

11. MAKING BEST USE

The highway network is a key community asset that supports the national and local economy and contributes to the character and environment of the areas it serves. Roads are an important part of everyday life for all sections of the community.

The local road network is central to the integrated movement strategies, contributing to the delivery of wider economic, social and environmental objectives. Its effective management and maintenance therefore has the potential to aid regeneration, accessibility and community safety programmes and strategies.

Aims and Objectives

The main objective of the County Council is to manage the highway network in order to provide for the safe, efficient and effective movement of people and goods whilst preserving and enhancing the environment. Highway maintenance will be undertaken by means of a systematic logical approach based upon a strategy developed in accordance with the principles of Best Value. The main aims of the strategy are:

- To deliver the statutory obligations of the Authority
- To be responsive to the needs of users and the community
- To provide effective management of the highway network asset and ensure effective allocation of resources
- To support highway network management strategy and integrated transport objectives
- To contribute to the reduction in road accidents/casualties as part of the County's overall strategy for casualty reduction
- To provide clear statements of highway maintenance policies, standards and procedures and review on a regular basis
- To embrace Best Value and Asset Management Planning in the maintenance of the County's highway infrastructure
- To support and add value where possible to wider policy objectives.

These principles are incorporated into a network management regime with the following core objectives:

1. Network Safety

- Complying with statutory obligations
- Meeting users' needs

2. Network Serviceability

- Ensuring availability
- Achieving integrity
- Maintaining reliability
- Enhancing quality

3. Network Sustainability

- Minimising cost over time
- Maximising value to the community
- Maximising environmental contribution.

Lengths of maintained highways

The lengths of maintained highway are given in Table 11.1 below.

Road class	All County roads (km)			North Nottinghamshire (km)		
	Rural	Urban	Total	Rural	Urban	Total
A roads	387	142	529	268	92	360
B roads	134	138	272	100	59	159
C roads	554	215	769	340	99	439
Unclassified	604	2060	2664	427	905	1332
Total	1679	2555	4234	1135	1155	2290
Trunk Road	Motorways	15				
	Trunk Roads	150				

Table 11.1 Lengths of maintained highway

Condition of Network

The condition of Principal Road Network has improved considerably over the period of the previous LTP (as detailed in section 3.7 of Problems and Opportunities) through effective prioritisation of maintenance programmes but it still requires significant investment over several years.

Cross boundary and partnership working

As well as working with district councils through the 'Manage and Operate' Partnership arrangements, and the various partnerships relating to managing and maintaining the network detailed within sections 3.7 of Problems and Opportunities and chapter 2.4.6, the Council has entered into external partnership arrangements with Jacobs BBTIE and Tarmac. (More detailed information on partnership arrangements can be found in Chapter 12, Five Year Programme).

Liaison meetings with these external partners also enables us to learn from their experiences from working throughout the country.

Procedures are in place to consult with, and discuss, the impact of maintenance schemes (developed by both the Highways Agency and ourselves) with the Highways Agency. Similarly, the Environment Agency are consulted on maintenance schemes through the scheme design process at a project level on both scheme design, as well as the type of materials used during the implementation of the scheme.

The Council works in partnership with neighbouring authorities, sharing best practice and helping to aid cross-boundary working. For example, the Council has reciprocal arrangements for routine maintenance and salting with neighbouring authorities to maximise the effectiveness of available resources and deliver value for money.

11.1 ASSEST MANAGEMENT

Background

Nottinghamshire County Council has responsibility for delivering highway maintenance to the people of Nottinghamshire and those travelling through it on its highway network. The administrative County of Nottinghamshire has a population of 748,300 people and the county has a highway network totalling 4,234 kilometres for which the County Council, as Highway Authority, is responsible for its management and maintenance and provision of new enhanced infrastructure.



The Authority spends an average of £11m (Capital) and £2.1m (Revenue) on planned structural maintenance of carriageways and footways in the county. As well as this, there is a highway maintenance revenue budget of approximately £16m per annum to deal with routine and winter maintenance of the highway asset. The service is delivered through the County Council's own in-house staff as well as its Partners.

An additional £4m per year of capital funding through prudential borrowing has also been allocated for highway improvements for the next four years. This money will be used for structural maintenance of the carriageway and footways on B, C and unclassified roads throughout the county.

Strategic Plan

The County Council in its Strategic Plan 'Building for the Future' endorses the Authority's commitment to doing all it can "to protect and enhance our environment for today and future generations". As part of that commitment the Strategic Plan detailed objectives to improve the County's highway network and work with partners to reduce accidents as well as to reduce the backlog of repairs on the main roads. The County Council's Strategic Plan is currently being revised but will also support the importance of the highway network. These objectives are cascaded into the County Council's Best Value Performance Plan and the Local Transport Plan. Some of the main objectives and aims in various current County Council documents include:

- To manage the highway network in order to provide for the safe, efficient and effective movement of people and goods whilst preserving and enhancing the environment (main objective)
- To ensure the highway network is able to carry both the volume and weight of traffic determined by the road hierarchy framework
- To encourage the use of sustainable materials and practices
- To maintain and enhance the environment of the highway in a manner which is sympathetic to the nature of the surrounding area
- To minimise the impact of adverse weather conditions on the highway's safety and travel quality
- To ensure that the highway network satisfies the reasonable expectations of the community's needs for transport in business and employment, education and training, food and essential services, health and leisure

- To have regard for the long-term future of the network when formulating expenditure plans, and ensure efficient and economical resources in the maintenance of the network (key to Asset Management Planning)
- To provide better accessibility for deprived and rural communities
- To deliver safer roads
- To reduce crime or fear of crime by the provision of street lighting in partnership with other agencies
- To make it safer and more convenient for people to walk and cycle.

