

Cambridgeshire County Council

Strategy for Highway Asset Management

1. Introduction

- 1.1 Cambridgeshire County Council recognises the importance of its highway infrastructure and how an effectively maintained and managed network contributes to the achievement of its corporate goals. It understands that effective Asset Management is a platform to deliver clarity around standards and levels of service, and to make best use of its available resources.
- 1.2 The Highway Asset Management Strategy sets out how the County Council will best manage the Highway Network taking into consideration customer needs, local priorities, asset condition and best use of available resources.
- 1.3 This document presents the Council's Strategy for the management of the Council's highway assets as at April 2014 and allows planning for the longer term.
- 1.4 It has been produced following the assessment of customer needs, local priorities and asset condition. It also ensures that both short and long term needs are appropriately considered, whilst delivering a minimum whole life cost approach to our highway assets.
- 1.5 The Strategy will be used to inform the highway maintenance schemes that are to be implemented within the Council's Transport Delivery Plan. Whilst selection of these schemes will be driven predominantly by condition data, challenge from local members is vital to ensure that local priorities are incorporated into delivery plans.
- 1.6 This Strategy covers all highway maintenance activities funded by revenue and capital streams. The Strategy does not directly relate to capital improvements but where linkages exist these are identified.
- 1.7 The Highway Asset Management Strategy will be used to inform priorities in the Business Planning Process and will support the continuous improvement of highway asset management.

2. Asset Management Policy and Framework

- 2.1 The Highway Asset Management Strategy sets out how the Asset Management Policy will be achieved. The Policy is a high level document that confirms the County Council's commitment to Highway Asset Management and demonstrates how an Asset Management approach aligns with the Authority's corporate vision and strategic/LTP objectives.

- 2.2 The Highway Asset Management Strategy is one of the key strategic documents relating to the County Council's Highway Services. The Asset Management Framework below encompasses these key documents and illustrates the local and national influences and dependencies that are in place to deliver these services.

