

BUSINESS & ENVIRONMENTAL SERVICES

HIGHWAYS NORTH YORKSHIRE

HIGHWAY MAINTENANCE PLAN

Policy and Standards – April 2006

Foreword

North Yorkshire Highway Maintenance Plan

The County Council believes that the highway network is a most highly valued asset, and as such its maintenance is a significant factor in ensuring that people and goods move freely, safely and efficiently around the County.

In this context, the Highway Maintenance Plan is a key document in ensuring that those responsible for delivering the service are aware of the County Council's requirements, procedures and processes.

Following the publication of successive Codes of Practice for Highway Maintenance since 1983 the North Yorkshire Highway Maintenance Plan has been developed and is founded on the key principle of Best Value supported by the original themes of a robust regime of safety inspection and a planned investment programme based on whole life costs.

The Plan encourages co-ordination and consistency in the delivery of the local highway maintenance service and aims to facilitate the sharing of best practice. The implementation of this Plan will significantly contribute to the objectives set out in the Second Local Transport Plan (2006-2011) and make North Yorkshire a better place to travel around. It will also 'pave the way' for the delivery of a superior local highway service and contribute to an improved standard of life for everyone in their home area.

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HIGHWAY MAINTENANCE PLAN

EXECUTIVE SUMMARY

The North Yorkshire Highway Maintenance Plan has been developed to conform to the recommendations set out in the national 'Well-maintained Highways Code of Practice for Highway Maintenance Management' published in July 2005 and founded on the key principles of Best Value and continuous improvement.

This policy document is divided into 15 chapters which can be summarised as follows:

PART A – STRATEGY

Introduction – this sets the scene through identifying the vision, goals and values of the County Council insofar as they relate to transportation in general and highway maintenance in particular, and with reference to 'Well-maintained Highways Code of Practice for Highway Maintenance Management'.

Policy Framework – this encompasses the key Best Value requirement for policy integration by linking the Council's aspirations and strategic objectives to the Government's transport policy contained in the 'Ten Year Plan for Transport'. This is more comprehensively considered in the North Yorkshire Local Transport Plan within which highway maintenance has a significant contribution. Delivery of these objectives and policies will be underpinned by a risk management strategy.

Best Value and Continuous Improvement – the Local Government Act 1999 introduced Best Value which has developed into Continuous and Performance Improvement. A process of Comprehensive Performance Assessment using reviews and the use of Best Value Performance Indicators is currently used to appraise performance.

Legal Framework – this reviews the current primary legislation that stipulates the legal requirements for highway maintenance.

Maintenance Strategy and Hierarchy – this comprises the strategy elements of a detailed inventory, a defined hierarchy and policies and objectives linked to maintenance activity types and categories. The hierarchy is the foundation of the strategy and is fundamental in determining policy priorities. However, in order to operate effectively, the strategy should be supported by a comprehensive management system, the level of which is determined by the extent of the defined inventory. Moreover, the Council is committed to the adoption of the United Kingdom Pavement Management System (UKPMS) and the type of survey regime approved will determine how future maintenance strategies are supported.

PART B – STANDARDS

Inspection Assessment and Recording – this defines the inspection and assessment regime detailing safety and service inspections and condition surveys. The checks incorporate items for inspection, frequencies of inspection, defect investigatory levels, risk assessments and defect response times. The North Yorkshire policies on structural condition surveys are outlined. This section comprises the policies and procedures that are fundamental to safety and third party insurance issues.

Condition Standards and Investigatory Levels – linking to the core network objectives of safety, serviceability and sustainability, this section defines the condition at which investigatory levels for maintenance are applicable and the appropriate treatments that may result. It covers all elements of maintenance activity and also includes regulatory functions.

Winter Service – this chapter includes the policy and operational delivery details of the winter service.

Weather and other Emergencies – indicates the planned procedures for dealing with exceptional occasions which can affect the highway network.

PART C – FINANCIAL AND PERFORMANCE MANAGEMENT

Performance Management – this sets out how the County Council is measured in terms of Best Value through benchmarking, performance indicators and performance targets.

Programming and Priorities – this sets within the context of Best Value the establishment of priorities at corporate, departmental and operational levels. Programming and prioritising maintenance works are considered in relation to statutory requirements, core network objectives, maintenance type activities (such as reactive and routine maintenance) and maintenance category elements (such as drainage systems and road markings).

Sustainable Highway Maintenance – defines the policy and operational procedures to ensure that sustainable development principles are embedded within the delivery of highway maintenance.

Procurement and Service Delivery – this defines how maintenance activities are undertaken in North Yorkshire through Highways North Yorkshire and its partnering arrangements and the agent authorities within Scarborough and Harrogate. This comprises client management undertaken by the County Council and Agent District Authorities, an Engineering Consultancy service support contract delivered by Jacobs Consultancy and a partnered works contract delivered by Balfour Beatty. Separate arrangements operate within Scarborough and Harrogate agency areas. This procurement strategy takes into account the implementation guide ‘Rethinking Construction’, fundamental for securing Best Value.

Financial Management – this sets out the financial procedures to be adopted by the Agent District Authorities under the partnering arrangements. It defines the budget allocation procedure in respect of special maintenance, basic maintenance and capital maintenance and specifies the procedures for dealing with claims and rechargeable works.

Whereas the Highway Maintenance Plan sets out the policies and objectives underpinned by the Risk Management Strategy, guidance on how risk assessments are translated into maintenance works are contained in the ‘North Yorkshire Code of Practice for Highway Safety Inspections’.

The adoption of this Code together with appropriate training of all inspectors will enable effective risk assessments to be undertaken on site.

