,840.00	49,840.00
723	CULVERT	278	PAICES CULVERT	3,600.00	3,600.00
726	CULVERT	285	DRAINHILL	93,120.00	93,120.00
733	CULVERT	320	BOXFORD ARCH	46,080.00	45,080.00
738	CULVERT	325	HOLYBROOK FARM SOUTH	97,584.00	89,384.00
740	CULVERT	329	ALDERMASTON PIT WEST	23,328.00	22,128.00
741	CULVERT	330	FORD BUSSOCK HILL	288,000.00	288,000.00
742	CULVERT	331	WELFORD LODGE	110,400.00	109,500.00
754	CULVERT	343	DUNSTON GREEN	73,080.00	72,330.00
763	CULVERT	352	MARLSTON WEST	36,720.00	36,720.00
765	CULVERT	354	ELM COTTAGE	59,760.00	59,260.00
781	CULVERT	370	MILL LANE (LAMBOURN)	53,406.72	53,406.72
793	CULVERT	383	DENFORD MILL DRAIN	86,400.00	79,600.00
797	CULVERT	387	OSMINGTON HOUSE	34,944.00	33,944.00
798	CULVERT	388	TEMPLETON	38,688.00	38,688.00
799	CULVERT	389	WALLINGTONS	23,760.00	23,760.00
806	CULVERT	396	SWAN (INKPEN)	22,464.00	22,464.00
824	CULVERT	515	NEWBURY LANE WEST	25,920.00	22,870.00
826	CULVERT	517	BOURNE COTTAGE	95,040.00	95,040.00

Culverts continued

Item	Item Type	Culvert Code	Culvert Name	Gross Replacement Cost £	Depreciated Replacement Cost £
853	CULVERT	579	BAGSHOT MILL EAST	53,760.00	45,760.00
854	CULVERT	580	BAGSHOT MILL WEST	45,792.00	40,892.00
859	CULVERT	6	ILSLEY ROAD CULVERT	691.20	691.20
866	CULVERT	617	MUDDY LOWER WAY LANE	144,000.00	144,000.00
885	CULVERT	656	HOLYBROOK FARM NORTH	91,200.00	86,000.00
890	CULVERT	665	COLTHROP	182,400.00	181,400.00
891	CULVERT	666	WASING LODGE	30,240.00	29,439.00
895	CULVERT	693	BOTTOMHOUSE FARM	48,816.00	45,616.00
903	CULVERT	71	CITY (LAMBOURN)	157,872.00	157,872.00
905	CULVERT	711	COUNCIL HOUSE HILL	28,800.00	22,799.00
914	CULVERT	725	FAIRFIELD	127,920.00	124,420.00
915	CULVERT	726	MAYFIELD FARM	50,688.00	48,188.00
916	CULVERT	728	DOWN HOUSE	67,680.00	67,680.00
917	CULVERT	73	CARTERS PIECE	101,952.00	100,952.00
918	CULVERT	74	BROOKSIDE (SHEFFORD)	88,128.00	86,428.00
927	CULVERT	78	WESTON MILL	57,600.00	57,200.00
933	CULVERT	819	CHAPEL ROW	51,840.00	51,840.00
946	CULVERT	846	NEWBURY CULVERT NORTH	203,688.00	203,688.00
947	CULVERT	847	NEWBURY CULVERT SOUTH	203,688.00	203,188.00
977	CULVERT	972	THEALE BY-PASS CULVERT	420,000.00	420,000.00

Culverts continued

Item	Item Type	Culvert Code	Culvert Name	Gross Replacement Cost £	Depreciated Replacement Cost £
979	CULVERT	974	STATION ROAD CULVERTS	21,600.00	21,600.00
987	CULVERT	981	HOGMOOR CULVERT	1,462,272.00	1,460,272.00
1178	CULVERT	24	FOXGLOVE CULVERT	97,968.00	97,468.00
			Sub Total £	**9,479,256.94**	**9,367,404.95**

Subways

Item	Item Type	Subway Code	Subway Name	Gross Replacement Cost £	Depreciated Replacement Cost £
33	SUBWAY	1033	LAMBOURN SUBWAY	471,888.00	471,188.00
35	SUBWAY	1035	HUTTON CLOSE SUBWAY	1,069,200.00	1,069,200.00
36	SUBWAY	1036	ROBIN HOOD ROUNDABOUT SUBWAY	3,153,600.00	3,151,600.00
150	SUBWAY	1367	HOWARD RD SUBWAY	334,080.10	334,080.10
151	SUBWAY	1368	GREENHAM RD SUBWAY 1	256,320.00	255,320.00
276	SUBWAY	1637	KINGS ROAD SUBWAY (NORTH)	331,200.00	317,200.00
622	SUBWAY	2391	GREENHAM ROAD SUBWAY 3	326,519.90	326,519.90
921	SUBWAY	749	NEWBURY SUBWAY 1	130,272.00	129,772.00
936	SUBWAY	822	KINGS ROAD SUBWAY (WEST)	159,969.60	159,969.60
275	SUBWAY	1636	KINGS ROAD SUBWAY (EAST)	772,800.00	771,600.00
621	SUBWAY	2390	GREENHAM ROAD SUBWAY 2	261,345.60	260,345.60
			Sub Total £	**7,267,195.20**	**7,246,795.20**