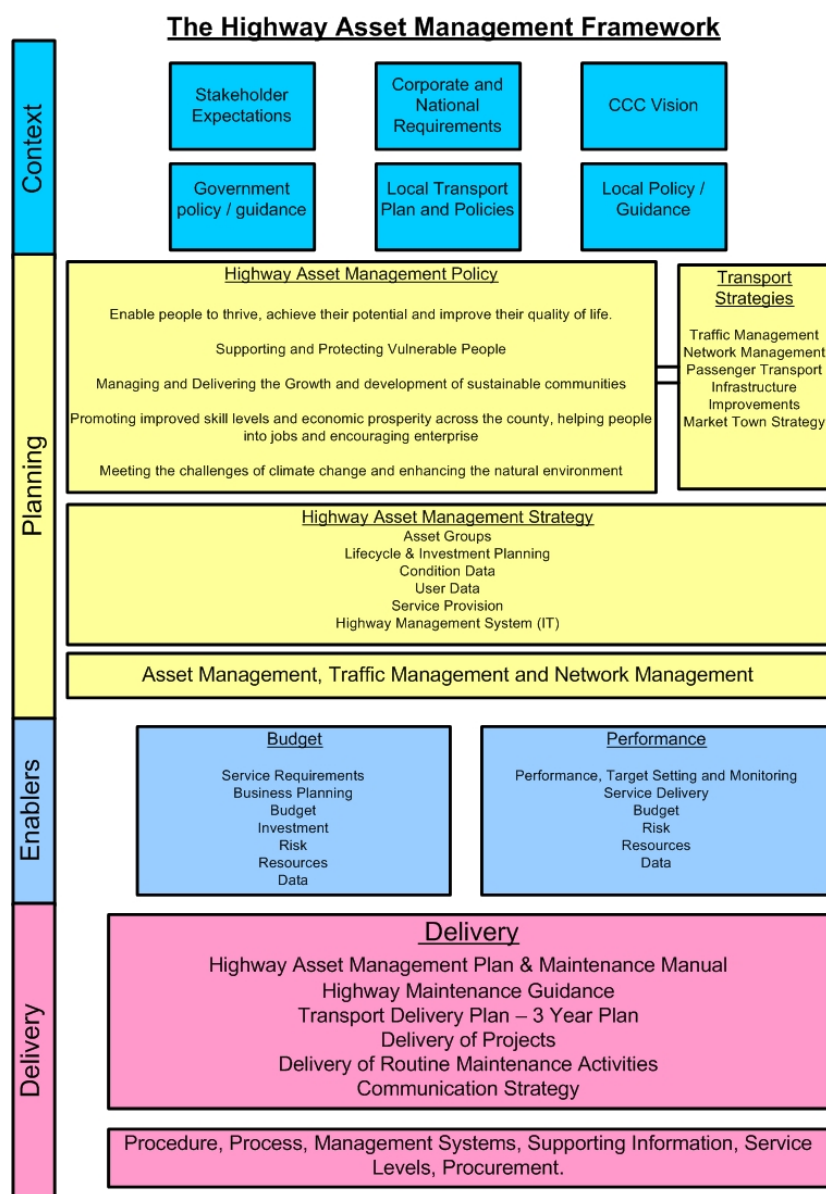


Fig 1 – Cambridgeshire CC's Highway Asset Management Framework

- 2.3 A key element of the Asset Management Framework is the Council's Highway Infrastructure Asset Management Plan. This Plan will contain approved policies and guidance, service standards and interventions, having regard to the Council's statutory duties.

- 2.4 This document reflects the guidance provided by the Highways Maintenance Efficiency Programme, (HMEP) document *'Highway Infrastructure Asset Management'* and the National Code of Practice *'Well-maintained Highways'*.
- 2.5 The organisational structure of the Council's Economy, Transport and Environment (ETE) directorate delivers highway maintenance services through a number of key Service teams.

Economy, Transport and Environment Services

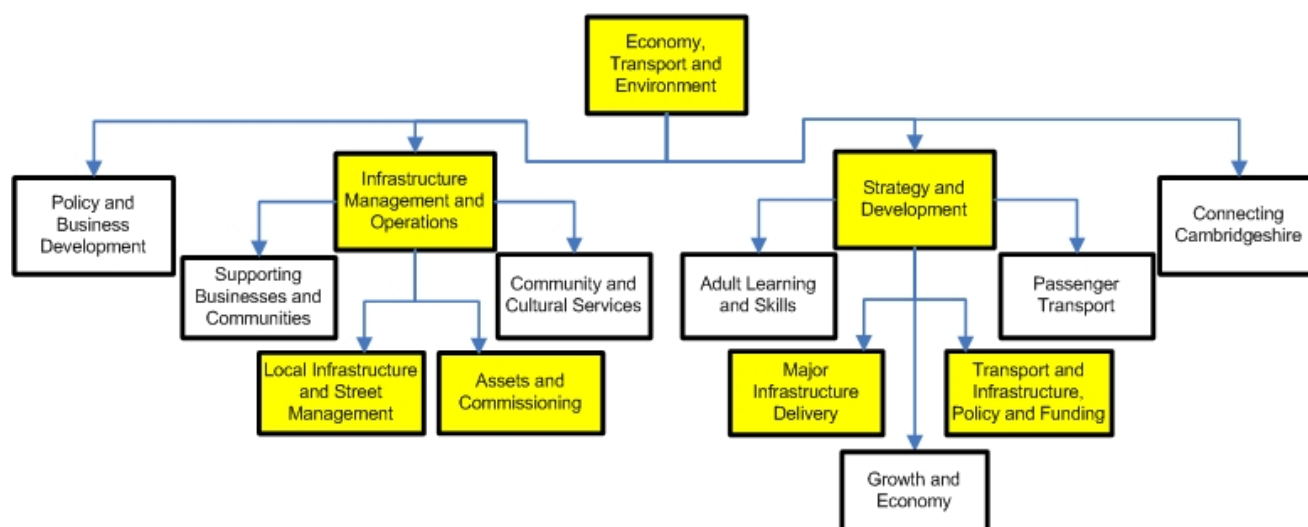


Fig 2 – ETE Organisational Structure

- 2.6 The Local Infrastructure and Streets Team (LISM) is the 'front door' to the highways service, handling routine maintenance, responding to customers / members, ordering works and services from the Councils Highway Services Contract partners. This service is predominantly delivered from four geographic locations - (Fenland, East Cambridgeshire, Huntingdonshire and South Cambridgeshire & Cambridge City).
- 2.7 The Assets and Commissioning Service (AAC) is responsible for the overall management of the Highways Services Contract. It also produces and maintains the Council's Highway Asset Management policies, strategies and plans. The team provides intelligence to LISM to support delivery of the Asset Management objectives and monitors the collection of network condition data. AAC monitors delivery of the Strategy and produces the Transport Delivery Plan.
- 2.8 Major capital maintenance schemes are delivered through the Major Infrastructure Delivery Service, with wider transport strategies, plans and funding streams being managed within the Transport and Infrastructure Policy and Funding Service.