BUSINESS & ENVIRONMENTAL SERVICES

HIGHWAY MAINTENANCE PLAN

PART A – STRATEGY

1. INTRODUCTION

1.1 THE NORTH YORKSHIRE APPROACH

The County of North Yorkshire covers 800,000 hectares (3200 square miles) with a highway network of over 9500 km (6000 miles) of roads. The County Council is responsible for providing services to over half a million people including management of the highway network. The County Council also works in partnership with the Borough Councils who act as agents for highway maintenance in Harrogate and Scarborough urban areas.

The County Council seeks to provide a high quality service with the aim to work with and support the people of North Yorkshire to fulfil our mission to be a "responsive and caring County Council providing good quality and efficient services". This aim is expressed through a simple and clear vision statement:

"A County which provides opportunity, independence and security for all"

The successful management of the highway network is fundamental to the ability of the County Council to deliver this vision. The highway network is essential to the economic, social and environmental well being of the community. Consequently the use of appropriate management systems is essential in achieving this.

1.2 CODE OF PRACTICE FOR HIGHWAY MAINTENANCE MANAGEMENT

The most recent Code of Practice for Highway Maintenance Management entitled 'Well - maintained Highways', published in July 2005 by the Roads Liaison Group, which supersedes previous editions back to the original version in 1983, is founded on the key principles of Best Value, that services should be based upon the needs of users and the community rather than the convenience of service providers. It has also been designed to facilitate the conduct of Best Value Reviews including highway maintenance, and to provide a stimulus to the pursuit of improvement.

The importance of highway maintenance and its relevance to the integrated transport agenda is widely recognised and it is important that the service is closely integrated, not only with overall transport policy, but also with other key areas of policy.

Maintenance policy and practice should be sufficiently flexible to respond and add value to a wide range of local circumstances, whilst retaining the level of consistency expected by users, particularly for those parts of the network serving more than a local function.

The object of the Code is to encourage co-ordination and consistency in the delivery of local highway maintenance services and to facilitate sharing of developing best practice. The Code comprises a framework of guidance and standards that, if generally applied, should contribute significantly to the achievement of this objective.

The duty of Best Value means regular review, comparing performance and challenging present arrangements in order to secure continuous improvement or 'step change' in pursuing defined outcomes and this requires a robust regime of performance indicators, benchmarks and targets. The broadly based performance improvement agenda of Comprehensive Performance Assessment has evolved from Best Value with due consideration within this Plan.

A key area of the Best Value regime is that of procurement, with the expectation that reviews should specifically consider the potential for competition in service delivery. Consideration should be given to 'Rethinking Construction' arising out of the Egan Report with the emphasis on new forms of partnering arrangements including public-private partnerships.

The Government's Efficiency Review undertaken by Sir Peter Gershon during 2004 has promoted increased stimulus for review in the delivery of services.

The strong focus on the needs of users rather than providers brings a requirement for greater emphasis on consulting and involving users, and will need careful local consideration of how to undertake this most effectively for such a wide ranging and complex service.

Finally, the importance should be stressed of the need for highway maintenance to meet the challenge of sustainability. This requires that the wider economic, social and environmental implications of both the service and its individual schemes are first of all understood, and then modified as far as practicable to ensure Best Value outcomes for the community.

The County Council fully endorses the principles of the Code of Practice and will seek to ensure that all highway maintenance activities in North Yorkshire are undertaken in accordance with the requirements of the Code.

1.3 PURPOSE AND SCOPE

The objectives of the new Code of Practice and, therefore, the objectives of this Highway Maintenance Plan are:

- to encourage the adoption of asset management planning as a means of demonstrating value for money in the delivery of highway maintenance.
- to encourage the development, adoption and regular review of policies for highway maintenance, consistent with the wider principles of integrated transport, sustainability and Best Value.
- to encourage a focus on the needs of users and the community and their active involvement in the development and review of policies, priorities and programmes.
- to encourage harmonisation of highway maintenance practice and standards where this is consistent with users expectations, whilst retaining reasonable diversity consistent with local choice.
- to encourage the adoption of an efficient and consistent approach in the collection, processing and recording of highway inventory, highway condition and status information for the purpose of both local and national needs assessment, management and performance monitoring.
- to encourage the adoption and regular review of a risk management regime in the determination of local technical and operational standards, rectification of defects arising from safety and serviceability inspections, and investment priorities.
- to encourage innovation in the procurement of highway maintenance contracts, whilst complying with the high standards of corporate governance.

Although the main purpose of highway maintenance is to maintain the highway network for the safe and convenient movement of people and goods, this needs to be set within

the wider context of integrated transport, Best Value and the corporate vision of the County Council.

The principles that underpin and define the objectives of highway maintenance are:

a) Network Safety

1. Complying with statutory obligations
2. Meeting users' needs for safety

b) Network Serviceability

1. Ensuring availability
2. Achieving integrity
3. Maintaining reliability
4. Enhancing condition

c) Network Sustainability

1. Minimising cost over time
2. Maximising value to the community
3. Maximising environmental contribution.

The scope of the highway maintenance service is very wide ranging and encompasses the following types of activity:

- Reactive – responding to inspections, complaints or emergencies
- Routine – regular consistent schedule for patching, cleaning, landscape maintenance and other activities
- Programmed – planned schemes, primarily of resurfacing, reconditioning or reconstruction
- Regulatory – inspecting and regulating the activities of others
- Winter Service
- Weather and other emergencies

All technical and operational standards contained in this Highway Maintenance Plan are for guidance as investigatory levels only. Decisions for action must be taken in accordance with the risk management strategy of the County Council.

1.4 AIMS AND DUTIES

The County Council has a duty as the local highway authority for the County of North Yorkshire, excluding the City of York and motorways and trunk roads, to ensure that all roads and footways are maintained in a safe condition having regard to the amount and nature of the traffic using them. It is also the aim to provide a road network with a condition and environment that are acceptable to the people of North Yorkshire and the travelling public. In the pursuit of this aim, the County Council is committed to ensuring that all funds available for the service are used as effectively as possible.

