

## 16. Highway Maintenance Strategy

### 16.1 Introduction and Overview

This strategy (and the phrase "highway network" when used within this strategy) specifically excludes non-farmac routes on the public rights of way network, which are managed separately.

#### 16.1.1 Why do we maintain the network?

The highway network is maintained to ensure:

- That it is kept in a safe condition for all types of road user; and
- That the asset value is maintained.

Also, during maintenance operations, it is sometimes appropriate to upgrade the network particularly when this improves safety or, in the case of streetlights, when this is likely to reduce crime or fear of crime.

#### 16.1.2 Road users

Road users can be categorised by mode of travel and include:

- Pedestrians, including those with impaired mobility or sight;
- Cyclists;
- Horses;
- Public Transport Vehicles;
- Motorcyclists;
- Cars and vans; and
- Heavy Goods Vehicles.

Road users can also be categorised by reason for travelling including:

- Travel to work;
- Travel to school, or other education establishments;
- Travel to shops;
- Leisure;
- Socialising, particularly by adult pedestrians;
- Playing, particularly by children;
- Tourism;
- Business; and
- Transporting goods and delivering to businesses, shops and houses.

In addition, the road network, particularly in urban areas is used extensively for parking.

#### 16.1.3 What road users want

The highway maintenance activities need to take account of all types of user and policies have been developed to ensure that, as far as is possible, the needs of all users are met. The main requirements of users are networks which:

- Are free from dangerous surface defects such as potholes or uneven surfaces;
- Are free from ponding water;
- Are free from branches and vegetation which reduce visibility or which overhang and cause an obstruction;
- Have non skidding surfaces;

- Are free of ice and snow; and
- Can be used without fear of crime.

Users are also helped by signs, lines, studs and lighting, which improve safety, or by signs that provide directions.

Other requirements of users and residents include:

- Roads and pavements free from obstructions which prevent reasonable use of the highway;
- Minimal delays from roadworks;
- Road surfaces which are quiet;
- A highway environment which is attractive; and
- Verges free from injurious weeds particularly Ragwort, which can harm horses.

## 16.2 The Current Situation

### 16.2.1 Principal Roads

At the time of writing National Indicator (NI 168) indicates that Warwickshire's Principal Roads are in a better than average condition. The reasons for this are that the Council endeavors to target limited resources to the most appropriate length of roads each year and also ensure that the most appropriate treatment is carried out in order to achieve the best possible use of the treatment.

Despite this relatively good performance the County Council still believe it is necessary to maintain a good level of investment in the network. The Indicator shows that some 5% of the Principal road network is in need of structural treatment. As roads deteriorate this proportion of network will increase. To prevent this increase, regular investment in maintenance treatments is required.

### 16.2.2 Non-Principal Road Carriageways

The National Indicator (NI 169) shows Warwickshire's Non Principal Roads to be in the same condition as our Principal Roads. This stems from our strategy of prioritising maintenance treatments across the network rather than ring-fencing allocations to particular areas or road categories. As with Principal Roads the County Council believe it is necessary to maintain a good level of investment in the whole network.

### 16.2.3 Unclassified Carriageways

The indicator for the unclassified road network is measured from visual inspections rather than the machine based surveys used for the Principal and Non-Principal network. Consequently, headline results are not comparable. Consistent inspections over a number of years has shown that the network has remained at a consistent level of measured defect but is starting to show an increase in the amount of those defects. As with the remainder of the network adequate investment will be required over a number of years in order to firstly arrest the worsening of the network condition and to provide adequate investment that shows a general improvement.

## 16.4 Street Lighting

### 16.4.1 Street lighting and the national picture

Serious problems are developing nationally due to the ever-increasing age and associated deterioration in the condition of the street lighting stock within the UK. There are some seven million street lighting columns in the UK that represent a replacement cost of around £12,250m. There are also approximately 1.1 million illuminated traffic signs.

Street Lighting columns have a design life of 25 years and therefore this means that nationally we should be looking at replacing around 280,000 street lights every year at a cost of approximately £490m.

#### 16.4.2 The Warwickshire situation

The overall condition of the lighting stock in Warwickshire is fair, however there is a slow but steady increase in its average age. There is also a very evident backlog of painting which makes the lighting columns appear in a poor condition.

In Warwickshire there are over 50,000 lights, illuminated signs and bollards maintained by the County. As in other authorities, there are additional lights which are maintained by District, Town, and Parish Councils. The purpose of lighting is to ensure the safety of the travelling public and to reduce crime and fear of crime.