3. User Preferences

- 3.1 Cambridgeshire's road network provides the backbone of its economy and the maintenance of the county's highways in an appropriate condition is of paramount importance. This is reflected in customer contact data which is dominated by queries and requests for maintenance relating to carriageways, indicating on-going customer interest in the condition of carriageways.
- 3.2 Recent results for the county, from the National Highways and Transportation (NHT) customer survey show that the condition of roads is both the criterion that is "most important to users" and the aspect "in most need of improvement". The data indicates a strong customer preference for improvement in carriageway (road) condition.
- 3.3 A joint officer / member workshop was held in December 2013 to help identify what is most important for Cambridgeshire and the direction in which the County Council should move forward.
- 3.4 The Strategy for each asset group has been derived from an options appraisal. The preferred strategic options support the key messages from user data and the priorities identified in the workshops.

The preferred strategic options are:

- Recognise the importance of all carriageway assets
- To adopt a preventative maintenance approach, targeting a 'steady state' or better.
- Geographical considerations on funding disaggregation (i.e. more emphasis on footways/cycle ways in south, more emphasis on carriageways in north)
- Footways, Structures and Traffic signals programmes to be rationalised and focused around priority assets.
- Target a long term reduction in revenue spending

4.0 Strategy for Main Asset Groups

- 4.1 The user preferences are supported by current network intelligence which gives clear direction for a Strategy that prioritises the condition of carriageways. This has been acknowledged in creating this Strategy for each asset as outlined below.

4.2 Carriageways

Carriageways (roads) are the asset group in greatest need of attention and the desired outcome of this Strategy is to improve their overall condition. The Strategy targets increased investment in roads, to arrest the progressive deterioration that was occurring prior to 2011/12.

4.2.1 Desired Outcome: to deliver a sustainable improvement in overall condition.

- *Priority Investment:* a preventative strategy will be adopted, as this will deliver the best value for money. Preventative works will be given budget priority
- Investment will recognise the higher levels of deterioration and higher cost of maintenance of Fen roads in the north of the county, as well as other areas where poor underlying subsoils are present.
- Investment will recognise the differences in condition between various road hierarchies
- Investment in drainage maintenance and improvements will continue.
- Investment in safety fence maintenance and upgrades will continue.

4.2.2 Preventative Approach - A preventative approach will be adopted. This means investing a greater proportion of the available budget to treat roads in the early stages of deterioration. A preventative approach targets assets that are not currently in need of full structural renewal and proposes to extend the assets whole life by arresting/delaying deterioration. The previous approach was reactive, and focused on assets at end of their life and involved carrying out more costly treatments. This was unsustainable. This Strategy is the roads equivalent of painting wooden window frames rather than waiting for them to rot and need expensive replacement. It is estimated that this approach could save the county between 10% and 20% if fully implemented.

4.2.3 It is recognised that the transition to a preventative Strategy may lead to a short term position in which the perceived network condition is worse.

4.2.5 Predicted Condition - The condition profiles assume that a small element of revenue funded works contribute to the overall condition e.g. where significant areas of patching are undertaken.

4.2.6 Reactive and Routine Repair Costs - A review of reactive repair standards will form part of this Strategy. The review will examine investigation and intervention levels and will determine how more cost effective ways of delivering an acceptable standard of repair to safety defects and other minor defects can be achieved.

4.2.7 The Strategy is designed to allow better management of customer expectations. By providing specified target standards, by improving planning of works and providing a more consistent condition it is expected that users will have greater clarity of what can be expected. Improved communication with customers using this information should improve customer perception and satisfaction.