Highway Services Best Value Review

Following the Best Value Review of Highway Services in 2002/03, it was determined that the County Council needed to refocus its key priorities and actions amongst which were:

- To continue to invest in the County's road network through a planned maintenance strategy to bring all roads in the county up to acceptable standards by 2010
- Under operational improvements, to purchase a Highway Asset Management System to significantly assist in establishing the full quantum and condition of our highway assets and enable the Authority to meet the recommendations of the new Best Value Code of Practice for Highway Maintenance. The Highway Maintenance Asset Management System should contain a 'customer interface' and enable the development of a prioritised programme of planned and routine maintenance work, which will ensure the most effective use of funding
- To introduce standards and systems to improve the speed of response to highway defects/faults to raise public satisfaction in this area of work.

Best Value Code of Practice

The Best Value Code of Practice for Highway Maintenance Management (July 2001 and updated in July 2005) clearly sets out that arrangements for the management of highway maintenance need to be set within the context of an overall asset management regime, consistent with the arrangements established by the Authority for the management of its wider asset base. This would normally include land, property and other key owned or leased assets used for service delivery in its wider local democratic role. There is however, a database already set up to deal with this latter aspect. The key principles of asset management set out in the Code are:

- Focus on life cycle costing
- Management strategies for the long-term
- Establishing and monitoring levels of service
- Managing risk, failure or loss of use
- Sustainable use of physical resources
- Continuous improvements.

The Code sets out the foundations for the highway maintenance strategy, which are hinged around a detailed inventory of all relevant components of the asset, a defined hierarchy for all elements of the network and a robust framework of policies and objectives for the service. Although they should each be comprehensive and robust they should also be dynamic and subject to regular review and updating in the light of changed circumstances. This effectively forms an Asset Management Plan.

11.2 TRANSPORT ASSET MANAGEMENT PLAN

Although the County Council already undertakes many of the practices outlined by guidance to management of the highway asset, as detailed earlier, it is currently working to develop a Transport Asset Management Plan (TAMP) for the County's network. The first edition of the TAMP is to be produced and available by April 2006.

A consultant (OPUS) was employed to advise the Authority on both its current position and on the way forward. They deemed that the County Council were in a similar position to a lot of authorities and considered that the development of a full TAMP was an advisable step to improve management of the highway asset. Consequently an Asset Management Project Board consisting of managers and team leaders of the service areas within the County Council, involved in all aspects of managing the highway network, has been established to drive the process forward.

The County Council is a member of the Midlands Service Improvement Group (MSIG), which consists of 13 authorities. Membership will help the authorities to avoid set backs that other authorities have suffered, share best practice, develop common understanding, aid cross-boundary working (to offer value for money, such as reciprocal routine maintenance arrangements) and to benchmark practice and results within the group. The partnership also allows neighbouring authorities to adopt similar standards and principles to offer a seamless cross-boundary service.

The MSIG employed OPUS consultants to develop an enhanced generic framework for a TAMP. The generic plan is complete and currently being populated by individual authorities to suit local conditions. In addition the structure and content of the TAMP is also being guided by the County Surveyors Society Framework for Highways Asset Management, as well as learning from experience gained by other highway authorities.

A website has been set up which the members of the MSIG are able to access to enable them to share information more easily on issues such as benchmarking and lifecycle planning. Individual authorities have selected lifecycle plans to complete and publish on the MSIG website. The assets have been allocated into specific groups (for example, carriageway, footway, street furniture, verges, traffic signals etc.), enabling knowledge and best practice to be shared and also agreed methods of collection to be devised. It also assists in drawing comparisons between authorities.

The main objectives in producing a TAMP for the County's highway network are:

- To **review current practice**. This work was started as part of the preliminary asset management plan which is detailed later and will be completed in the TAMP
- To **review existing inventory provision**, identify gaps and prioritise a data collection programme to build an inventory of items that comprise the highway assets, and ensure maintenance of the data itself. Strategies have been developed to make improvements in data management and use, as these will be required to support a greater use of asset management. These strategies cover the collection/replacement of missing/unreliable data and work is underway to collect/replace this data
- To **identify the current condition of the assets**, taking into consideration **life cycle planning and whole life costing**.

As part of the TAMP, work on life cycle plans is being completed for individual highway assets, for example carriageways, footways, bridges, street lighting, signals, signs and lines. The work underway on the development of life cycle plans is to make sure that the best possible value for money is achieved. Whilst this is not a new concept to the Council, as it has been used for a long time to make decisions on measures such as carriageway surfacing, this principal is now being used for all assets in a more formally recorded manner. Each life cycle plan will document current practice, identify standards and levels of service, thus enabling performance gaps to be identified. In addition, each life cycle plan will identify the cost and the anticipated life of treatment options, as well as detailing the methods used to assess the relative cost effectiveness of different treatment strategies. By developing a long-term strategy, options will allow for consideration of not only the most cost effective treatment at a single point in time but also the timeliest intervention. Resources will be directed towards identifying preventative maintenance treatments that have minimal whole life cost but at the same time halt the deterioration of the asset's condition. Whole life costing will be developed for each of the highway assets as

part of the development of life cycle plans. There is a strong move now towards whole life costing techniques and whilst this is not as easily applied to highways as other assets, there is a need to establish what the valuation of the asset is to evaluate how much it will cost to replace using asset valuation guidance and timings. For different types of construction techniques, the Authority can then determine whether it makes financial sense to invest more at the outset to save funding in the longer term and manage the asset with regards to best value and customer expectation. A TAMP will enable us to do this. The Prudential Code introduced by Government also requires local authorities to have explicit regard to asset management planning when making capital improvement decisions

- To **determine an accurate valuation of the whole asset** and ensure processes are in place for updating this whenever required
- To **develop an integrated forward work programme** to cover all assets, ensuring they support main objectives as well as ensuring any proposals are appropriate to the existing conditions. The TAMP will define current and desired levels of service and the corporate risks associated with these. Once these have been established, an integrated renewal and maintenance programme can be developed.