To undertake this duty and in seeking to achieve these aims, the following strategies have been incorporated:

- to monitor the proportion of the maintenance budget spent on programmed structural maintenance to bring it in line with the national average.

- to continue to give a high priority to the Principal Road Network, heavily trafficked routes and areas of high pedestrian usage.
- to engage in regular consultations with users to ascertain views, needs and priorities.
- to programme and prioritise works, having taken into account the results of user consultations, consistent with the risk management strategy.
- to maximise expenditure on works on the highway, whilst ensuring that sufficient and appropriate data is collected to enable informed decisions on priorities for expenditure to be taken.
- to continue to develop the use of condition data and other management information in accordance with the development of UKPMS.
- to develop a Transport Asset Management Plan (TAMP) as part of the Local Transport Plan 2 process.
- to ensure that highway maintenance activities are undertaken in accordance with the principles of the 'Well-maintained Highways Code of Practice for Highway Maintenance Management' as contained in this Maintenance Plan.

2. POLICY FRAMEWORK

The planning and delivery of services will be integrated within the wider aims and objectives of the corporate vision and co-ordinated with other business objectives. This is crucial in ensuring a high quality service that offers good value for money to the people of North Yorkshire.

2.1 STRATEGIC OBJECTIVES

In developing the vision for North Yorkshire the County Council decided on seven key objectives which form the basis of the Corporate Plan:

- **Security for all** - by promoting safe, healthy and sustainable communities
- **Growing up prepared for the future** - through good education and care and protection when it is needed
- **Independence** - through employment, opportunity and appropriate support
- **Keeping us on the move** - with good roads and a safe and reliable transport system
- **Strengthening our economy** - by supporting business, developing our infrastructure, investing in powerful telecommunications and helping people improve their skills.
- **Looking after our heritage and our environment** - in our countryside and our towns and villages
- **Keeping in touch** - by listening to your views, planning to meet your needs and by telling you what we are doing.

Highways North Yorkshire can contribute to achieving the County Council objectives by focusing on the achievement of four specific business unit objectives. These have been developed to maximise the contribution towards the seven key objectives and corporate vision.

The four objectives are:

- To keep the highway network safe and well maintained at all times of the year
- To reduce congestion on the network by co-ordinating the works programmes of all those organisations affecting the network

- To apply the principles of sustainable development via the increased use of low noise surfacing, recycled materials and by the adoption of a whole life costing strategy for treatment identification and selection
- To manage and monitor service performance and improvement through the effective use of performance management tools

These objectives will form the basis in the development of policy and strategy, however four other elements shall also be taken into consideration: Integrated Transport Strategy, Best Value principles including Promoting Continuous Improvement, Risk Management principles and Legislation.

The theme of strategic policy integration is continued in Government transport policy. The Ten Year Plan for Transport is intended to support and contribute to long term Government objectives within which highway maintenance is placed as a key priority for investment.

Although highway maintenance is a contributory element to some of the challenges and targets in the Plan, the key challenges are:

- eliminating the maintenance backlog for local roads, bridges and street lighting
- halting the deterioration in local road condition by 2004, and eliminating the backlog by the end of the Plan period

Highway maintenance policy should be developed integrally with the overall management of the network so that the whole is managed holistically to provide consistent and appropriate levels of service through all the modes of transport and their constituent activities.

Managing highway maintenance needs to be consistent with arrangements for managing the authority's wider asset base such as land and property set within the context of an asset management regime. The key principles of asset management are:

- focus on lifecycle costing
- management strategies for the long term
- establishing and monitoring levels of service
- managing risk of failure or loss of use
- sustainable use of physical resources
- continual improvement.

2.2 INTEGRATED TRANSPORT STRATEGY

In accordance with the requirements of the Local Transport Plan 2 guidance the County Council has prepared a Local Transport Strategy for North Yorkshire. This sets out details of how transport can contribute towards the longer term (10-15 years) vision for North Yorkshire as set out in other planning documents, such as the North Yorkshire Community Strategy, North Yorkshire Council Plan and the Regional Spatial Strategy.

Within the Local Transport Strategy the County Council has adopted a Vision, Aims and Objectives for Transport in the County over the next 10–15 years. The purpose of the Local Transport Plan 2 is to set out policies, procedures and targets for the five-year

period 2006–2011, which will contribute towards achieving the Vision, Aims and Objectives etc.

VISION

Better access and sustainable communities for all.

AIMS

To make North Yorkshire a better place:

- providing equality of opportunity for all
- protecting and enhancing the environment
- improving the safety and health of residents and visitors
- increased economic prosperity
- building sustainable communities
- reducing the need and demand for travel

OBJECTIVES

- **Accessibility** – To ensure good access to key services (Education, Health, Food, Employment, Recreation and Tourism) for everyone.
- **Safety** – To improve safety for all highway users.
- **Environment** – To enhance the natural and built environment through the appropriate provision of services and transport and where necessary protect it from the impacts of these provisions.
- **Congestion** – To ensure that traffic congestion, and its adverse environmental and social effects, is minimized in both rural and urban areas.
- **Quality of Life** – To ensure that transport provision contribute towards the promotion of healthy and sustainable communities.
- **Economy** – To provide and maintain an efficient transport network contributing towards increased economic prosperity for everyone.
- **Efficiency** – To ensure that the management and maintenance of the transport infrastructure contributes towards the efficient use of resources.

2.3 ASSET MANAGEMENT

The development of a Transport Asset Management Plan is fundamental to demonstrating the value of highway maintenance in delivering the wider objectives of corporate strategy, transport policy and value for money.