Footbridges

Item	Item Type	Footbridge Code	Footbridge Name	Gross Replacement Cost £	Depreciated Replacement Cost £
1	FOOTBRIDGE	1	WOKEFIELD COMMON FOOTBRIDGE	8,448.00	6,548.00
62	FOOTBRIDGE	1175	NORTHCROFT CANAL FOOTBRIDGE	153,600.00	103,600.00
63	FOOTBRIDGE	1176	SWAN FOOTBRIDGE	141,120.00	131,120.00
64	FOOTBRIDGE	1178	NORTHCROFT DITCH FOOTBRIDGE	305,136.00	305,136.00
66	FOOTBRIDGE	1186	RIVER LAMBOURN FOOTBRIDGE	312,480.00	309,980.00
67	FOOTBRIDGE	1187	CRANES MEADOW FOOTBRIDGE	9,120.00	9,120.00
70	FOOTBRIDGE	1190	PADWORTH MILL FOOTBRIDGE	23,424.00	23,424.00
71	FOOTBRIDGE	12	THATCHAM MOD BRIDGE	240,000.00	240,000.00
73	FOOTBRIDGE	1202	THEALE STATION FOOTBRIDGE	123,552.00	123,552.00
76	FOOTBRIDGE	1206	TIDMARSH FOOTBRIDGE	54,144.00	54,144.00
100	FOOTBRIDGE	1266	STREATLEY CAUSEWAY FOOTBRIDGE	55,680.00	55,680.00
123	FOOTBRIDGE	1327	GREENHAM MILL FOOTBRIDGE	482,400.00	476,400.00
143	FOOTBRIDGE	1349	TANNERY FOOTBRIDGE	33,456.00	31,956.00

Footbridges continued

Item	Item Type	Footbridge Code	Footbridge Name	Gross Replacement Cost £	Depreciated Replacement Cost £
146	FOOTBRIDGE	1356	OAKASH FARM FOOTBRIDGE	32,640.00	32,640.00
149	FOOTBRIDGE	1366	GREENHAM COURT FOOTBRIDGE	587,400.00	586,200.00
161	FOOTBRIDGE	1380	RUSHDENS FARM FOOTBRIDGE	28,800.00	28,800.00
162	FOOTBRIDGE	1381	BOTTOM LANE FOOTBRIDGE	31,680.00	31,680.00
164	FOOTBRIDGE	1393	PADWORTH MILL SOUTH FOOTBRIDGE	58,080.00	58,080.00
175	FOOTBRIDGE	1435	BRADFIELD HALL FOOTBRIDGE	46,080.00	46,080.00
197	FOOTBRIDGE	1478	STRONGROVE HILL FOOTBRIDGE	94,464.00	94,464.00
199	FOOTBRIDGE	148	ST. MARYS FOOTBRIDGE	144,000.00	143,500.00
200	FOOTBRIDGE	1480	MARSH GATE NORTH FOOTBRIDGE	7,200.00	7,200.00
235	FOOTBRIDGE	153	KIMBERHEAD FARM FOOTBRIDGE	59,817.61	59,817.61
236	FOOTBRIDGE	154	COMPTON MEADOW FOOTBRIDGE	15,552.00	15,552.00
241	FOOTBRIDGE	156	WALTON WAY FOOTBRIDGE	180,000.00	179,800.00

Footbridges continued

Item	Item Type	Footbridge Code	Footbridge Name	Gross Replacement Cost £	Depreciated Replacement Cost £
242	FOOTBRIDGE	1562	CHAPEL COTTAGES FOOTBRIDGE	23,232.00	23,032.00
249	FOOTBRIDGE	1575	ENBORNE STREET FOOTBRIDGE	41,472.00	40,872.00
250	FOOTBRIDGE	1576	INWOOD COPSE FOOTBRIDGE	59,904.00	59,904.00
255	FOOTBRIDGE	1598	WEIR FOOTBRIDGE	50,688.00	49,688.00
256	FOOTBRIDGE	1599	GREAT FISHERS FOOTBRIDGE	20,160.00	20,160.00
261	FOOTBRIDGE	1613	WERGS PLANK FOOTBRIDGE	10,368.00	9,968.00
266	FOOTBRIDGE	1624	BROCKS LANE FOOTBRIDGE EAST	10,368.00	10,368.00
271	FOOTBRIDGE	163	LOWER SLOPE END FOOTBRIDGE	15,552.00	15,552.00
272	FOOTBRIDGE	1631	HAMPSTEAD NORREYS FOOTBRIDGE	336,000.00	332,000.00
281	FOOTBRIDGE	165	KENTS DOWN GULLY FOOTBRIDGE	7,200.00	7,200.00
283	FOOTBRIDGE	1656	PITFIELD FOOTBRIDGE	45,360.00	45,360.00
284	FOOTBRIDGE	166	OLD SCHOOL HOUSE FOOT BRIDGE	5,184.00	5,184.00
285	FOOTBRIDGE	1661	POTASH FARM NORTH FOOTBRIDGE	12,096.00	12,096.00