Long-term planning for maintenance will facilitate the analysis of the timing of maintenance interventions and the programming of preventive maintenance treatment thus leading to better whole life cost solutions. An integrated forward work programme will also facilitate the co-ordination of planned maintenance schemes with major and other integrated transport schemes, and potentially improve co-ordination with utility works, as required by the Transport Management Act. Once long-term programmes have been developed for all assets (as a result of the development of lifecycle plans for each asset) and for each service area (as an output from other LTP strategy development) it will be possible to identify conflicts and the possibility for developing hybrid schemes (i.e. schemes that meet two purposes concurrently)

- To **identify the levels of service** appropriate to the key assets and develop future levels of service as required, to ensure these assets meet current and future requirements for TAMP and to **put in place performance measures**.

Levels of service have been agreed and performance measures will be developed to support the management and delivery of these services. Monitoring and measuring of performance across all categories of work is becoming increasingly important, particularly national Best Value Performance Indicators which in turn are linked to the Corporate Performance Assessment of the Authority. It is important there are good record data systems in place which can be monitored and provide input into performance indicators. An asset management system facilitates this to a great extent across the whole spectrum of highway infrastructure. With the development of a local performance management framework, additional indicators will come into play which will require a suitable asset database to be in place so that appropriate performance reports can be produced. It is planned to benchmark our performance with other similar authorities through the MSIG. Currently this would be achieved using national indicators but it is intended that they will be supported by local indicators that are currently being developed. It is envisaged that performance measures will be strategic, tactical or operational:

- Strategic indicators to be primarily used to report on performance to external stakeholders e.g. best value performance indicators
- Tactical indicators to be used as an ongoing management tool and used in resource allocation decision making
- Operational indicators provide information to service deliverers and used to improve the efficiency of service delivery.

- **Review existing risk management processes** in dealing with treatments of the asset
- To **develop Improvement Action Plans** as identified during the process
- Ultimately to **deliver a safer, improved network service** for all road users.

A preliminary Asset Management Plan was developed and approved for the County in 2004. It concentrated on the strategic level of information and gave clarity to strategy, policies and standards to maximise service delivery. The exercise was focussed on identifying where the Authority has a shortfall in these areas and also the lack of data about the asset, with a view to earmarking a prioritised programme of work to rectify the situation and enable the full benefits of a Highway Asset Management System (HAMS) to be utilised and linked to Performance Management.

The County Council has completed the procurement of a HAMS and is currently undertaking its implementation. This implementation is expected to take approximately eighteen months.

In addition to reviewing best practice at other highway authorities in order to use the more successful ideas in Nottinghamshire, the County Council's working group has determined the input required and developed a strategy for the production and implementation of the HAMS and TAMP.

The group has also completed a review of the Authority's current practices. This resulted in the identification of strengths and weaknesses to enable the production of an Improvement Plan. A review of existing data has also been carried out (both in terms of quality and quantity) in order to develop a strategy to collect up to date and reliable information. The asset management system provides the facilities to record the data. The information that the Council holds will be recorded on the system and further data will be collected or purchased (such as additional survey data) to complete the database.

Customer Contact Centre

The County Council is moving towards dealing with queries from the public via a Customer Contact Centre. This will include highway enquiries and reporting of defects by the public. This affords the opportunity to introduce and link a highway customer service module from an asset management system that would log such calls/complaints and has a potential to create a works order automatically for repair of the defect. This repair can then be tracked in terms of speed of response/repair. It is also very important to know what the customer wants in terms of service delivery and a record of public contact and indeed that of elected Members. This type of information can be logged on to the system for future reference and policy development. A customer contact centre has great benefits for the public as it will mean that there will be one effective point of contact that will be able to deal with all of their Council enquiries.

Other Considerations

It is necessary to make the most effective use of resources in terms of delivering value for money services to the customer. At the present time there is a lack of information regarding the level and condition of many of the highway infrastructure assets and there is a need to collect a lot of data to bring together what will be a comprehensive asset register for the Authority. Only then will it be possible to look at the maintenance of the highway asset in the round to make decisions on what asset should receive priority and relevant levels of funding. This will enable well-focussed prioritisation in the allocation of resources in terms of need. Also with the information at hand, it would then enable the Authority to integrate maintenance delivery by being able to identify on a particular stretch of road what needs dealing with at any one time in line with 'Rethinking Construction', which advocates such an approach.

With an increasingly litigious society, it is more important than ever to reduce the number of claims against the Authority by having a safe, effective and efficient highway infrastructure. The aim is to limit the risk of accidents by ensuring a high standard planned maintenance regime is in place, together with appropriate inspection regimes and records of defects and repairs. To

facilitate this, appropriate systems and procedures on a countywide basis should be implemented and a TAMP will go a long way towards meeting this requirement. Risk identification, its analysis and subsequent reduction are a vital element in asset management planning.