Lighting upgrades involve increasing the numbers of light columns and/or improving the lighting source. The upgrading of Mercury lighting can have energy and carbon savings but the upgrading of the more common low-pressure sodium lights involves an increase in energy use (although there can be some savings in repair costs as new lights are often more reliable). Warwickshire County Council is starting to use a new light source called Cosmopolis in new developments and energy efficient lighting improvements as part of a lighting design scheme generally improves the lighting in an area. The County are also looking at the use of LED's for street lighting. It is anticipated that this technology will be deployed in the near future.

The majority of the Street Lighting maintenance budget is spent on routine maintenance of the existing lighting stock and associated electricity costs. At the time of writing Warwickshire's street lighting budget allows the County Council to replace approximately 500 lighting columns each year which means that on average the lighting stock is expected to last for 100 years when it only has a 25 year design life. This budget shortfall is managed by the County Council by having all steel street lighting columns put onto a structural testing cycle once they have been installed for 25 years. Any lighting columns that fail the structural test are then removed and replaced, and any that pass the structural test are put down for retesting between two and six years later. This process should ensure that the County's steel lighting columns are safe but as time passes the number of columns requiring testing will increase each year. It is anticipated that the trend will be for more columns to fail the structural testing over time.

When it is financially viable, concrete columns are replaced as they are generally between 40 – 50 years old with some having known manufacturing problems. A satisfactory method for structurally testing concrete columns is not known. Once all of the concrete columns have been replaced the County Council plan to concentrate on replacing the Cast Iron lighting column that are approximately 80 years old and deteriorating around the neck. There is low level of concern for the County's "old" Aluminum lighting columns as these do not tend to fail catastrophically but tend to slowly fall apart which can be picked up on a visual inspection when routine maintenance is carried out.

In order to mitigate future problems all lighting columns on new developments are required to be Aluminum columns where appropriate it is anticipated that these columns will have a safe structural life of at least 70 years. Where lighting columns have to be replaced on existing roads and an Aluminum column is deemed unsuitable due to aesthetic reasons, galvanised steel lighting columns are specified that have a plastic coating. It is indicated that these columns have a safe structural life of 50 years and beyond. -

## 16.5 The Strategy

The County Council will aim to take account of all highway network users within its highway maintenance services.

Warwickshire County Council has used, and continues to use, a variety of methods to ensure we identify the most appropriate and economic ways to maintain the highway network.

### 16.5.1 Policies

#### **Policy HM1: General maintenance**

The County Council will continue to use a variety of methods to ensure that the highway network is maintained in the most appropriate and economic way.

Warwickshire was one of the first authorities to introduce condition assessments for all of its carriageways. The assessment systems have changed over the years but the results have helped to ensure that structural maintenance money has been targeted at the most appropriate roads. The assessments have also enabled us to monitor the success of different maintenance regimes.

Warwickshire County Council has also allowed a high degree of flexibility in the maintenance budget. This has allowed new maintenance approaches to be tried and, more recently, has allowed money to be spent on the roads most in need of treatment even if these are predominantly in one area of the County.

#### **Policy HM2: Use of Materials**

The County Council will work with local quarries and the construction industry to identify the most appropriate highway construction materials; reduce the amount of construction waste; and to recycle materials on site where possible.

The County Council produced its Surfacing and Structural Maintenance Strategy in 2009. This strategy addresses the construction, structural maintenance and resurfacing of the highway network together with footways, cycleways and cycle paths and other associated surfaced areas.

The guiding principles of this Strategy are:

- To have minimum environmental impact
- To have appropriate and balanced levels of safety to minimise casualties
- The minimisation of hazards during installation and maintenance
- To maximise the durability of the pavement structure

In following these principles we aim to

- Reduce new material usage
- Provide good ride quality
- Reuse road structure
- Recycle road materials

Where significant highway reconstruction works take place, the County Council actively encourage the recycling of materials on and off site to minimise the amount of virgin stone and other materials needed from local quarries.

### **Policy HM3: Maintenance and Asset Management**

As part of the development of the Warwickshire Transport Asset Management Plan (TAMP), the County Council will continue to review its maintenance policy in order to identify where further improvements can be made, especially in achieving value for money.

The maintenance activities in Warwickshire are carried out in accordance with the published 2009 – Guide to Highway Policy Details & Service Levels and the Annual Maintenance Plan. These set out the way in which the network is being maintained; list the planned maintenance work in the County for the year ahead and list the roads where maintenance work will be required in future years.