Footbridges continued

Item	Item Type	Footbridge Code	Footbridge Name	Gross Replacement Cost £	Depreciated Replacement Cost £
286	FOOTBRIDGE	1662	BUSCOT FOOTBRIDGE	4,320.00	4,320.00
287	FOOTBRIDGE	167	GREEN LANE FOOTBRIDGE	1,080.00	-120.00
291	FOOTBRIDGE	1675	WELLMANS FOOTBRIDGE	51,840.00	48,940.00
292	FOOTBRIDGE	1676	BENNETSHILL FOOTBRIDGE	25,920.00	24,320.00
295	FOOTBRIDGE	1679	HILLFOOT FOOTBRIDGE	16,416.00	16,416.00
299	FOOTBRIDGE	1682	HEATH ROAD FOOTBRIDGE	11,232.00	11,232.00
302	FOOTBRIDGE	169	RUSHALL FOOTBRIDGE	6,000.00	6,000.00
305	FOOTBRIDGE	170	PAICES FOOTBRIDGE	15,552.00	15,552.00
307	FOOTBRIDGE	172	ARUNDEL FOOTBRIDGE	29,376.00	29,376.00
313	FOOTBRIDGE	1729	OLD SWAN (NEWBURY) FOOTBRIDGE	28,560.00	23,060.00
322	FOOTBRIDGE	175	KIFF FOOTBRIDGE	5,184.00	5,184.00
323	FOOTBRIDGE	176	KIFF GREEN FOOTBRIDGE	16,416.00	16,416.00
328	FOOTBRIDGE	179	BUTLERS FOOTBRIDGE	5,760.00	5,760.00
331	FOOTBRIDGE	180	PIGHTE FOOTBRIDGE	45,000.00	45,000.00
332	FOOTBRIDGE	181	BROOM FOOTBRIDGE	69,120.00	69,120.00

Footbridges continued

Item	Item Type	Footbridge Code	Footbridge Name	Gross Replacement Cost £	Depreciated Replacement Cost £
334	FOOTBRIDGE	1815	LONG MEADOW FOOTBRIDGE	28,800.00	18,796.00
335	FOOTBRIDGE	1816	FRIARS FORD FOOTBRIDGE	44,928.00	41,928.00
341	FOOTBRIDGE	184	BOARMOOR WOOD FOOTBRIDGE	10,800.00	10,800.00
343	FOOTBRIDGE	1854	TOMMYS BROW FOOTBRIDGE	23,760.00	23,560.00
345	FOOTBRIDGE	1859	THE FISHERY FOOTBRIDGE	38,016.00	38,016.00
351	FOOTBRIDGE	1874	BRIFF VIEW FOOTBRIDGE	22,032.00	22,032.00
352	FOOTBRIDGE	1875	REDHILL COPSE FOOTBRIDGE	42,600.00	42,600.00
353	FOOTBRIDGE	1876	GREAT PARK FOOTBRIDGE	42,048.00	42,048.00
355	FOOTBRIDGE	1879	IMPSTONE FOOTBRIDGE NORTH	13,824.00	13,824.00
356	FOOTBRIDGE	188	ENGLEFIELD FOOTBRIDGE	15,552.00	15,552.00
358	FOOTBRIDGE	1881	EDDINGTON MILL FOOTBRIDGE	15,360.00	15,360.00
360	FOOTBRIDGE	1883	MARSH COTTAGE FOOTBRIDGE	36,288.00	36,288.00