From April 2005 the highway assets in the Ashfield, Broxtowe and Mansfield areas are being maintained by the district councils under 'Manage and Operate' Partnership (MOP) arrangements. This allows the propagation of policies, standards and common practice throughout the county including members of the MOP. The district councils have therefore been involved in the development and selection of the HAMS, and consulted on the TAMP, particularly work relating to life-cycle planning.

11.3 BRIDGES AND STRUCTURES

Bridges form an integral and often critical part of the highway network and it is essential that adequate funds are available each year for managing and maintaining these vital assets. Bridge stock details, including the number that require strengthening, have been reported in the APR each year and currently there are 503 bridges (>1.5m span) within the Plan area.

In the past, funds have been prioritised towards bridge strengthening to ensure that structures supporting the public highway can carry 40/44 tonnes wherever these might reasonably require access. The County Council has carried out a prioritised programme of bridge strengthening, with a total of 30 bridges and culverts being strengthened to the 40 tonne requirement since 2001/02 at a total cost of approximately £2m. It has been accepted that certain bridges do not need to carry 40/44 tonne vehicles and that in certain locations weight restrictions are acceptable and where this is the case, weight restrictions have been applied.

The County Council has policies to carry out 'general inspections', 'principal inspections' and 'strength assessments' for all bridges and culverts on the highway network, to carry out appropriate maintenance, refurbishment and strengthening work and to ensure that the bridge stock is maintained in a proper state to safely carry traffic loads.

Revenue funded general inspections take place every two years and capital funded 'principal inspections' take place at frequencies not exceeding 10 years, significant structures (railway and major river bridges) not exceeding six years and under water inspections not exceeding three years. Local performance indicators have been developed to monitor our performance in relation to the completion of bridge inspections. The extensive assessment programme allows for the identification of both current and future problems concerning bridges and structures.

Following the completion of the strengthening programme, emphasis has moved to upgrading work. Parapet replacement, protection and improvement work is in progress following individual risk assessments. There are particular concerns with weak timber parapets, post and rail parapets, masonry baluster parapets and sub height parapets. In certain locations parapet protection work has been carried out in the past, such as trief kerbing and safety barriers. Future work programmes are based on the inspection regime, life-cycle planning and the overall condition of the bridge as indicated by the Bridge Condition Index.

Twenty eight sites have been identified on A and B roads for parapet improvements at a total estimated cost of £603K and a prioritised programme of works has been put in place to address these sites. One site was completed in 2004/05 and five sites have been completed in 2005/06. A further six sites are planned for 2006/07. Parapet improvement work on C and U/C roads is currently being identified and will be part of the work undertaken as part of the development of the Transport Asset Management Plan (TAMP).

A programme of bridge deck waterproofing and re-waterproofing is in progress. In the last three years three bridges have been waterproofed, as no previous waterproofing existed at these sites, at a total cost of approximately £180K. A further 45 bridges have been identified for waterproofing or re-waterproofing to replace historic/failing systems and a prioritised programme of works has been developed to address these sites. Waterproofing works has

been completed at five of these bridges in 2005/06 and five locations are planned for 2006/07. In addition to this, major maintenance painting schemes are planned for ten bridges in the next five years with one completed in 2005/06. All bridge works are carried out with due regard to our environmental responsibilities and consultations take place at an early stage with the Environment Agency (EA) and Wildlife Agencies including English Nature. Consultation with the EA and internal drainage boards is important particularly for works taking place in flood plains. For works on listed structures, consultation takes place with English Heritage. The Highways Agency are consulted for bridge works which will effect flows on the trunk road network, in line with our Traffic Management Act duties.

Following the Selby 'rail' crash, all relevant bridges have been assessed using the Network Rail Protocol. Working in partnership with Network Rail, works have been carried out on 12 of the 14 bridges scoring greater than 90, to reduce the incursion risk. There are two outstanding bridges scoring greater than 90 where there are physical constraints to providing protection on the highway and these are with Network Rail for decision on possible protection measures on their land.

In order to improve the effective management of highway authority owned bridges, the Bridge Condition Indicator (BCI) has been used for all general bridge inspections since 2003. For Nottinghamshire County Council, the bridge stock condition scores for 2005 have been calculated to be 77.4 for critical elements and 87.2 for overall bridge stock. These scores indicate poor condition for critical elements and fair condition for the overall bridge stock. These figures may reflect that historically maintenance work has been under funded. The 2005 indicators do, however, show an improvement from 87.2 to 87.6 for the overall stock score and the critical stock score from 75.8 to 77.4.

In addition, progress is being made towards the adoption of the other proposed performance indicators in accordance with the trial application document 'Guidance Document for Performance Measurement of Highway Structures' prepared by Atkins Consultants. Initial indications for Nottinghamshire County Council bridges are that bridges represent only a minor availability restriction on the network with the stock availability score expected to be between 95 and 100 indicating a 'very good' availability (excludes low height railway bridges). Targets regarding the availability and reliability of the bridge stock cannot be set until the end of the trial working period of these performance indicators, in early 2006, when the indicators will be subject to feedback and subsequent national approval.

Identification of the outstanding workbank in accordance with Part C of the Atkins document has commenced.

The County Council will include bridges and structures within its TAMP which is currently being developed. The County Council has recently procured a Highway Asset Management System and the system will include a bridges module which will be an aid in the production of the TAMP. For bridges, the TAMP will consider inventory, condition assessment, service standards, performance monitoring, asset valuation, optimisation and budget considerations, performance gaps, risk assessment, routine maintenance plan, upgrading plan, disposal and sustainability and future developments. The TAMP will be informed by the 'Management of Highway Structures: A Code of Practice' which was launched in September 2005. The life-cycle plan for the County's structures will identify a range of revenue and capital funding options and performance outcomes based on the funding options.