The Department for Transport as part of the Local Transport Plan 2 process requires that highway authorities report on the progress achieved in the development of a Transport Asset Management Plan in the Annual Progress Report.

The key components of the Transport Asset Management Plan under development and due for completion during 2006 are as follows:

- Introduction
- Levels of Service
- Service Options
- Lifecycle Plans
- Financial
- Risk Management
- Forward Work Programme

- Performance Monitoring
- Improvement Action Plan

In addition to supporting the Local Transport Plan 2, the Transport Asset Management Plan will assist the 2006/07 Whole Government Accounting protocol currently under development.

2.4 RISK MANAGEMENT

Risk management is defined as “the identification, measurement, control and financing or risks, which threaten the existence, the assets, the earnings or the personnel of an organisation or the services it provides.” Risk management is recognised as an integral part of good management practice. The process of risk management consist of steps, which when undertaken in sequence, enable continual improvement in decision making.

The main elements of the risk management process will consist of the following:

- **Establish the context** – the strategic, organisational and risk management context.
- **Identify risks** – what, why and how things can arise.
- **Analyse risks** – consider the range of potential consequences and how likely those consequences are to occur.
- **Evaluate risks** – compare and rank the level of risks so as to identify management priorities.
- **Treat risks** – develop and implement a specific management plan to control or reduce the impact of the risks.
- **Monitor and review** – monitor and review the performance of the risk management system and changes which might affect it.
- **Communicate and consult** – at each stage of the risk management process communicate and consult with both internal and external stakeholders concerning the process as a whole.

The sources of risk are divided into two broad categories:

- **Strategic** – these are hazards and risks which relates to medium to long term goals and objectives of the authority. Such risk may be political, economic, social, technological, legislative, environmental, competitive and customer/citizen/stakeholder.
- **Operational** – these are hazards and risks which managers will encounter in the work on a day by day basis such as financial, legal, physical, contractual, technological or environmental.

In regard to highway liability, highway authorities have an absolute duty to maintain highways pursuant to S41 of the Highways Act 1980 although a ‘special defence’ exists under S58 of the Act. This allows authorities to successfully defend actions arising from accidents that occurred due to the condition of the highway where the authority can demonstrate it acted ‘reasonably’. Clearly risk management is an integral element of being able to demonstrate reasonableness. All highway maintenance activities, whether the management or the operation, should be undertaken against a clear and comprehensive understanding and assessment of the risks and consequences involved. The highest profile risks affecting the highway maintenance service are those relating to the safety of the network and accident, injury or health risks to users including employees.

There is a wide range of other risks relating to network serviceability and sustainability including:

- network loss or serious failure
- operational
- environmental
- financial
- contractual.

The understanding and management of risk is fundamental to the effective organisation of highway maintenance. Risk assessment is fundamentally the structured and systematic expression and recording of collective good judgment based on the best available data.

North Yorkshire County Council has a Risk Management Strategy, which has adopted the use of a Risk Prioritisation System 'RIS GEN'

3. BEST VALUE AND CONTINUOUS IMPROVEMENT

From 1 April 2000 the new duty of Best Value was placed on local authorities in respect of the funding, procurement and delivery of all services. It requires authorities to:

- ensure that services are responsive to the needs of the community not the convenience of service providers
- secure continuous improvement in the exercise of all functions, whether statutory or not, having regard to a combination of economy, efficiency and effectiveness.

The Government stated that Best Value could lead to "genuine and long term improvements in the social, economic and environmental well being of communities", which is reflected by the requirement to produce a community strategy.

The principles of Best Value are particularly relevant to highway maintenance for the following reasons:

- highways are a major public asset highly valued by the community
- maintenance attracts a high level of public interest and concern
- performance indicators have historically been difficult to quantify
- there has tended to be no robust framework for local comparison
- there has been an inefficient approach to whole life costing
- there is a wide and developing range of service delivery options.

Best Value has developed through the process of Comprehensive Performance Assessment (CPA) which focuses on the corporate and service performance of the authority, promising greater flexibility in return for performance improvement.

The involvement of highway users and the community during a Best Value consultation exercise is both desirable and relevant and is essential in generating understanding in order to pursue Best Value. Consistency of standards is also an important element in delivering Best Value. There must be consistent standards demonstrated by the County Council and its Agent Authorities and, moreover, there should be reasonable consistency with the networks maintained by housing authorities or other agencies. The County Council and its Agents will move towards adopting a standard computer system

throughout to record inspections, which can then be assessed by insurance/legal services to deal with claims.

Authorities need to demonstrate Best Value through the process of Promoting Continuous Improvement Reviews involving:

- Focused reviews on services where the effort and resources put into the review balance the potential gains
- Publishing a corporate Best Value Performance Plan each year
- Independent assessment through Corporate Performance Assessment

The Performance Improvement Framework incorporates three categories of review and performance work i.e. (a) executive and management action (b) scrutiny review and (c) improvement review.

The 4 Cs (Challenge, Compare, Consult and Compete) are the foundation upon which reviews are developed and each of these must be fully examined and incorporated into the process. Authorities need to show that for every review their process is:

- challenging why and how the service is being provided and also challenging current levels of economy, efficiency and effectiveness
- comparing their performance with others through local, regional and national benchmarking networks
- consulting with users and the wider community in regard to service provision with regular sampling of opinion in respect of specific schemes and projects
- embracing fair competition as a means of securing efficient, effective and economic services having regard to 'Rethinking Construction'. As all services should support the key corporate objectives and priorities of the County Council, it is important that service reviews should:
 - a) identify all areas of interaction of highway maintenance with each of the key corporate objectives of the Council
 - b) investigate and pursue added value when opportunities arise through these interactions
 - c) investigate and resolve conflicts which arise through these interactions.