Footbridges continued

Item	Item Type	Footbridge Code	Footbridge Name	Gross Replacement Cost £	Depreciated Replacement Cost £
361	FOOTBRIDGE	1884	WATERCRESS FOOTBRIDGE	27,432.00	26,932.00
364	FOOTBRIDGE	189	HORNS CULVERT	10,080.00	10,080.00
367	FOOTBRIDGE	190	HORNS BOARDWALK	31,104.00	31,104.00
368	FOOTBRIDGE	1901	CASEY COURT FOOTBRIDGE	23,760.00	22,760.00
370	FOOTBRIDGE	191	BELL PITS 1	15,552.00	15,552.00
373	FOOTBRIDGE	1913	INKPEN COMMON FOOTBRIDGE	10,368.00	10,368.00
374	FOOTBRIDGE	1914	GREAT PLANTATION FOOTBRIDGE	4,752.00	4,752.00
375	FOOTBRIDGE	1915	WEAVERS FOOTBRIDGE	9,504.00	9,504.00
376	FOOTBRIDGE	1916	GODFREYS FOOTBRIDGE	26,880.00	26,880.00
378	FOOTBRIDGE	1918	BARRYMORES FOOTBRIDGE	30,672.00	30,172.00
380	FOOTBRIDGE	192	BELL PITS 2	15,552.00	15,552.00
381	FOOTBRIDGE	1920	FURZE PARK FOOTBRIDGE SOUTH	6,336.00	6,336.00
383	FOOTBRIDGE	1922	SKEW WHIFF FOOTBRIDGE	15,552.00	15,552.00
386	FOOTBRIDGE	1925	HOLT MANOR FOOTBRIDGE	10,368.00	10,368.00

Footbridges continued

Item	Item Type	Footbridge Code	Footbridge Name	Gross Replacement Cost £	Depreciated Replacement Cost £
387	FOOTBRIDGE	193	BURNTHOUSE FARM FOOTBRIDGE	15,552.00	15,352.00
413	FOOTBRIDGE	1976	BUNKERS HILL FOOTBRIDGE	4,800.00	4,800.00
414	FOOTBRIDGE	1977	SKINNERS GREEN FARM FOOTBRIDGE	15,552.00	15,552.00
415	FOOTBRIDGE	1978	LONG COPSE FOOTBRIDGE	11,232.00	11,232.00
416	FOOTBRIDGE	1979	HERRINGS COPSE EAST FOOTBRIDGE	11,232.00	11,232.00
418	FOOTBRIDGE	1980	CROCKHAM HEATH FOOTBRIDGE	8,640.00	7,140.00
419	FOOTBRIDGE	1981	HAMSTEAD PARK SLUICE FOOTBRIDGE	9,600.00	9,600.00
421	FOOTBRIDGE	1983	OLD LANE FOOTBRIDGE	15,033.60	15,033.60
423	FOOTBRIDGE	1985	OAKEN HEDGES FOOTBRIDGE	6,144.00	6,144.00
424	FOOTBRIDGE	1986	NORTHBROOK FOOTBRIDGE	120,960.00	120,960.00
439	FOOTBRIDGE	2	ARUNDEL WEST FOOTBRIDGE	20,736.00	20,736.00
443	FOOTBRIDGE	2001	ELMHURST FARM FOOTBRIDGE	14,688.00	14,488.00

Footbridges continued

Item	Item Type	Footbridge Code	Footbridge Name	Gross Replacement Cost £	Depreciated Replacement Cost £
444	FOOTBRIDGE	2002	OSGOODS FARM FOOTBRIDGE	14,688.00	14,488.00
452	FOOTBRIDGE	201	PADWORTH COMMON FOOTBRIDGE	3,600.00	3,600.00
458	FOOTBRIDGE	2015	WESTROP FOOTBRIDGE	12,960.00	11,060.00
466	FOOTBRIDGE	2022	EIGHT ACRE FOOTBRIDGE	15,552.00	15,552.00
471	FOOTBRIDGE	2027	WOOLHAMPTON HALT FOOTBRIDGE	21,504.00	21,504.00
482	FOOTBRIDGE	2037	HILLFOOT WEST FOOTBRIDGE	15,552.00	15,552.00
485	FOOTBRIDGE	204	ASHMOORE GREEN FOOTBRIDGE	10,368.00	10,368.00
490	FOOTBRIDGE	2045	STREATLEY CAUSEWAY	1,624,800.00	1,624,800.00
495	FOOTBRIDGE	205	LONG FOOTBRIDGE	5,184.00	5,184.00
498	FOOTBRIDGE	2052	LINLEY SHAW FOOTBRIDGE	8,640.00	8,640.00
500	FOOTBRIDGE	2054	GREAT FISHERS NORTH FOOTBRIDGE	13,824.00	13,824.00
502	FOOTBRIDGE	2056	FISHERMANS DRAIN FOOTBRIDGE	17,280.00	17,280.00
503	FOOTBRIDGE	2058	LOCKRAM FOOTBRIDGE	10,368.00	10,368.00