The County Council takes an active role in the Midlands Best Value Improvement Group for Bridges and Structures, and shares best practice and knowledge with neighbouring authorities. There is cross-boundary working in connection with abnormal load route planning and in connection with bridges on highway authority boundaries, where reciprocal maintenance arrangements are in place to help maximise available resources and ensure value for money.

11.4 STREET LIGHTING

The County Council is responsible for approximately 48,000 streetlights throughout the Plan area which provide benefits in terms of:

- Reduced numbers and severity of road casualties
- Reduced levels of crime and the perceived fear of crime
- Creating a friendlier night time environment that encourages walking and cycling, with an enhanced perception of community safety
- Improving accessibility for socially excluded groups, particularly for women, children and the elderly
- Stimulating the night time economy – letting a town or city continue to thrive after dark.

Well designed and maintained street lighting, can therefore play an important part in encouraging the use of public transport, cycling and walking, accessibility and regeneration initiatives. The age and condition of the existing lighting stock is a cause for concern however, and at the beginning of 2005 there were approximately 4000 'poor condition' lighting columns in Nottinghamshire, with a very large backlog of 'average' condition columns. The County Council has therefore set aside £4m of non-LTP capital funds to begin to remove the backlog of below standard columns. A prioritised replacement programme of the below standard columns will take place during the period 2005-2009. The replacement priority is based on risk management from structural condition surveys and local needs identified through consultation.

An unsuccessful PFI bid was made in 2003 and the County Council are currently considering the suitability of this method of funding for our lighting stock and submitting an Expression of Interest for the next tranche of PFI funding.

The County Council and its district council partners have attracted over £500,000 of external funding since 2001 for street lighting upgrades, particularly in relation to matched funding for fear of crime schemes. These schemes are identified by consultation with district councils and local community groups.

The County Council continues to improve its lighting outage rate and has introduced systems to monitor BV215a and 215b, the new national performance indicators for average outage times. Current targets are to make repairs within less than seven days for County Council faults and less than 15 days for Distribution Network Operator (DNO) faults.

During 2006 the County Council intend to:

- Negotiate and implement a service level agreement with Central Networks for street lighting connections and disconnections using the national service level agreement as a framework
- Carry out the ongoing identification of safety critical street lighting, both in terms of road and community safety – in order to introduce an enhanced maintenance regime
- Update NCC's 'Street Lighting Guidance' and produce new code of practice in light of 'Well-Lit Highways Code of Practice for Highway Lighting Management' which was published in November 2004
- Re-tender the energy supply contract using an electronic auction, when full consideration will be given to the use of green energy
- Promote use of lower energy white light sources in new lighting schemes
- Develop a long-term strategy for the replacement of the County Council's street lighting stock.

The County Council will include street lighting within its Transport Asset Management Plan (TAMP) which is currently being developed. At present the County Council uses "SLIMS" as its street lighting inventory database, however, a highways asset management system has recently been procured. Among the options are the replacement of SLIMS within an integrated asset management system. Data from the street lighting module within the asset management system will feed into the TAMP.

For street lighting the TAMP will consider inventory, condition assessment, service standards, performance monitoring, asset valuation, optimisation and budget considerations, performance gaps, risk assessment, routine maintenance plan, upgrading plan, disposal and sustainability and future developments. The life-cycle plan for the County's street lighting asset, will identify a range of revenue and capital funding options and performance outcomes based on the funding options and will enable value for money options to be identified.

The TAMP will be informed by the new national code of practice 'Well-Lit Highways Code of Practice for Highway Lighting Management'.

The County Council takes an active role in the Midlands Best Value Improvement Group for Street Lighting, and shares best practice and knowledge with neighbouring authorities. Recently the County Council have switched to a four year bulk clean and change cycle based on best practice identified at this Group. Where schemes are planned adjacent to trunk roads the Highways Agency are consulted, similarly where a cross-boundary lighting scheme is planned consultation takes place with the relevant highway authority to ensure effective co-ordination of works.

11.5 NETWORK MANAGEMENT DUTY

The introduction of the new statutory Network Management Duty in January 2005 requires the County Council to do all that is reasonably practicable to keep traffic moving on its highway network as well as those of adjoining authorities. It places an emphasis on the importance of the active and co-ordinated management of the road network.

Network Management Duty Plan

Although not mandatory, the Council recognises the need for a formal plan to develop systems and procedures which will provide both proactive and reactive responses to network management and it is in the process of producing such a plan.

The plan will focus on measures to relieve congestion and disruption. This will include the development, improvement and enhancement of the highway and changes in its use through new works, signing improvements, Traffic Regulation Orders, public transport provision and the promotion of walking, cycling and public transport use.

The plan will promote a continuation of the proactive approaches to the co-ordination of street and road works and other temporary activity on the highway, as well as to parking management. It will also establish the appropriate measures required to respond to unplanned events through incident management, enforcement, media broadcasting, interactive signing and sharing network information in the region. It will identify activities on the highway and methods to minimise congestion and disruption, document diversionary routes and specify where possible how incidents will be managed.

Central to the plan will be a review of the current management arrangements, roads hierarchy, traffic sensitive routes and other designations and classifications. The plan will be developed within the overarching framework of the Local Plan, and influence/be shaped by emerging development proposals, including the influence of such things as restructuring in education and major housing improvement schemes or other extensive developments.

The plan will define both the overall long and short-term objectives, policies, standards and procedures that the Council will need to achieve in order to successfully satisfy the Network Management Duty, as well as the detail of how this will be achieved. The key to the Plan will be the development of the Network Hierarchy and User Classification which will enable it to focus on the most efficient options to address congestion and disruption to all road users whilst maintaining the duties and responsibilities that it already has.