Warwickshire's Transport Asset Management Plan (TAMP) was first published in April 2008. A review of the TAMP will take place in 2010 is annexed to this LTP.

### **Policy HM4: Customer Satisfaction and Continuous Improvement**

The County Council will undertake regular customer satisfaction surveys to help understand the needs of residents and other road users. Satisfaction surveys will be carried out after maintenance work has been undertaken to identify any unresolved problems.

Warwickshire County Council is keen to ensure continuous improvement in highway maintenance activities. This will be achieved by regularly reviewing the service levels and by working with our contractor to identify the most efficient and effective ways to deliver the service. We are also identifying and developing performance indicators, which will be used to monitor success.

### **Public Satisfaction Surveys**

Customer satisfaction surveys are undertaken to enable us understand the needs of residents and other road users. General satisfaction surveys are carried out at two years intervals. These surveys have been repeated at approximately two year intervals. Where it has been possible to compare our results with other authorities, satisfaction with highway maintenance services in Warwickshire appears to be higher than the average results from similar authorities.

Satisfaction surveys are carried out after maintenance work has been completed to help identify any unresolved problems. The customer feedback from these surveys is analysed to identify improvements that can be made in the service delivery processes. Public satisfaction levels are analysed to help us prioritise target areas of work which cause the public most concern.

Targets for improving the levels of public satisfaction have been set, particularly where satisfaction levels have been the lower, e.g. rural carriageways and drainage. The original targets set in 2002 were due to be achieved by 2010. However these are unlikely to be achieved without spending considerably more money than is likely to be available during the LTP3 period.

### **Policy HM5: Streetscape Index**

Through improvements to the quality and condition of pavements, carriageways and street furniture, the County Council will aim to meet the targets which it has set for improving the Streetscape Index for all town centres in Warwickshire.

An innovative approach to assessing town centre environments has been adopted in Warwickshire. It has been recognised that town centre shopping areas need to be attractive places to encourage people to visit them. To help ensure the economic vitality of Warwickshire's town centres and to help reduce the need to travel residents are encouraged to use their local centres rather than travelling to other towns or cities outside the county.

To help encourage people to use their local centres the Streetscape Index has been developed which measures the attractiveness of town centres on a variety of factors including the condition of pavements, carriageways, street furniture etc. Targets are set for improvements to the index over time for all of the town centres in Warwickshire.

#### **Policy HM6: Sustainable Development**

The County Council will aim to undertake all of its highway maintenance work within the context of the principles of sustainability and environmental protection.

Sustainable development issues influence the maintenance policies and activities. The maintenance policies set out in this Strategy take account of the need to reduce casualties, promote more sustainable forms of transport such as cycling and walking, reduce crime and the fear of crime, and use limited resources in the most effective way

Where maintenance needs to be carried out, the general objectives are to ensure:

- A reduction in the volume of waste material produced from roadworks particularly by reducing the amount of reconstruction and patching;
- Working towards a target of zero waste to landfill; and
- Reducing energy used by the maintenance operations.

There are also environmental considerations that are becoming increasingly important to the public which need to be taken into account in the maintenance policies. These include:

- Improving the environment, particularly in town centres, as measured by the streetscape index;
- Where traffic volumes are high, providing road surfaces which reduce noise; and
- Where properties are close to the road, providing surfaces that reduce vibrations.

#### **Policy HM7: Highway Maintenance Contract**

The County Council will use benchmarking with other local authorities and the Highways Agency to identify best value/practice in utilising highway maintenance resources.

The current Highway Maintenance Contract ends in 2011. At the time of writing work is underway to let a new contract for a period of five years with the opportunity to extend it for a further four years.

To help ensure that the highway maintenance money is spent in the best possible way, we undertake benchmarking with other authorities through the Midlands Service Improvement Group (MSIG). The activities being benchmarked through MSIG include Structural Maintenance, Street Lighting, Winter Maintenance, Insurance Claims and New Roads and Streetworks Act activity. By identifying best practice the benchmarking activity helps with the development and revision of policy and the identification of better management practices.

Structural Maintenance includes planned surfacing, reconstruction, surface dressing and slurry sealing activities.

### Policy HM8: Footway Maintenance Activities

The County Council will continue to regularly review the condition of all footways (particularly those with a significant daily or weekly footfall), and undertake maintenance work on those whose condition is likely to cause safety or usage problems.