Footbridges continued

Item	Item Type	Footbridge Code	Footbridge Name	Gross Replacement Cost £	Depreciated Replacement Cost £
507	FOOTBRIDGE	2061	LONGMOOR DRAIN FOOTBRIDGE	8,640.00	8,140.00
509	FOOTBRIDGE	2063	PERRINS FARM FOOTBRIDGE	20,064.00	20,064.00
512	FOOTBRIDGE	2066	ADMIRALS COPSE FOOTBRIDGE	15,552.00	15,552.00
516	FOOTBRIDGE	207	VAUXHALL FOOTBRIDGE	5,760.00	5,760.00
520	FOOTBRIDGE	2073	CANNON BRIDGE	74,520.00	74,020.00
521	FOOTBRIDGE	208	COMMON FOOTBRIDGE	6,624.00	6,624.00
524	FOOTBRIDGE	210	LITTLE DEANS FOOTBRIDGE	13,824.00	13,824.00
525	FOOTBRIDGE	211	BENHAM FOOTBRIDGE	12,960.00	12,960.00
528	FOOTBRIDGE	2114	WALKERS SHAW FOOTBRIDGE	10,368.00	10,168.00
531	FOOTBRIDGE	212	WEST FOOTBRIDGE	10,440.00	10,440.00
534	FOOTBRIDGE	214	PADWORTH FOOTBRIDGE	5,184.00	5,184.00
544	FOOTBRIDGE	215	JACOBS FOOTBRIDGE	20,736.00	20,736.00
559	FOOTBRIDGE	2192	HOLLY FARM FOOTBRIDGE	27,648.00	27,647.00
568	FOOTBRIDGE	222	BRIFF FARM FOOTBRIDGE	5,760.00	5,760.00

Footbridges continued

Item	Item Type	Footbridge Code	Footbridge Name	Gross Replacement Cost £	Depreciated Replacement Cost £
569	FOOTBRIDGE	223	SADGROVE FARM FOOTBRIDGE	31,737.60	31,737.60
571	FOOTBRIDGE	2246	FURZE PARK FOOTBRIDGE NORTH	12,096.00	12,096.00
579	FOOTBRIDGE	226	BRIFF COPSE FOOTBRIDGE	34,560.00	34,560.00
592	FOOTBRIDGE	23	CHURCH LANE FOOTBRIDGE	13,824.00	13,824.00
598	FOOTBRIDGE	2330	RAVENSWING FOOTBRIDGE	10,368.00	10,368.00
599	FOOTBRIDGE	2331	UPPER MOORS GULLY FOOTBRIDGE	10,368.00	10,368.00
601	FOOTBRIDGE	2348	ROUND COPSE FOOTBRIDGE	10,368.00	10,368.00
603	FOOTBRIDGE	2350	SMITHCROFT COPSE FOOTBRIDGE	31,680.00	31,680.00
611	FOOTBRIDGE	2364	DUNSTON PARK FOOTBRIDGE	12,000.00	10,000.00
628	FOOTBRIDGE	2418	DEVELOPER FOOTBRIDGE	33,264.00	33,264.00
629	FOOTBRIDGE	2419	PLANTATION FOOTBRIDGE	33,264.00	33,264.00
631	FOOTBRIDGE	2420	HARTSHILL FOOTBRIDGE	33,264.00	32,763.99

Footbridges continued

Item	Item Type	Footbridge Code	Footbridge Name	Gross Replacement Cost £	Depreciated Replacement Cost £
648	FOOTBRIDGE	246	SWAN WALK	69,888.00	69,888.00
659	FOOTBRIDGE	247	FENS FOOTBRIDGE	10,080.00	9,780.00
670	FOOTBRIDGE	248	WORKHOUSE FOOTBRIDGE	9,504.00	9,504.00
674	FOOTBRIDGE	251	HELL FOOTBRIDGE	3,600.00	3,600.00
675	FOOTBRIDGE	252	OLD HAT FOOTBRIDGE	12,096.00	12,096.00
677	FOOTBRIDGE	254	CATMORE COPSE NORTH FOOTBRIDGE	8,640.00	6,640.00
679	FOOTBRIDGE	255	CATMORE COPSE SOUTH	10,368.00	8,368.00
681	FOOTBRIDGE	256	HIGH TREE FOOTBRIDGE	10,296.00	9,096.00
683	FOOTBRIDGE	2562	BALSDON FARM FOOTBRIDGE	24,576.00	23,076.00
684	FOOTBRIDGE	2564	ARUNDEL COPSE FOOTBRIDGE	20,736.00	20,736.00
685	FOOTBRIDGE	2565	KINGS COPSE FOOTBRIDGE	11,750.40	11,750.40
688	FOOTBRIDGE	2568	FOSTERS FOOTBRIDGE	15,552.00	15,552.00
692	FOOTBRIDGE	2571	RECREATION FOOTBRIDGE	12,960.00	12,960.00
693	FOOTBRIDGE	2572	TRASH FOOTBRIDGE	14,688.00	14,488.00
699	FOOTBRIDGE	2579	LITTLE SALTS FOOTBRIDGE	19,344.00	19,344.00