Further detail relating to Road Hierarchy is included in section 11.6 of this chapter.

Traffic Manager

The County Council has appointed Peter Goode into the specific role of Traffic Manager. He has extensive experience in network management matters, including operations governed by the New Roads and Street Works Act and Highways Act. He is also involved in several regional and national bodies, including being chair of the National Street Works Highways Group, working on related matters. He is therefore ideally placed to share with, and learn from, other authorities' experiences.

The County Council has recognised the crucial role that the Traffic Manager will have in ensuring that there is effective and impartial authority-wide implementation of the Traffic Management Act and the Network Management Duty. Reporting directly to the Assistant Director of the Transportation Division, within the Environment Department, the Traffic Manager will, by virtue of his status, be able to have an influence over the wide range of matters related to the Network Management Duty. Being outside of the operational delivery arm of the Council (contained within the Highways Division of the Department) he will retain impartiality.

The Traffic Manager will be responsible for developing the County Council's Network Management Duty Plan, working closely with other parts of the Council, other authorities and stakeholders.

In developing the role, status and responsibilities of the Traffic Manager, the County Council has taken full regard of the advice given in the Network Management Duty Guidance. The Council is confident that with the appointment of the Traffic Manager and the responsibilities and status that the post will carry, the County Council will be ideally placed to fully integrate the Network Management Duty within the other duties and responsibilities that the Council already has, to bring about a reduction in congestion and disruption to all road users.

Congestion

The County Council is fully engaged in seeking ways of managing demand on the highway network such that the rise in congestion is stemmed by working to get the best out of the network and to encourage motorists to use alternative modes of travel. The Network Management Duty Plan will complement the LTP in this area and seek to ensure that policies achieve the balance between demands and reflect the changing use of the network, including that arising from changes in land use or other development.

Disruption

It is recognised that, irrespective of the level of congestion, journey time reliability is a very important part of travel planning and disruption to travel has a significant impact on many aspects of life and the local, regional and national economy. The Network Management Duty Plan will therefore pay particular attention to the management of planned and unplanned works, events and other occurrences, taking proactive steps to minimise disruption to the network including being prepared to respond to incidents.

Measurement, Monitoring and Indicators

As far as possible, the effectiveness of the processes relating to the Network Management Duty will be monitored by means of measurement and indicators used in association with other aspects of this Plan, including congestion, air quality, bus punctuality and school travel plans. However, it is anticipated that additional indicators will need to be developed alongside those relating to the Intervention Criteria when this has been established.

Quantitative data will also be used to identify areas of congestion, as well as to estimate the benefits of any proposed remedies and to prioritise actions to be taken.

Integration across authorities

There is a clear recognition by senior management within the Council that the concepts behind the Network Management Duty need to be fully understood by all those within the organisation as well as any other agencies who may have an influence on the highway network and its capacity and operation. A great deal of work has already been undertaken in disseminating information and raising awareness and this will be further enhanced by the Traffic Manager who will act as 'champion' to implement the Duty and in ensuring that detailed information is cascaded throughout the Authority and other external bodies.

Examples of the success already achieved in integrating the Duty within the Authority's existing work are that school travel plans are being developed and that the Duty is a consideration in planning issues, particularly relating to parking standards and impacts upon the network from development generated traffic. School travel significantly increases congestion on the network and school travel planning and the provision of safer routes to school are seen as complementary processes aimed at reducing this congestion. Within the Local Transport Plan period finance will continue to be allocated to the safer routes to school programme. The engineering measures in this programme are complemented by the work of the school travel plan officers who work in the Environment Department.

The Council also recognises the importance of decriminalised powers in the management of congestion and is working towards the introduction of decriminalised parking enforcement powers in 2007.

Partnerships and cross boundary working

The Authority acknowledges that, in addition to an authority-wide approach to the planning and delivery of services, there is a need to work in partnership with adjoining authorities and the Highways Agency to deliver a seamless service. The Council has for many years continually developed cross boundary protocols and relationships with neighbouring authorities and organisations. The Authority has been working very closely with Nottingham City Council since Local Government Review in 1998 and has excellent working relationships with it and other adjacent authorities. This has led to several service improvements such as the joint operation of the Traffic Control Centre and reciprocal winter maintenance agreements, where the authorities salt each others roads in adjoining areas to make routing more efficient.

Other examples are its membership and proactive work in the Nottinghamshire Bus Punctuality Improvement Partnership, the Bus Quality Partnerships, the Nottinghamshire Freight Quality Partnership, and the Nottinghamshire Road Safety Partnership. The Authority also holds co-ordination meetings jointly with Nottingham City Council and regular meetings with the Highways Agency and its agents for planning works. Outside of the Plan area, the Authority is fully involved in the East Midlands Highway Authorities and Utilities Committee, the award winning EMPReSS project and the Midlands Best Value Group, as well as being involved in the National Street Works Highways Group and HAUC(UK). As a direct consequence of the Network Management Duty, the County Council was responsible for instigating and implementing the East Midlands Traffic Managers Forum and continues to organise and host these successful meetings in pursuance of regional working.

There will be a need to build upon these relationships in the development of the Network Management Duty Plan. The Plan will define both the overall long and short-term objectives, policies, standards and procedures that the County Council will need to achieve in order to successfully satisfy the Network Management Duty, as well as the detail of how this will be achieved.