It is estimated that there are 4000km of footways in Warwickshire. Most new footways, provided they are slurry sealed after about 20 years, should last for at least 40 years before requiring overlaying or reconstructing. In town centres footways tend to be upgraded about every 15 years to improve the environment for pedestrians. The life of block paved or slab footways in town centres is also reduced by constant utility works.

Warwickshire County Council regularly reviews the condition of all footways and undertakes maintenance work on those whose condition is likely to cause problems for regular users. There has been a recent increase in the amount of footway network subjected to a formal prioritised condition inspection which will contribute to a more informed decision making process in prioritising necessary maintenance treatments.

Work programmes take account of the numbers of people using footways and the fact that old people are less able to cope with uneven surfaces than young people. Although there are no known adverse trends in the numbers of trips on footways there are several reasons to believe that there will be a need in the future to improve the overall condition of the footway network. These are:

- Levels of satisfaction with footway condition are lower than for the condition of urban carriageways;
- With the population aging there will be more people in the future who are less able to cope with any uneven paths; and
- Warwickshire County Council is keen to improve conditions for pedestrians to encourage walking rather than using the car (to increase fitness and reduce pollution and congestion)

To help the County Council identify exactly how improved footway maintenance can be most effective it is important to identify the key issues that residents are most concerned about. In order to obtain this information the County Council will carry out an appropriate survey to establish what improvements residents would like prioritised.

It is proposed as part of the development and review of the Warwickshire TAMP, to draw up an age profile of all footways to help us predict future maintenance needs.

### Key Pedestrian Routes

In the same way that carriageways are classified, the footway network is categorised into four distinct groups; the definitions being based upon the guidance in the Code of Practice.

The category 1 footway network was originally based upon very highly used footways in major town centres. It has been reviewed and expanded to incorporate those footways that more reflect the Code of Practice definition. Similarly, the Category 2 footway network has been developed using the same definitions. In future the remainder of the footway network will be categorised as resources permit.

Although there is no longer to formal requirement report the condition of the footway, the County Council believe it is important to continue to monitor the footway condition. Therefore footway inspections will continue to be undertaken to the same criteria as the former best Value Performance Indicator. These inspections will also be carried out on the expanded Category 1 and 2 footway network.

### **Policy HM9: Cycleway Maintenance Activities**

The County Council will continue to consider the needs of cyclists when planning and carrying out maintenance procedures.

Maintenance considerations are also of high importance for cycle routes, as poorly maintained routes are unlikely to encourage more people to cycle. The County Council will ensure that appropriate maintenance regimes are established at the development stage of new off-carriageway cycle routes. Key issues include ensuring overhanging vegetation is cut back and that routes are swept at regular frequencies to keep them free from broken glass and other debris.

## **Routine Maintenance**

The following policies relate to some of the important routine maintenance activities:

### **Policy HM10: Routine Maintenance: Winter Maintenance Activities**

During the winter months, the County Council will treat selected parts of the highway network to prevent the formation of ice, and hence reduce the likelihood and/or severity of casualties resulting from adverse weather conditions.

Further information on the winter maintenance activities are available in the Network Management Duty strategy.

### **Policy HM11: Routine Maintenance: Patching**

The County Council will repair all potholes in carriageways, carriageway edges, footways and cycleways that are felt to be a danger to the travelling public.

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Patching is also used to:

- Restore carriageway profile where settlement has occurred; and
- Repairing or reconstructing areas of carriageway prior to surface dressing or slurry sealing operations.

We have a number of maintenance policies that are designed to reduce the future need for patching. These include

- Improving the structural condition of roads (particularly rural roads);
- Surface dressing roads which have become porous but which are still in a good structural condition to prevent them deteriorating into potholes; and
- Widening selected rural roads that have substantial edge defects due to their inadequate width.

### **Policy HM12: Routine Maintenance: Drainage**

The County Council will empty most drainage gullies at least once a year. Drainage improvements and/or repairs will be treated on a priority basis within the context of potential danger arising from possible flooding.

At present the majority of gullies are emptied at least once a year. A GPS system on the contractor's gully emptier is enabling the Council to gather information that will allow a review of the frequency of gully emptying to be carried out.

Action is taken to ensure blocked drainage systems are cleared. Drainage improvements or major drainage repairs are undertaken on a priority basis, depending on the danger arising from flooding incidents.

### **Policy HM13: Routine Maintenance: Grass Cutting**

The County Council will undertake grass cutting to maintain visibility and to help provide a useable verge for all non-motorised users.