Footbridges continued

Item	Item Type	Footbridge Code	Footbridge Name	Gross Replacement Cost £	Depreciated Replacement Cost £
702	FOOTBRIDGE	2581	KENNEL FOOTBRIDGE	15,552.00	15,552.00
710	FOOTBRIDGE	265	FLORAL FOOTBRIDGE	5,280.00	3,579.00
711	FOOTBRIDGE	266	OLD FISH FOOTBRIDGE	7,560.00	7,560.00
712	FOOTBRIDGE	267	KENTON FOOTBRIDGE	15,552.00	15,552.00
713	FOOTBRIDGE	268	ALDERS NO. 1	20,736.00	20,736.00
714	FOOTBRIDGE	269	ALDERS NO. 2	20,736.00	20,736.00
715	FOOTBRIDGE	270	ROMAN FOOTBRIDGE	15,552.00	15,352.00
717	FOOTBRIDGE	272	MAY HOUSE SOUTH FOOTBRIDGE	15,552.00	15,552.00
722	FOOTBRIDGE	277	LOWER HENWICK FOOTBRIDGE	15,552.00	15,552.00
749	FOOTBRIDGE	338	THORNFORD FOOTBRIDGE	35,856.00	30,856.00
771	FOOTBRIDGE	360	BUCKLEBURY FORD FOOTBRIDGE	34,840.32	32,340.32
809	FOOTBRIDGE	399	PIG FOOTBRIDGE	14,688.00	14,388.00
810	FOOTBRIDGE	4	PIBWORTH FOOTBRIDGE	13,824.00	13,824.00
817	FOOTBRIDGE	506	BLOSSOMS END FOOTBRIDGE	15,552.00	13,352.00
818	FOOTBRIDGE	507	BROOM COPSE FOOTBRIDGE	12,000.00	9,500.00

Footbridges continued

Item	Item Type	Footbridge Code	Footbridge Name	Gross Replacement Cost £	Depreciated Replacement Cost £
819	FOOTBRIDGE	508	FURTHER MOOR COPSE FOOTBRIDGE	53,040.00	52,540.00
821	FOOTBRIDGE	510	OXLEYS COPSE FOOTBRIDGE	30,576.00	30,576.00
822	FOOTBRIDGE	511	MOOR COPSE FOOTBRIDGE	15,552.00	15,552.00
823	FOOTBRIDGE	512	HORSE MOOR FOOTBRIDGE	45,552.00	45,552.00
825	FOOTBRIDGE	516	CALCOT MILL FOOTBRIDGE	48,600.00	38,899.00
829	FOOTBRIDGE	520	CLAYHILL FOOTBRIDGE	24,960.00	23,560.00
832	FOOTBRIDGE	523	GREYFIELD FOOTBRIDGE	5,184.00	3,384.00
835	FOOTBRIDGE	526	WHITES LANE FOOTBRIDGE	34,560.00	34,560.00
844	FOOTBRIDGE	564	FISHERMANS COTTAGE NORTH FOOTBRIDGE	23,040.00	23,040.00
845	FOOTBRIDGE	565	FISHERMANS COTTAGE MIDDLE FOOTBRIDGE	6,912.00	3,512.00
846	FOOTBRIDGE	566	FISHERMANS COTTAGE SOUTH FOOTBRIDGE	22,176.00	22,176.00
847	FOOTBRIDGE	569	WASHWATER FOOTBRIDGE	19,676.16	18,676.16

Footbridges continued

Item	Item Type	Footbridge Code	Footbridge Name	Gross Replacement Cost £	Depreciated Replacement Cost £
848	FOOTBRIDGE	570	WATERLOO FOOTBRIDGE	4,800.00	4,800.00
861	FOOTBRIDGE	610	IMPSTONE FOOTBRIDGE	13,824.00	13,824.00
863	FOOTBRIDGE	612	MAYMEAD FOOTBRIDGE	22,032.00	22,032.00
864	FOOTBRIDGE	613	MOSS FOOTBRIDGE	24,480.00	24,480.00
867	FOOTBRIDGE	618	CROSSWAYS FOOTBRIDGE	26,352.00	24,152.00
868	FOOTBRIDGE	619	WOODSPEEN WEIR FOOTBRIDGE	48,000.00	41,800.00
869	FOOTBRIDGE	620	WOODSPEEN DRAIN FOOTBRIDGE	15,120.00	15,120.00
870	FOOTBRIDGE	621	WATERMILL FOOTBRIDGE NORTH	8,412.48	8,412.48
871	FOOTBRIDGE	622	WATERMILL FOOTBRIDGE SOUTH	8,412.48	8,412.48
886	FOOTBRIDGE	658	WILLOW TREE FOOTBRIDGE	20,424.00	20,424.00
888	FOOTBRIDGE	663	RIVER BARN FOOTBRIDGE NORTH	41,472.00	41,472.00
894	FOOTBRIDGE	692	WINTERBOURNE FOOTBRIDGE	10,944.00	10,894.00
901	FOOTBRIDGE	704	CHAMBERHOUSE FARM FOOTBRIDGE	57,600.00	57,600.00

