

## TRANSPORT ASSET MANAGEMENT PLAN & PROGRAMME

### Background

1. Reliable asset management information is key to the effective stewardship of the highway. It informs process, decision-making, and the development of short and longer term maintenance strategies that reflect customer needs and sound value-management. Its prudent and timely use drives operational improvements and the efficient use of funding, whilst managing the Council's exposure to risk and third party claims.
2. The Council's Transport Asset Management Plan (TAMP) is a 'live' document and is continually evolving. The document was approved in its original form by Cabinet in March 2008. The TAMP is central to the identification of highway maintenance strategies, and the development of the new Transport Services contract. The TAMP contains both asset and financial data that enables more advanced forward planning, improved budget management and improved working practices. Crucially, in an era of severe budget cuts it provides a means of identifying where limited funding may be targeted to best effect.
3. The TAMP spans all highway maintenance activities and all types of highway infrastructure including roads, footways, bridges, street lighting, traffic signals and so forth, Although, the document focuses on the asset groups where the majority of the maintenance budget is spent, information on other asset groups is increasingly being collected and will be incorporated into the document as it develops.

### Network Condition

4. The fragility of the highway network is evidenced by the effects of last years harsh winter, with a 3-fold increase in reported potholes, many of them hazardous and requiring urgent attention. We estimate the winter has caused in excess of £6 million accelerated deterioration in Oxfordshire's highway network. In addition, £3.5 million of damage was caused by drought and heat in both 2004 and 2006 respectively. Two years ago, Oxfordshire suffered unprecedented flooding- we have doubled the budget for drainage improvements since then and effectively quadrupled our expenditure on drainage over the last 10 years. We have also been investing heavily in programmes of street lighting column replacement, bridge works, and in improving the skidding resistance of our busiest roads.
5. The overall condition of the Council's network may be expressed for each road category as 'the percentage of those roads where structural maintenance should be considered' (as defined by national performance indicators):

Road Category	2010/11	2009/10	Comment
A roads	4.3%	4.6%	0.3% improvement
B roads	8.1%	7.6%	0.5% deterioration
C roads	10.3%	9.5%	0.8% deterioration
U roads	13.1%	11.6%	1.5% deterioration

6. With the exception of A roads, the condition of all categories deteriorated during 2009/10. This may be attributed primarily to the effects of the harsh winter; A roads are stronger and in better overall condition – they are therefore more resilient to adverse weather. In contrast, unclassified roads make up half of the County’s road network – they are comprised of mainly thin layers, and many have poor drainage, so they are very susceptible to damage caused by freeze-thaw conditions.

	2010/11	2009/10	Comment
Busiest Footways	9%	6%	3% deterioration

7. The deterioration may again be attributed primarily to the harsh winter, but also because funding has been diverted from footways in the last 3 years to enable costly schemes such as High Street to progress, as well as more drainage improvement schemes. The less busy footways have also deteriorated.

### **Structural Maintenance**

8. Structural maintenance activities include carriageway and footway resurfacing and reconstruction, surface dressing, bridge strengthening, street lighting column replacement and drainage improvements. This work is primarily paid from capital.
9. Value-engineering has increasingly been used to qualify and prioritise work, and in assessing the whole life costs of alternative treatments. The value-engineering approach often means that more substantial treatments are specified to ensure longevity of repair and reduced overall disruption to road users. This means that schemes can cost more initially (but not always) but with the benefit of savings later on. However, the timing of the work is most fundamental, in order to ensure that interventions take place before the onset of more serious and costly deterioration.

### **Financial/ Condition Modelling**

10. Analyses have been carried out to predict the effects of various levels of financial investment on the structural condition of the road network. Other relevant data including accidents, traffic and highway claims have also been considered in identifying and prioritising maintenance work. A variety of budget/condition scenarios have been modelled which have been used to inform the budget process to date, although it is not productive to develop these further until the scale of the budget cuts is confirmed. However, cuts in maintenance capital expenditure will have a variety of consequences:
- The County Council has a statutory responsibility to maintain highways in a safe condition.
  - The more the structural maintenance budget is reduced, the more we will store up problems for the future. The life of roads can be extended relatively economically if repairs are carried out in time. Conversely, delays in applying treatments can lead to rapid deterioration and a large increase in the cost of repair ie the difference between a surface intervention and reconstruction. This can cost between 5 and 10 times as much.
  - There may be a tendency to undertake repeated make-shift treatments and considerably more reactive maintenance (potholes and patching) that will cost the Council much more in the medium to long term.

- Budgets for attending to potholes and other safety defects will need to be increased, along with the workforce to attend to them. This work is funded from revenue.
  - The skidding resistance of our busiest roads may worsen significantly if maintenance capital is reduced. Although road casualty accidents have decreased in recent years the number of accidents occurring in wet conditions has not. It is in these conditions that slippery roads can contribute to the potential for accidents.
  - The state of our roads and footways remains a major cause of public dissatisfaction.
  - In 2010/11, over 50% of the structural maintenance budget was allocated to carriageways, with the remainder being spent mainly on footways, bridges, drainage improvements, and street lighting column replacement. It is envisaged that carriageway integrity will generally take precedence over these other activities if budgets are severely limited.
  - It is likely that 3<sup>rd</sup> party highway claims will increase as the network deteriorates- potholes and footway trips are the main cause. Accidents on slippery roads due to polished surfaces or ice are also issues.
11. From the analyses performed to date, it is apparent that it will take 2 or 3 years for budget cuts to be reflected in a significant worsening of overall carriageway condition. However, if funding is not promptly reinstated then a trend of accelerating deterioration takes place that will be very difficult to arrest. For example, the results show that even if budgets are fully reinstated following 5 years of 50% cuts, that it would then cost an *additional* £14 million of capital investment to return roads to their current condition over the following 5 years. There would also be an additional £8 million of pothole repairs over the 10 year period compared to a 'No cuts' scenario and a very poor quality road network throughout this time, with greatly increased public dissatisfaction, safety issues and claims. It should also be noted that other areas of structural maintenance would be severely cut back including footways, bridges, street lighting and drainage improvements (all capital).