The goal of Best Value to secure continuous improvement will only be effective in an organisation that is able to embrace change, encourage risk and innovation, and is able to learn from both its successes and failures. As continuous improvement will be measured through performance indicators, benchmarking and targets, these will clearly need to be appropriate and meaningful.

The process of Best Value within North Yorkshire County Council is detailed in the NYCC Manual of Best Value and Performance Management Procedures and NYCC Performance Improvement Toolkit.

The authority embraces the principles of competition in procuring the delivery of services. Comparison and consultation shall be exercised to ensure efficiency.

Added value to the corporate objectives continues to be the primary focus of the Best Value/Comprehensive Performance Assessment process.

Improvements in the provision of information and publicity are under development. It is intended to make information on policy and standards available to the public.

Information is currently made available using the authority's website for inconvenience and disruption caused by both authority and utility roadworks.

Corporate procedures are currently deployed to manage compliments, complaints and claims. A call centre and website for network defects is under development.

In the pursuit of continuous improvement, both client and provider organisations build pride in the service by the implementation of people management processes including appraisal, training and development and 'investors in people'.

4. LEGAL FRAMEWORK

Much of highway maintenance activity is based upon statutory powers and duties contained in legislation and precedents developed over time as a result of claims and legal proceedings. It is crucially important that all those involved in highway maintenance, including Council Members, have a clear understanding of their powers and duties, and the implications of these.

Even in the absence of specific duties and powers, authorities have a general duty of care to users and the community to maintain the highway in a condition fit for its purpose. This principle should be applied when developing policy and strategy.

In addition to a general Duty of Care, there are a number of specific items of legislation providing the basis of powers, duties and responsibilities relating to Highway Maintenance, regulating the environmental effects of operations and Health and Safety:

The Highways Act 1980

The New Roads and Street Works Act 1991

Road Traffic Regulations Act 1984 and the Traffic Signs and General Directions 2002

Road Traffic Act 1988

Road Traffic Reduction Act 1997

The Local Authorities (Transport Charges) Regulations 1998

The Transport Act 2000

Traffic Management Act 2004

Railways and Transport Safety Act 2003

National Parks and Access to the Countryside Act 1949

Countryside Act 1968

Wildlife and Countryside Act 1981

The Environmental Protection Act 1990

The Weeds Act 1959

Ragwort Control Act 2003

Rights of Way Act 1990

Countryside and Rights of Way Act 2000

European Water Framework Directive 2000

The Clean Neighbourhoods and Environment Act 2005

The Environmental Assessment of Plans and Programmes Regulations 2004

The Health and Safety at Work Act 1974

Management of Health and Safety at Work Regulations 1992

Construction (Design and Management) Regulations 1994

There is also further legislation not specifically related to highways, street and traffic functions, but dealing with wider community issues that may affect the service we provide:

Local Government (Miscellaneous Provisions) Act 1982

Town and Country Planning Act 1990

Disability Discrimination Act 1995

Criminal Justice and Public Order Act 1994

Human Rights Act 1998

Freedom of Information Act 2000

Local Government Act 2000

Civil Contingencies Act 2004

In the development of policy and strategy the first priority will always be to ensure compliance with our statutory duties and fulfilling our duty of care.

5. MAINTENANCE STRATEGY AND HIERARCHY

5.1 PRINCIPLES AND OBJECTIVES

Highway maintenance will be undertaken with a systematic logical approach based upon a strategy developed in accordance with the principles of Best Value. Delivery of the strategy is dependent on the relationship between LTP2, 'Well-maintained Highways Code of Practice for Highway Maintenance Management', the CSS Framework for Asset Management and the delivery of the operational aspects of maintenance. The principles of the strategy are:

- to deliver the statutory obligations of the County Council
- to be responsive to the needs of users and the community
- to provide effective management of the highway network and maintain the asset value
- to support effective delivery of the statutory network management duty
- to support and add value to local transport objectives
- to support and add value to wider policy objectives.

The service provided by the infrastructure shall in future be co-ordinated within the development of a Transport Asset Management Plan (TAMP) which is under development.

These principles are incorporated into the maintenance regime with the three core objectives of:

- network safety
- network serviceability
- network sustainability.

These core objectives are to be set within a comprehensive asset management regime based on:

- effective risk management
- needs based budgeting
- competitive service delivery management.

These objectives will also provide the basis for establishing the outcomes with which performance can be measured. The framework, upon which both performance and continuous improvement can be measured, essential for Best Value requirements, is through the development of appropriate performance indicators, benchmarking and targets. These are discussed later in the document.

The component elements of the strategy are:

- a detailed inventory of all relevant components to be maintained
- a defined hierarchy for all elements of the network
- a robust framework of levels of service linked to core objectives.

For the strategy to operate effectively, these key elements need to be supported by:

- a comprehensive management system for inspecting, recording, analysing prioritising and programming maintenance works so as to optimize their asset management condition.
- a risk management strategy clearly identifying and evaluating the risks and consequences of investment decisions and measures to mitigate them.
- arrangements to finance, procure and deliver maintenance works in accordance with the principles of sustainability and Best Value.
- arrangements to monitor, review and update as necessary each component of the strategy and the performance of the strategy as a whole in delivering the core objectives.

A further key principle is that the strategy should support and add value to the County Council's wider corporate objectives.

The maintenance strategy will be incorporated into all other highway activities in order for proper co-ordination to occur, thereby ensuring that future maintenance needs are fully considered. In this regard, a maintenance audit process will be set up and will include some or all of the following items for all highway schemes:

- What is the estimated design life?
- Is this design life compatible with the adjacent infrastructure?
- Are the design and materials suitable for the predicted traffic use?
- Can the materials be readily replaced throughout the design life?
- Can the materials be satisfactorily re-laid after utility works?
- Are the materials liable to fading or discolouration?
- Can the surfaces be cleaned?
- Can the infrastructure be easily accessed for maintenance purposes?
- Could tree planting be redesigned to avoid future obstruction to signs or visibility and consequently maintenance requirements?