Management of Works and other Activities

Co-ordination of works and other activities on the highway is carried out at a number of levels under the umbrella of the joint co-ordination meetings. In developing a Network Management Duty Plan the council will incorporate best practice in co-ordination of activities on the highway, as well as reviewing procedures and protocols to ensure that disruption is managed effectively

across the network. The Traffic Management Act seeks to tighten the existing regulatory framework within which works are undertaken in the highway, providing authorities with greater powers to co-ordinate and manage works. The Authority will seek to make full use of these provisions to more effectively manage activities, with the principal aim of minimising disruption and reducing congestion. Although the new legislation associated with noticing and permits has yet to be introduced, it is recognised that there is a need to review the manner in which the full range of activities are managed to ensure that parity is applied irrespective of works promoter.

The Authority will continue to work collaboratively with other authorities in co-ordinating works and other activities and in developing strategies for dealing with planned and unplanned events across the Plan area. In particular this will include:

- The development of a clear hierarchy enabling the Authority to ensure that the new powers are used in the most appropriate manner and resources are allocated to greatest effect
- Ensuring that all works promoters are aware of the priority routes and the conditions applying to them
- Continuing to proactively co-ordinate planned works and other events through joint co-ordination meetings and shared processes
- Identifying areas for improvement of the proactive approach to the management of works in progress and enforcement of conditions, and
- Developing contingency plans for responses to unplanned events and improving communications to other authorities and the public.

The Authority will continue to work closely with the key works promoters to ensure that works are planned to reflect the priority given to those more important parts of the highway network. This will ensure that these promoters are able to develop working methods which will complete works in the most appropriate manner to minimise disruption, whether this be through night, off-peak or shift working or the adoption of alternative construction methods.

The Authority has held co-ordination meetings jointly with the City Council since the transfer of the highway authority role to the City in 1998, as well as with the other neighbouring authorities, and it is intended that this will continue. These meetings are a key element in the co-ordination process and are embodied within the statutory requirements for co-ordination. However, additional techniques and methods will continue to be developed to ensure that works and other events are well planned and co-ordinated and that long-term programmes are shared between works promoters to provide greatest opportunity for joint, sequential or phased working to minimise disruption.

As indicated above, implementation of the full scope of the powers is anticipated in the early part of the LTP period. Whilst the exact detail is therefore still unknown it is anticipated that there will be the opportunity to introduce measures to control activities in a more prescriptive manner than has hitherto been possible. In particular, the Authority will examine the provisions relating to permit schemes and consider whether to apply to introduce such a scheme.

Incident Management

It is recognised that, no matter how comprehensive and detailed forward planning of events may be, the occurrence of unplanned incidents cannot be avoided. The Council already has policies and procedures in place for the effective and efficient twenty-four hour management of incidents on the highway network. This is carried out in partnership with other organisations such as the Emergency Services, the Emergency Planning Authority and the Environment Agency, as well as other traffic authorities. It is recognised, however, that further work should be undertaken in this area to identify the nature of such incidents and establish a prioritised assessment process to determine policies for dealing with them. Contingency plans will be established for responses to unplanned events, including emergency diversion routes for key locations to ensure that in the event of incidents, pre-established arrangements can be put in place to keep traffic moving. The Council will also seek ways to improve communications to

other authorities and the public by examining the processes used to provide and receive information concerning events impacting on the highway network, including that provided by and to the Highways Agency through their Traffic Control Centres.

Accidents are just one type of unplanned occurrence which can disrupt the highway network and strategies are in place to reduce road casualties and their consequences, including the resultant delays on the network. Further detail on this aspect is included in Chapter 6, Safer Roads of this document.

The Authority already holds incident debriefs with adjacent authorities, the Highways Agency and other stakeholders to identify ways to improve the response to unplanned events.

Information strategies

The provision of timely and accurate information to road users is an essential part of the Network Management Duty and as such the County Council has done much in developing existing systems and exploring new technologies. The County and City Councils jointly fund the Traffic Control Centre that monitors traffic movement and provides real time traffic control over many traffic signal installations countywide. Real time information is conveyed onto the local media and disseminated via the Authority's web site. A recent move of the Centre has enabled much of its equipment to be updated and there will be consequential operational benefits and greater opportunity to develop technology, such as interactive signs to assist car parking and the movement of vehicular traffic.

The County Council was one of the founding proactive authorities responsible for the development of the award winning EMPReSS website that enables road users to look at road works data seamlessly across authority boundaries. Information related to longer term works co-ordination is available via the East Midlands HAUC website which enables utilities, developers and other authorities to view works programmes.

The County Council is also involved in the Roads Information Framework, a joint initiative involving the Highways Agency, DfT and local authorities. It is intended to improve the data that is collected on the highway network and how this information is used. The aims of the project are to:

- Utilise existing information to improve efficiency of operational management and improve performance
- Improve the quality and availability of data relating to congestion and safety
- Provide better means of analysing data to inform strategic decision making.

The framework opens up greater opportunities for sharing information between the different agencies, thereby aiding intelligence based network management across the whole East Midlands region. At a local level, the better co-ordination and sharing of information relating to the traffic management for special events has been identified by the Highways Agency as an area where improvement is required. Over the period of the Plan the Authority will work in partnership with the Highways Agency in providing local information to help ensure the network is managed more efficiently.

11.6 ROAD HIERARCHY

The road network is defined by both classification and hierarchy. Classification being the road number, for example A614 or B6031, which is a historically based system that has not been modified over the years and only applies to roads. Road hierarchy is a similar system but is defined based on usage and applies to both roads and footways. The definitions are set out in 'Delivering Best Value in Highway Maintenance – Code of Practice for Maintenance Management'.