Footbridges continued

Item	Item Type	Footbridge Code	Footbridge Name	Gross Replacement Cost £	Depreciated Replacement Cost £
910	FOOTBRIDGE	721	CHURCH FOOTBRIDGE	27,648.00	27,048.00
912	FOOTBRIDGE	723	HUNGERFORD FISHERY FOOTBRIDGE	66,720.00	66,720.00
919	FOOTBRIDGE	740	ST LAWRENCES EAST FOOTBRIDGE	65,116.80	65,116.80
941	FOOTBRIDGE	835	MARSH GATE SOUTH FOOTBRIDGE	105,312.00	104,412.00
942	FOOTBRIDGE	836	HOPGRASS FARM SOUTH FOOTBRIDGE	87,744.00	87,744.00
943	FOOTBRIDGE	837	HOPGRASS FARM NORTH FOOTBRIDGE	105,312.00	105,312.00
958	FOOTBRIDGE	9	POT KILN FOOTBRIDGE	15,552.00	15,552.00
			Sub Total £	**8,920,933.45**	**8,757,476.44**

Summary

Bridges	49,683,601.15	48,943,390.17
Culverts	9,479,259.94	9,367,404.95
Subways	7,267,195.20	7,246,795.20
Footbridges	8,920,933.45	8,757,476.44
Totals £	**75,350,989.74**	**74,315,066.76**

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Street Lighting Asset Valuation 2010/11

Columns

The rate includes the cost of the column, lantern, lamp and cable, and the cost of supply and installation.

Item	No of Units	Rate £	GRC £
Columns up to 6.0m	8,439	917	7,738,563
Columns up to 8.0m	1,854	1,392	2,580,768
Columns up to 10.0m	1,558	1,416	2,206,128
Columns up to 12.0m	328	2,762	905,936
Subway units	157	450	70,650
High-masts	0	11,000	-
Heritage columns	249	2,000	498,000
Feeder Pillar			
Small	78	450	35,100
Medium	0	900	-
Large	0	2,000	-

Illuminated Bollards

The rate includes the cost of the bollard, lamp and cable and the cost of supply and installation.

Item	No of Units	Rate £	GRC £
Illuminated bollards	640	800	512,000

Illuminated Signs

The rate includes the cost of the post, foundation, lantern, lamp, sign plate, cabling, but excludes any reinstatement. The rate includes for supply and installation.

Item	No of Units	Rate £	GRC £
Externally Illuminated signs			
Sign face up to 600mm	0	600	-
Sign face 600 to 1200mm	1736	800	1,388,800
Sign face up to 0.75m2	0	600	-
Sign face 0.75 to 2.00m2	0	800	-
Sign face 2.00 to 3.00m2	0	1,200	-

Street Lighting Asset Valuation 2010/11

Illuminated Signs continued

The rate includes the cost of the post, foundation, lantern, lamp, sign plate, cabling, but excludes any reinstatement. The rate includes for supply and installation.

Item	No of Units	Rate £	GRC £
Sign face 3.00 to 4.00m	0	1,500	-
Sign face 4.00 to 6.00m	0	2,000	-
Internally illuminated signs			
Sign face up to 900mm	0	1,200	-
Total Gross Replacement Cost (GRC)			**£15,935,945**
Depreciation			**£398,398**
Total Depreciated Replacement Cost			**£15,537,547**

*** This Highways Infrastructure Assets data will not be audited in 2010-11 ***

<Council Name>
Additional Information - Highways Infrastructure (21)
31-Mar-11

Highways Infrastructure Assets

Refer to the L Pack guidance and the WGA timetable paper *"Accounting for Highways Infrastructure Assets in the Local Authority Sector on a Depreciated Replacement Costs Basis: Interim Accounting Arrangements for the Period up to 2012-13".* This paper is available on the WGA page of the HM Treasury; DCLG; Scottish Government; and Welsh Assembly Government websites, and is based on the decisions made by the CIPFA Project Implementation Steering Group (PISG).