5.2 MAINTENANCE MANAGEMENT SYSTEM

A computerised maintenance management system is an essential tool in managing the large volumes of data associated with the highway network together with modelling analytically the needs, options and priorities for maintenance strategies and programmes. These systems are known as Management Information Systems.

The current system adopted in North Yorkshire uses the Highways by EXOR suite of Management Information Systems which holds all Coarse Visual Inspection (CVI), Detailed Visual Inspection (DVI), Sideways Coefficient Routine Investigation Machine (SCRIM), Griptestter, Deflectograph, Ground Penetrating Radar (GPRS) and Surface Condition Assessment of the National Network of Roads (SCANNER) survey condition data, in addition to Highway Inventory.

In addition to the highway maintenance information the system also holds the accident database and both street lighting and bridges (structures) inventories.

North Yorkshire condition and asset data is provided by both machine and visual surveys in accordance with national guidelines and specifications.

The data collection requirements are reviewed annually and as a minimum will be sufficient to enable all network condition BVPIs to be reported. However, the council will undertake additional surveys in order to monitor other elements of network condition (e.g. In service skid resistance). More detailed assessments will be taken in order to develop annual programmes of maintenance treatments.

The data collection strategy for the 2006/07 financial year, which will assist in programmes from 2006 onwards, is:

CONDITION ASSESSMENT SCHEDULE 2006/07

SCANNER

Principal A roads	(100% of network in one direction) – annual survey
Non Principal B roads	(100% of network in one direction) – annual survey
Non Principal C roads	(10% of network in one direction) – annual survey

CVI

Non Principal C roads	(50% of network) – annual survey
Unclassified roads	(25% of network) – annual survey

SCRIM – Category 2, 3a & 3b - 100% of network in both directions

GRIPTESTER – Investigation of Category 2, 3a and 3b roads below investigatory level

GPRS – Category 3a and 3b Roads – ad hoc survey for information purposes

DVI

Category 1, 1a and 2 footways	(50% of network) – annual survey
Category 3 and 4 footways	(25% of network) – annual survey

INVENTORY SURVEY

As a matter of routine, minimal inventory data will be collected on all footway DVIs. The overall inventory data collection strategy is currently being reviewed as part of the development of the councils TAMP.

ANALYSIS OF CONDITION DATA

Ultimately, the County Council is committed to the adoption of the United Kingdom Pavement Management System (UKPMS), and in this regard, the UKPMS module will be linked to the North Yorkshire PMS using the same base data, maps etc.

The automatic processing of UKPMS (known as the Automatic Pass) provides the key function of translating recorded pavement condition across the network to a prioritised schedule of treatment lengths with a recommended treatment option and associated cost for each length.

This processing draws upon both the physical data for the network – condition data, network and inventory information – and also the engineering parameters and rules, for example defining the relationship between pavement condition and treatment.

The analysis process of the selection and prioritisation of treatments involve a number of separate key elements which are:

- defects
- rating of defects
- condition indices
- condition projection
- system intervention levels
- treatments
- treatment selection rules
- prioritisation of treatment lengths.

5.3 NETWORK INVENTORY

Highway inventory is the collection and recording of the highway asset in terms of the number and locations of the items to be maintained. The following are examples:

- carriageway – length, width and surface type
- gullies – type and location
- signs – sign type, height, mounting bracket and location
- road markings – type and location

A basic highway inventory is essential in order to allocate funds for the various activities, to calculate unit costs and to submit requisite information to Government each year on road lengths maintained, which is used for the calculation of Formula Spending Share and Revenue Support Grants. Moreover, there is a requirement under The New Roads and Street Works Act 1991 to maintain information on traffic sensitive streets, structures of special engineering difficulty and reinstatement categories.

All information needs to be linked to the geographic location of the applicable carriageway and in North Yorkshire the total carriageway in lane length terms has not yet been quantified using the digitised road centreline network (NYCC OSCAR data). This development and that of developing both a network inventory and a Transport Asset Management Plan, will be managed as simultaneous projects.

In order to fully meet the requirements of Best Value as well as establishing a cost effective and appropriate maintenance regime, a detailed computerised highway inventory is a pre-requisite. This would provide the required base data necessary for the assessment, prioritisation, programming and subsequent service delivery of a cost effective highway maintenance service.

It is proposed that North Yorkshire will move towards a fully computerised highway inventory system by the year 2009/2010. Commencing data collection in early 2005 as part of a cyclical data collection strategy covering 25% of all road classifications over a four-year period.

The following items will be recorded:

Carriageway	Surfacing type Width
Cycle track	Surfacing type Width
Footway	Surfacing type Width
Gully	Presence of a gully
Kerb	Material type
Lay-by	Surfacing type Width
Signs	Diagram number Mounting method
Pedestrian crossing	Type
Markings	Material type
Road hump	Material type
Lines hatched	Width Diagram number
Lines longitudinal	Diagram number
Road markings	Diagram number
Road studs	Type Spacing Colour
Verge	Width Surfacing type
Crossover	Surfacing type Width
Inspection covers (carriageway)	Presence of cover
Safety fence	Material type Tension type Profile Post type
Traffic/central island	Surfacing type Width

5.4 NETWORK HIERARCHY

A network hierarchy is a means of classification whereby the maintenance network is categorised on the basis of the volume and composition of traffic using it whilst

recognising the difference in traffic levels between urban and rural roads. The hierarchy should also take account of risk assessment and the role of the particular section of the carriageway, footway or cycleway in the network.