As road hierarchy is more rigorously defined, the County Council has chosen this method as a basis for all of its policy issues. A review of road hierarchies has been undertaken throughout the county to ensure that our interpretations are in line with the recommendations of the Code of Practice and the review has now become an ongoing process. Some discrepancies have been

highlighted by this process where road usage has changed, for example new developments in an area have taken place or new bus routes have been introduced. These discrepancies are being addressed and the hierarchy maps changed accordingly.

This process has been very important, particularly with respect to winter maintenance as there is now a greater emphasis on salting footways and cycleways.

Hierarchy gives the Authority an opportunity to prioritise the different routes, and the hierarchy will continue to be reviewed to help ensure that traffic is influenced to take the most suitable route so that it intrudes as little as possible into the area through which it passes. The hierarchy also enables priorities for road safety, road maintenance, traffic management etc. to be determined accordingly.

A fundamental building block in achieving much of the Network Management Duty is the use and development of the Network Hierarchy. As indicated above, the County Council has already carried out much work in developing a hierarchy. This has been done in conjunction with maintenance of the street gazetteer and associated street data which includes traffic sensitive designations. This will form the basis of developing a much more detailed hierarchy that is fully reflective of the overall importance of particular roads within the network and is also related to the class of road user. Further development will take account of changes in the criteria permitted for designations within the street works associated street data and also identify those streets which are key to the operation of the network and on which there should be additional controls when activities take place. Such an approach will enable congestion measures and controls on disruption to be prioritised.

Although the data held predominantly relates to the Authority's own network, care will be taken to ensure that designations and other hierarchy decisions are not taken in isolation but are considered in conjunction with other authorities to ensure that there is consistency and continuity across the region.

11.7 PARKING CONTROLS

The availability of car parking has a significant bearing on the way people choose to make their journeys. Controlling parking in order to have an effect on motorists' destinations can therefore have a large impact on the types of journeys made particularly to traffic generators in congestion hotspots.

The effective management of car parking provision can therefore be a major influence in achieving the aims of the LTP and measures to do this such as development control and parking control are detailed within section 8.2, Congestion.

Decriminalised Parking Enforcement (DPE)

Nottinghamshire County Council has commissioned a comprehensive feasibility study into the implications and opportunities of the Council applying to assume responsibility for parking enforcement. The study concluded that it would be economically feasible in the county as a whole and as there are two tiers of Local Government in Nottinghamshire, the district councils are better placed to manage the enforcement. The new 'parking attendants' can therefore enforce on and off-street car parks and consequently a consistent approach to enforcement can be achieved. The Council's developing strategy to implement DPE has been drawn up with particular regard to Lancashire County Council's DPE strategy, learning from their experience in implementing a similar two-tier scheme.

There are however significant set-up costs associated with DPE and in order to assist the district councils in introducing DPE the County Council will endeavour to meet the majority of these costs. The district councils have all agreed in principle to negotiate with the County Council on the partnership agreement and upon completion of these discussions the County Council will submit a formal application for a Special Parking Area (SPA). At this stage, the earliest date achievable for the assumption of enforcement responsibility will be January 2007. This date is

included in the draft SPA submitted to DfT in May 2005. A wide-ranging consultation on the Council's intentions has also commenced with neighbouring authorities, the emergency services, bus operators and other interested stakeholders.

To ensure that on-street parking can be effectively enforced, the County Council has undertaken a review of all TROs to check for legal accuracy and visibility. The data has been added to a bespoke software system that will considerably assist in dealing with any queries generated by DPE. Additional TRO signing and lining maintenance will commence in 2006 and will continue through 2007. Together with a publicity programme in the months prior to the DPE date, it is hoped that these works will assist the public in clearly recognising the active TROs. The County Council is mindful of the publicity that DPE has attracted nationwide and in partnership with the district councils is determined to introduce a self-financing regime that is fully understood by the public and will result in improved traffic management and a more efficient use of the network.

It is also planned that the undertaking of enforcement of moving traffic offences (and the level of any such undertaking) will be considered as part of the future development of DPE.

Consultation with both stakeholders and the public, undertaken as part of the development of LTP2, has shown that there is strong support for parking controls. In all four of the sub-areas over 75% of those surveyed stated that they thought that parking controls were important (or higher), with 82% of those surveyed in Worksop and hinterlands stated that it was important (or higher).

11.8 DEMAND-SIDE SOLUTIONS

Improving access to local services such as education, training and employment opportunities, food and essential services, health and leisure services is a key objective within this Plan and is detailed within the Accessibility sections of 3.1 Problems and Opportunities and Chapter 5. An outcome of effective accessibility planning should be reduced trip lengths and less strain on the highway network.

The strategy to reduce the need to travel by car is vital in making best use of the existing network, including making smarter travel choices, safety and training and the promotion of cycling, walking and public transport and is detailed within section 8.2, Congestion.

Development Control

Processes to ensure effective development control such as better land-use planning and mixed use developments, as well as the use of section 106 agreements to improve existing facilities are considered to be another means of reducing trip lengths and this is detailed within section 8.2 Congestion.

11.9 SUPPLY-SIDE SOLUTIONS

Supply-side solutions such as intelligent transport systems such as Microprocessor-Optimised Vehicle Actuation (MOVA) and Split, Cycle and Offset Optimisation Technique (SCOOT) are being used to maximise the efficiency of the existing network, as well as enable better bus priority and increase journey times for bus passengers. The benefits of such measures in making best use of existing resources, as well as public transport, cycling and walking facilities and signing are included within Chapter 8.3, Congestion.