The original timetable required an audit review of GRC data in the 2010-11 Return. However, given the resources and cost involved in auditing the data in this era of substantially tighter public spending, the first audit review has been delayed until the more complete and full dry run year, 2011-12. This should not detract from the worth of the Highways Infrastructure work and the improved services and efficiency savings that will result. We stress the importance of providing the data below to the same quality that would have been given had the audit review been going ahead, given the size and complexity of the task, and so that the momentum of the work is maintained.

All estimates should be calculated on the basis set out in the CIPFA *Code of Practice on Transport Infrastructure Assets - Guidance to Support Asset Management, Financial Management and Reporting* (published March 2010).

Web-links:

Code and information on it's development (CIPFA): http://www.cipfa.org.uk/pt/infrastructure/index.cfm

Supporting materials and spreadsheet calculation templates (CIPFA): http://www.cipfa.org.uk/pt/infrastructure/support.cfm

WGA timetable paper and guidance (HM Treasury): http://www.hm-treasury.gov.uk/wga_guidance_index.htm

IMPORTANT: Figures should be rounded to **thousands (£'000s)**, and the 2010-11 figures in PP&E that feed into the Balance Sheet should still be Historic Cost in the L Pack and Statement of Accounts. Columns D, G and J **MUST** have a value in order for the Pack validations to pass. If you are a body that does not have Highways Infrastructure, or if you are unable to obtain the data to complete certain mandatory cells, please enter zeros in order for your Pack to validate. Please provide an explanation to support the entry of zero balances.

This is for information purposes only, and is to capture the progress being made by local authorities on revaluing their Highways Infrastructure Assets for Gross Replacement Cost (GRC) and Depreciated Replacement Cost (DRC). Please be aware that in many cases local authority staff outside of the central finance team, such as asset management and engineering staff, are undertaking this work.

DATA REQUIRED: GRC, DRC & lands data estimates

[These figures will be used as prior year comparatives in the 2011-12 full dry-run year (para 15 & 16 of WGA timetable paper)]

Highway Asset Types: *(Level 1 categories defined in Table 4.1 "Classification of highway assets", para 4.2.3, pgs 24 to 26, of the transport Code)*	**Gross Replacement Cost (GRC) estimate** £'000	**Underlying calculation basis (select from drop-down list)**	**GRC less Depreciation (DRC)**		**Estimated percentage of work completed** %
			Depreciation £'000	**DRC estimate** £'000	
Carriageway	1,152,082			-	
Footways + cycletracks	115,114			-	
Structures[1] (DRC not required)*	69,233			-	
Lighting[1]	15,936			-	
Traffic management[1]	7			-	
Street furniture[1]	10			-	
Land[1]			NA	-	
Total	1,352,382				

Rounding Validation check: ***You have reported more than £1 bn of GRC data, please ensure this is correct, and that you have not failed to round to thousands.***

1 These values are not populated from this spreadsheet

* Structures depreciation data is not required in 2010-11 as the Structures DRC toolkit was not available at the time of preparation of the L Pack.

Please provide an explanation of the plans and progress on the valuation work, including any comments you have in respect of the above. (Please keep within the space provided):

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APPENDIX B

Equality Impact Assessment – Stage One

Name of item being assessed:	Highway Transport Asset Management Plan
Version and release date of item (if applicable):	Version 1
Owner of item being assessed:	Melvyn May
Name of assessor:	Melvyn May
Date of assessment:	25 January 2012

1. What are the main aims of the item?
For Members to adopt the Highway Asset Management Plan 2012 – 2015. To maintain the condition of the highway network at defined condition levels (service levels) using timely treatments at minimum cost in accordance with the asset management principles as publicised in national guidance.

2. Note which groups may be affected by the item, consider how they may be affected and what sources of information have been used to determine this. (Please demonstrate consideration of all strands – age; disability; gender reassignment; marriage and civil partnership; pregnancy and maternity; race; religion or belief; sex; sexual orientation)

Group Affected	**What might be the effect?**	**Information to support this.**
All Users	The proposal to publicise the Council's asset management framework (Highway Asset Management Plan) will have little or no impact on highway users.	N/A

Further comments relating to the item:
None

3.	**Result** (please tick by double-clicking on relevant box and click on 'checked')
☐	**High Relevance** - This needs to undergo a Stage 2 Equality Impact Assessment
☐	**Medium Relevance** - This needs to undergo a Stage 2 Equality Impact Assessment
☐	**Low Relevance** - This needs to undergo a Stage 2 Equality Impact Assessment
☒	**No Relevance** - This **does not** need to undergo a Stage 2 Equality Impact Assessment

For items requiring a Stage 2 equality impact assessment, begin the planning of this now, referring to the equality impact assessment guidance and Stage 2 template.

4. Identify next steps as appropriate:	
Stage Two required	
Owner of Stage Two assessment:	
Timescale for Stage Two assessment:	
Stage Two not required:	**Not Required**

Signed: Melvyn May **Date:** 25/01/12