4.2.8 Summary

- Sustainable improvement of measured condition

- Predicted decrease in quantities of minor defects (pot holes and the like) in the longer term
- Increasing customer satisfaction as a result of decreasing reactive repairs and more stable condition

4.2.9 **Fen Roads** - The condition of Fen roads is particularly difficult to predict as they can be significantly affected by weather conditions. Fenland areas have soils which are "susceptible to cyclic shrinkage and swelling". This is exacerbated in periods of unusually high or low rainfall and this movement can cause cracking and subsidence along roads in affected areas. This Strategy takes this into account and advocates funding disaggregation to reflect the impact of Cambridgeshire's underlying geology.

4.3 Footways

4.3.1 A condition survey of the county's footways has been recently undertaken and the assumptions in this Strategy are based upon the data collected. The priority is to address the condition of the higher use footways.

4.3.2 **Desired outcome:** to improve condition of high use footways (referred to as Cat 1 and 1a) and to maintain other footways in no worse than current condition.

- *Priority Investment:* the investment required to improve the condition of heavily used footways
- Footway investment on the remaining footways shall be maintained based upon targeting a "no worse than at present condition"
- A preventative Strategy will be adopted using surface treatments where appropriate

4.3.3 High use footways represent 2% of the Council's footway network, making it possible to create a significant change in their condition for relatively small investment.

4.3.4 By targeting investment in Cat 1 and 1a footways over a 3 year period a significant improvement in the condition of high use footways will be possible.

4.3.5 Remaining funding is predicted to enable progressive improvement in overall condition of other footways by maximising the use of preventative treatments where possible.

4.3.6 **Prevention** - A large proportion of the County's footways are bituminous. A regime of preventative treatments such as slurry sealing offers the opportunity to delivered improved condition at a lower cost. A programme of preventative treatment will form part of this Strategy and will be incorporated into future Transport Delivery Plans.

4.3.7 Reliability of Predictions - Predictions of deterioration are based upon engineering judgement and have not been able to be corroborated. The development of a regime of robust condition surveys to enable more robust predictions is an action within the Asset Management Plan.

4.4 Highway Structures (bridges)

4.4.1 Desired outcome: to maintain safe structures whilst making steady progress in addressing structures where strengthening is desirable, utilising bridge condition and location as determinant factors.

- *Priority investment:* in statutory duties and a small number of priority structures
- Strengthening programme; strengthening of structures will be undertaken progressively using a prioritisation of those structures where strengthening provides the greatest benefit to users
- Maintain the safety of the structures stock
- Reduce the number of structures requiring strengthening works

4.4.2 Statutory Duties - The council will continue to meet its statutory duties as the owner of highway structures, via a regime of inspections and management of abnormal loads and bridge use. Funding allocations to allow repair of damage to structures requiring immediate attention (e.g. vehicle strikes in order to keep the asset safe) will be maintained.

4.4.3 Bridge Strengthening Programme - There are currently a number of structures that fail to meet full load carrying capacity. A list of schemes has been identified where strengthening work is desirable. The remaining structures will be managed utilising a regime of inspection/monitoring. The Strategy is based upon addressing the highest priority structures within this list as below:

Priority 1 Works: Structures which require urgent (next 1-3 years) attention to prevent them from becoming hazardous to users, or those that require works to prevent higher future repair costs from being incurred.

- Completion of last phases of strengthening works on currently committed structures including works on listed/heritage structures
- Other Priority works (as detailed in the Asset Management Plan)

Priority 2 Works: structures which require strengthening but can be managed by monitoring until funding is available to enable works to be undertaken (targeted completion of this programme within 10 years)

- Strengthening works on structures.
(an allowance has been made for additional structures that may be identified via inspection during the next 10 years as requiring strengthening).

4.5 Traffic Signals

4.5.1 A number of traffic signal installations that will have reached the end of their life have been identified and these form the basis of the traffic signals Strategy.

4.5.2 **Desired outcome:** to retain a reliable, safe traffic signals stock

- *Priority investment:* Highway priority junctions and signal controlled crossings that are in need of replacement
- Refurbishment Programme: on-going replacement needs driven by age of site, obsolescence of equipment and deterioration of condition/reliability

4.5.3 **Reliability** - The reliability of the traffic signal stock will be maintained via a regime of inspections and reactive repair.