### **Coal Tar and Derivatives**

12. We are currently assessing the implications of new guidance relating to the exposure, treatment and disposal of this hazardous waste. We have allowed for some coring and testing in our forward budgets. However, there is a high chance that coal tar will be identified at many of the locations in our works programme, as this is a countywide issue. Where it is detected we may have to recycle material on site, or remove it to special treatment facilities or to approved disposal sites. Consequently, apart for the coring and testing, dealing with the coal tar could have significant costs. The financial implications will be clearer after further site investigation work and following an assessment of suitable on-site recycling methods.

### **Systems**

13. A number of highway management systems are used currently to manage highway data and resources. These are vital for effective asset management and for responding efficiently to customer enquiries. Geographical information systems (GIS) are being used increasingly to analyse asset inventory, condition information, and other data, and to display the information against map backgrounds for greater interaction of information and easier interpretation of results.

## **Inventory**

14. The Council's highway network comprises over one million individual items of apparatus. A detailed knowledge of the location, type and condition of the highway inventory is vital to the establishment of appropriate service standards and efficient maintenance regimes.
15. A project plan and specification has now been produced and processes put in place to survey key elements of highway asset inventory. Furthermore, it is a main objective of the new Transport Services contract to update the inventory as part of the routine day to day business to ensure data is current and easily interrogated. Until recently, the majority of existing inventory information was held in databases in tabular form and not represented spatially. Work recently undertaken by the asset management team has addressed this prior to the start of the new Transport Services contract. We therefore now have a framework of inventory and attributes visible on GIS that can be built on as work is routinely undertaken under the new arrangements.

## **Highway Valuation**

16. From this year, it is a requirement of central government that highway authorities collate sufficient highway inventory information for the submission of progressively accurate annual calculations of highway network net present values, gross replacement values and maintenance backlog. This will require more regular and detailed surveys of highway assets, and rural footways in particular. The information gathered will also enable life cycle plans to be created for sections of the network and for various assets so that treatment types and intervention periods can be optimised. The collection of this information is subject to national audit.

## **Service Levels**

17. A series of Asset Management Service Standards has recently been developed and annexed to the TAMP. The Service Standards contain Asset Management priorities, objectives, service levels, performance targets, work plans and risk register that together form a statement of the key areas of asset management focus and development. This work has helped shape the vision for the period following the implementation of the new contract.

## **Route Hierarchy**

18. The County Council is responsible for over 4,500 kilometres of carriageway and a similar length of footway. An exercise has recently been undertaken to re-categorise these routes according to the type and volume of traffic they carry and by their relative importance to one another. This exercise has enabled a modified network hierarchy to be established that may be used to inform budgetary decisions and treatment types, and to prioritise activities such as the frequency of statutory safety inspections and, potentially, winter maintenance gritting routes.

## **Safety Inspections**

19. In its role as Highway Authority, Oxfordshire County Council has a statutory duty to maintain the network in a safe condition. Failure to do so can lead to accidents, third party claims and other significant liability and reputational issues.

20. A revised policy for Statutory Safety Inspections is currently being produced that aligns with the revised network hierarchy and new operational processes. The new policy and practice will assist the Council in managing resources and risk, and provide a robust mechanism for claims defence. The aim is to have the new policy approved and in place for the new financial year.

### **Customer Satisfaction**

21. There is a strong correlation between customer satisfaction and the condition of local roads. In a 2009 survey, 58% of respondees said they were dissatisfied with the condition of roads and pavements in Oxfordshire (NHT). More recent research work suggests that more than 60% of customers are dissatisfied with a Council's overall service when more than 12% of its local roads are defective or have poor surface condition (Seasig). In Oxfordshire, 13.1% of local roads are currently defective, and this is likely to fall to below 20% if the structural maintenance budget is cut by £3m per year over the next 5 years.

### **TAMP Development**

22. The original TAMP provided the first comprehensive account of the Council's main highway assets with actions identified for the ongoing development of prudent highway stewardship and efficient asset management practice. Since then, a number of strategies for better managing our highway assets have been progressed and a new contract and establishment put in place that enables more joined-up working. We have considerably developed our knowledge of highway assets and made consistent overall improvements to carriageway and footway condition across the County. Our level of highway inventory information has been dramatically increased and financial/condition models and scenarios produced. Our systems functionality and work processes have been developed and we now have access to much more intuitive data for asset management planning, for operational performance monitoring and for managing risk. Undoubtedly, asset management is a tool that must be increasingly utilised to make best use of available budgets, and to limit the effects of under-funding as best we can. This presents a considerable challenge given the size of the network and its fragility.

23. The next stage of TAMP development will be to incorporate a series of annexes into the main body of the document and to review and update it as necessary. Additional financial/condition modelling will be progressed when forward budgets are confirmed. Decisions will then be made as to how the funds will be assigned to the various maintenance activities.

### **Programme**

24. Draft programmes for carriageway and footway schemes for 2011/12 have been included in Annex A. The programmes are provisional. They may be affected by decisions that affect the overall structural maintenance budget and can only be confirmed when funds are clarified and winter affects known. The schemes form part of a 2 year rolling programme of maintenance work. Provisional forward programmes of work for Bridges and Drainage Improvements are also attached. These will also be affected by budget cuts.

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