The hierarchy is the foundation of a coherent, consistent and auditable maintenance strategy and is fundamental in determining policy priorities. It is the link between maintenance policy and implementation and will assist in determining standards for design and new construction.

It is important that hierarchies are regularly reviewed to reflect changes in network characteristics and use so that maintenance policies, practices and standards reflect the actual current use of the network. Accordingly, the County Council will review the hierarchies on an annual basis.

The aim of the road hierarchy is to:

- allow programmes of inspections to be set to enable statutory duties to be fulfilled
- allocate resources according to the importance of the road within the network
- set policies and standards according to the importance of the road within the network.

It is the intention to use the hierarchy as an indication of the standard of repair required to keep the road in reasonable condition having regard to its function and the volume of traffic using it.

The network hierarchy is sub-divided into three sections to cover carriageways, footways and cycleways, and the local hierarchies for North Yorkshire in 2005-06 are as follows:

Carriageways

Category	Hierarchy Description	Type of Road General Description	Detailed Description
1	Motorway	Not applicable	Not applicable
2	Strategic Route	Trunk and some Principal A roads between Primary Destinations	Routes for fast moving long distance traffic with little frontage access or pedestrian traffic. Speed limits are usually in excess of 40mph and there are few junctions. Pedestrian crossings are either segregated or controlled and parked vehicles are generally prohibited.
3a	Main Distributor	Major Urban Network and Inter-Primary Links. Short to medium distance Traffic	Routes between Strategic Routes and linking towns to the strategic network with limited frontage access. In urban areas speed limits are usually 40mph or less, parking is restricted at peak times and there are positive measures for pedestrian safety.
3b	Secondary Distributor	B and some C class roads. Some unclassified urban bus routes carrying local traffic with frontage access and frequent junctions	In rural areas these roads link the larger villages and industrial sites to the Strategic and Main Distributor Network. In built up areas these roads have 30mph speed limits and very high levels of pedestrian activity with some crossing facilities. On street parking is generally unrestricted.
4a	Link Road	Roads linking between the Main and Secondary Distributor Network	In rural areas these roads link the smaller villages to the distributor roads. In urban areas they are residential or industrial or inter-connecting roads with 30mph speed limits, random pedestrian movements and uncontrolled parking.
4b	Local Access Road	Roads serving limited numbers of properties carrying only access traffic	In rural areas these roads serve small settlements and provide access to individual properties and land. They are sometimes only single lane width and unsuitable for HGV. In urban areas they are often residential loop roads or culs de sacs.
5	Back Street	Roads serving limited numbers of properties	Only applicable to urban areas, will typically be the rear access road to terraced properties
6	Unsurfaced Road	Roads serving limited numbers of properties	Only applicable in rural locations includes those roads locally known as 'Green Lanes' or 'County Roads'.

Footways

Category	Hierarchy Description	Description
1a	Prestige Pedestrian Zone	Pedestrianised areas
1	Primary Pedestrian Route	Busy town centre shopping and business areas, and main pedestrian routes linking transport interchanges to the town centre.
2	Secondary Pedestrian Route	High usage routes connecting a number of residential areas and providing access to the primary routes, shopping centres, large schools, leisure complexes and industrial centres.
3	Link Footway	High/Medium usage routes providing a link for a residential area to the primary and secondary walking routes.
4	Local Access Footway - Urban	Urban low usage footways, usually on housing estates.
5	Local Access Footway - Rural	Rural, Low usage, usually between villages

Cycleways

Category	Description
A	Cycle route or lane forming part of the carriageway, commonly 1.5 metre strip adjacent to the nearside kerb. Cycle gaps at road closure points with exemptions for cycle access.
B	Cycle track, a route not contiguous with the public footway or carriageway. Shared cycle/pedestrian paths, either segregated by a white line or other physical segregation, or unsegregated.
C	Cycle trails, leisure routes through open spaces, not necessarily the responsibility of the highway authority (may be surfaced in unbound materials).

The carriageway hierarchy was derived from a review of the current traffic flows as indicated within the following tables:

TRAFFIC FLOW TABLES

INDICATIVE

Description	AADT	
	Urban	Rural
1 Motorways		
2 Strategic Routes	20000+	13000+
3a Main Distributor	6500+	3000+
3b Secondary Distributor	3000+	2000+
4a Link Road	1300+	500+
4b Local Access Road	650+/-	200+/-

Rural Network						
Two way AADT 24 hour	Flow HCVs & buses	85th percentile speed (mph) Maintenance category				
		30	40	50	60	70
Over 9300	<u>Over 930</u>	3a	3a	2	2	2
	<u>400 – 930</u>	3a	3a	3a	2	2
	<u>130 – 400</u>	3b	3a	3a	3a	2
	<u>50 – 130</u>	3b	3b	3a	3a	3a
	<u>Up to 50</u>	3b	3b	3b	3a	3a
5500 – 9300	<u>Over 930</u>	3a	3a	3a	2	2
	<u>400 – 930</u>	3b	3a	3a	3a	2
	<u>130 – 400</u>	3b	3b	3a	3a	3a
	<u>50 – 130</u>	3b	3b	3b	3a	3a
	<u>Up to 50</u>	4a	3b	3b	3b	3a