4.5.4 **Refurbishment Programme** - A programme of refurbishment will address sites where, due to age or obsolescence of equipment, the future reliability of the site could be at risk. This list also includes sites where there is a need to upgrade in order to improve traffic flows through the junction. The programme has been prioritised as follows:

1. **Priority 1 Work Junctions and Communications Works;** essential communications cabling replacement works plus refurbishment of high priority junctions.
2. **Priority 1 Works Signal controlled Crossings;** high use crossings where work has been identified as providing added value
3. **Desirable Reliability Works;** Junctions that are not priority 1 works but have been identified as needing attention before others (and signal controlled crossing) because they are a rare controller or because there is added value, such as the possibility of adding in an additional phase to the sequence.
4. **Priority 2 Junction Works:** the remaining junction sites that are at or nearing the end of their expected lives (will exceed 20 years old by 2017)
5. **Priority 2 Signal controlled Crossing Works:** These are the remaining signal controlled crossings that not included above.

The Strategy is designed to complete priority 1 works within the first 3 years.

4.6 Street Lighting

The County Council's Street Lighting management and maintenance are delivered through an existing long term PFI contract which extends to 2036. It is therefore excluded from this Strategy.

4.7 Drainage schemes

The Strategy continues to provide annual investment in drainage improvements – recognising that positive drainage systems will help prolong the life of roads.

This investment will provide a mechanism to manage flooding issues and develop solutions and will be funded from within the capital carriageway allocation.

4.8 Capital Improvement and Road Safety Schemes

- 4.8.1 The Strategy supports the need to focus on improving road safety and encouraging growth through delivering appropriate improvement schemes. Whilst the Strategy does not directly cover these activities, it is intended to facilitate a joined up approach to the delivery of improvement and maintenance schemes. There is also an on-going requirement to understand the future maintenance implications of new capital schemes.
- 4.8.2 Further efficiencies gained by adopting effective Asset Management could be used to help expand on works carried out through the Local Highway Improvements Initiative.
- 4.8.3 The Asset Management Strategy and resultant long term delivery plans, will allow a more coordinated approach to the provision of capital improvement and highway maintenance schemes. This will ensure that maximum value is achieved from various capital and revenue investments through the lifecycle of new and existing assets.

4.9 Sudden Asset Failures

Whilst the Strategy advocates a planned and risk based approach to Asset Management, there may be exceptional circumstances in which a particular asset fails rapidly and unpredictably. In this event, planned activities will be reprioritised (using the principles contained within this Strategy) across all asset groups in order to facilitate the inclusion of additional schemes within the programme.

5.0 Planning Considerations

The Council appreciates the importance that growth and re-development has on the future of the local area and economy. However, there is a need to ensure that any new development / change of use promoted through the planning process fully considers the impact on the existing highway network and its future maintenance.

6.0 Data Management and Information Systems

- 6.1 The County Council's Highway Asset Management Strategy and Plans are supported by robust and reliable data.
- 6.2 The following systems are currently in operation by the Authority to manage its highway data

- Symology Insight Highway Management System
- WDM Pavement Management System
- GIS (MapInfo)

7.0 Good Practice

7.1 Cambridgeshire County Council is committed to developing and implementing best practice and will make best use of the following forums where appropriate:

- Highway Maintenance Efficiency Programme (HMEP)
- The Chartered Institute of Public Finance and Accountancy (CIPFA) Highways Asset Management Planning Network
- Highways Asset Management Financial Information Group (HAMFIG)
- UK Roads Board
- Eastern Highway Alliance (EHA)
- ADEPT Asset Management Working Group
- National and regional conferences
- Professional Institution engagement
- Competency training

8.0 Review Process Monitoring and Performance Reporting

- 8.1 The Strategy will be reviewed regularly to allow informed decisions to be made to accommodate any changes in funding and priorities within the longer term forecasts.
- 8.2 The Strategy is not predicated on funding levels, therefore significant changes to the Strategy will not be required if major changes in available budgets occur.
- 8.3 Progress in delivering the Strategy will be reported via an Annual Strategy and Performance Review, carried out within the AAC Service. The timetable for this review will be included within the Highway Infrastructure Asset Management Plan.