Warwickshire County Council undertakes grass cutting to maintain visibility and to help provide a useable verge for pedestrians. At the time of writing grass is cut up to three times a year. Injurious weeds (particularly Ragwort) are removed during an annual coordinated programme.

### **Policy HM14: Routine Maintenance: Signs and Lines**

The County Council will keep all signs and lines maintained in a safe condition, visible during the day and at night, and free from graffiti. Periodic reviews of all signage will be undertaken to identify where it is no longer serving a useful purpose and where it should be renewed. Damaged or stolen signs will be replaced where they are still required

### **Policy HM15: Safety Inspections**

The County Council will carry out safety inspections of the highway at regular intervals in accordance with the County Highways – Highway Maintenance Safety Inspections Manual.

The County Council's contractor carries out Safety Inspections to a regular programme, covering the whole network at specific frequencies according to the road classification. Undertaking these inspections allow us make a quick and appropriate response to any defects that are found, rather than just relying upon information from the public. One result of this is that it enables more efficient use of remedial resources to be deployed rather than having to respond individually to every single contact or defect that is found.

### **Policy HM16: Public contacts**

The County Council will continue to develop the use of the call centre to ensure that all contact with the general public is dealt with efficiently and effectively.

The County Council encourage public contacts particularly to ensure that we are given early warning of any problems on the highway network. The County Council call centre is utilised to

ensure that we deal with the initial contacts efficiently and effectively. We have developed performance indicators to monitor the success of our contact procedures.

### **Policy HM17: Street Lighting**

The County Council will work with the Police, District/Borough Councils and Parish Councils to maintain the network of street lighting across Warwickshire, in order to ensure the safety of the travelling public and to reduce crime and the fear of crime.

The County Council will continue to work in partnership with the Police and other partners via the Community Safety Partnerships to help identify where lighting improvements can be made. The County Council also work with District and Borough Councils to help make improvements. For example Warwick District council has provided a financial contribution for lighting improvements to ensure that Safety Cameras are able to operate effectively and crime hotspot areas have improved street lighting.

### **Policy HM:18 Electricity Cable renewal**

The County Council will renew electricity cables (owned by the County Council) that provide electricity to lights and signs when the deteriorate and become unreliable.

The local electricity company owns most of the cables, which provide electricity to lights and signs. There are, however, some lengths of cables, particularly on rural roundabouts, which are owned by the County Council. County Council policy is to renew cables when they deteriorate and become unreliable. A number of rural roundabouts have had their cabling replaced in the last 7 – 8 years.

### **Policy HM19: Casualty Reduction**

The County Council will maintain the highway network in a safe condition for all types of road user. In line with the Road Safety Strategy for Warwickshire, the County Council will, where appropriate, use maintenance works and improvements to help achieve casualty reduction targets on specific parts of the highway network in Warwickshire.

An important highway maintenance activity is to maintain the roads in a safe condition for all types of road user. Our wider highway maintenance policies take this important issue into account. Maintenance activities designed to ensure safety include:

- Keeping carriageways and footways free from potholes and other defects;
- Maintaining drainage systems to eliminate standing water on carriageways;
- Gritting and snow clearance;
- Street lighting;
- Grass cutting to maintain visibility;
- Tree maintenance;
- Maintaining signs, lines and road studs; and
- Treating roads to ensure adequate skid resistance.

To ensure that the maintenance activities play a full part in helping to achieve the Council's target of reducing casualties. Maintenance policies are regularly reviewed. Changes identified which help to reduce casualties are implemented where possible

## 16.6 Targets, Indicators and Monitoring

The following National and Local indicators are used to measure our progress in carrying out Highway Maintenance functions:

### 16.6.1 National Indicators

**Principal Road condition (National Indicator 168)** – the percentage of local authority road network where structural maintenance should be considered.

Target to be determined

**Classified Non-Principal Road condition (National Indicator 169)** – the percentage of the local authority Classified Non-Principal road network where structural maintenance should be considered.

Target to be determined

### 16.6.2 Local Indicators

**Unclassified Road condition** – percentage of the local authority unclassified road network where structural maintenance should be considered.

Target to be determined

**Footway condition** – percentage of footway network where structural maintenance should be considered. The footway network inspected to gather data for this indicator has been reviewed to coincide with the newly determined Category 1 footway network and new targets will be set. Where possible, for historic purposes, current indicators will continue to be calculated as a comparator.

In recent years the footway condition has improved reflecting the increased level of investment in footway maintenance. We are committed to further improve the condition of footways to improve conditions for pedestrians by targeted maintenance to minimise and reduce insurance claims.