Rural Network						
Two way AADT 24 hour	Flow HCVs & buses	85th percentile speed (mph) Maintenance category				
1300 - 5500	<u>Over 400</u>	3b	3a	3a	3a	3a
	<u>130 – 400</u>	3b	3b	3b	3a	3a
	<u>50 – 130</u>	4a	3b	3b	3b	3a
	<u>Up to 50</u>	4a	4a	3b	3b	3a
930 – 1300	<u>Over 400</u>	4a	3b	3b	3a	3a
	<u>130 – 400</u>	4a	3b	3b	3b	3a
	<u>50 – 130</u>	4a	4a	3b	3b	3b
	<u>Up to 50</u>	4b	4b	4a	4	3b
Under 930	<u>Over 130</u>	4a	4a	3b	3b	3b
	<u>50 – 130</u>	4b	4a	4a	3b	3b
	<u>Up to 50</u>	4b	4b	4a	4a	3b

Urban Network						
Two way AADT 24 hour	Flow HCVs & buses	85th percentile speed (mph)				
		Maintenance category				
		30	40	50	60	70
Over 27000	<u>Over 4000</u>	3a	3a	2	2	2
	<u>2700 – 4000</u>	3a	3a	2	2	2
	<u>1300 – 2700</u>	3b	3a	3a	2	2
	<u>650 – 1300</u>	3b	3a	3a	3a	2
	<u>Up to 650</u>	3b	3a	3a	3a	2
13000 – 27000	<u>Over 2700</u>	3a	3a	2	2	2
	<u>1300 – 2700</u>	3b	3a	3a	2	2
	<u>650 – 1300</u>	3b	3b	3a	3a	3a
	<u>270 – 650</u>	3b	3b	3b	3a	3a
	<u>Up to 270</u>	3b	3a	3a	3a	3a
6500 – 13000	<u>Over 1300</u>	3b	3a	3a	3a	2
	<u>650 – 1300</u>	3b	3b	3a	3a	3a
	<u>130 – 650</u>	3b	3b	3a	3a	3a
	<u>Up to 130</u>	3b	3b	3b	3a	3a
2700 – 6500	<u>Over 650</u>	3b	3b	3b	3a	3a
	<u>330 – 650</u>	4a	3b	3b	3b	3a
	<u>130 – 330</u>	4a	3b	3b	3b	3a
	<u>Up to 130</u>	4a	4a	3b	3b	3b
Under 2700	<u>Over 200</u>	4a	4a	3b	3b	3b
	<u>130 – 200</u>	4b	4a	4a	3b	3b
	<u>Up to 130</u>	4b	4b	4a	4a	3b

HCV – Heavy Commercial Vehicle defined as any vehicle with a gross weight of over 7.5 tonnes.

5.5 MAINTENANCE CATEGORIES

As stated above, the types of activity that comprise the highway maintenance service are reactive, routine, programmed, regulatory, winter service and weather and other emergencies.

Within each type there are various categories that should be considered in relation to the core objectives of safety, serviceability and sustainability, and these are summarised as follows:

Reactive

- all elements – sign and make safe for safety purposes
- all elements – provide initial temporary repair for safety purposes
- all elements – provide permanent repair for safety purposes

Routine

- carriageways, footways and cycleways – minor works and patching
- programme of minor works and patching
- drainage systems – cleansing and repair
- embankments and cuttings – stability
- landscaped areas and trees – management
- verges – grass cutting
- fences and barriers – repair
- traffic signs and bollards – cleansing and repair
- road marking and studs – replacement
- lighting installations – cleansing and repair
- bridges and structures – cleansing and minor works

Programmed

- carriageways – resurfacing, strengthening or reconstruction
- footways – minor works, resurfacing, strengthening or reconstruction
- cycle routes – minor works, resurfacing, strengthening or reconstruction

Regulatory

- maintenance of highway register and definitive map
- co-ordination of road and street works (Traffic Manager responsibilities)
- charging schemes and permits for highway occupation (Traffic Manager responsibility) e.g. Skips, scaffolding, hoardings, street cafés etc
- other regulatory functions – encroachment, illegal signs, parking etc

Winter Service

- pre-treatment
- post-treatment
- clearance of ice and snow

Weather and other Emergencies

- flooding
- high winds
- high temperatures
- other emergencies

BUSINESS & ENVIRONMENTAL SERVICES

HIGHWAY MAINTENANCE PLAN

PART B – STANDARDS

6. INSPECTION ASSESSMENT AND RECORDING

6.1 INSPECTION CATEGORIES

The establishment of an effective inspection regime incorporating inspection frequencies, items to be recorded and nature of response supported by an assessment procedure based on risk probability is the key element in addressing the fundamental objectives of the highway maintenance strategy:

- network safety
- network serviceability
- network sustainability.

The regime will be applied systematically and consistently and a standardised comprehensive recording system will be adopted so that the risk assessment procedure will be clear and transparent. Inspections and surveys will be undertaken under the following categories:

- **Safety inspections**

Regular comprehensive inspections of all highway elements in addition to routine scouting of street lighting and illuminated signs and less frequent specialised inspections for electrical safety – network safety.

- **Service inspections**

Detailed inspections appropriate to the requirements of particular highway elements for network serviceability together with inspections for regulatory purposes for network availability and reliability and less frequent inspections for network integrity – network serviceability.

- **Condition surveys**

Surveys to identify deficiencies in the highway fabric, which are likely to affect Network Value – network serviceability and sustainability.

The recording system for inspections and surveys will facilitate analysis such that a holistic view may be taken of maintenance condition and trends related to network characteristics and use.

The system will also provide for recording service requests and complaints or other information from users or other third parties and will include what action or non-action is to be taken. It is proposed that the inspection, assessment and recording system will be monitored for the first twelve months and then reviewed to take into account any lessons learnt.

6.2 SAFETY INSPECTIONS

Safety inspections are designed to identify all defects likely to create danger or serious inconvenience to users of the network or the wider community. These defects are subdivided into two categories:

- **Category 1** – those that require prompt attention within 24 hours because they represent an immediate or imminent hazard
- **Category 2** - all other defects.

A safety inspection regime comprises the following elements:

- frequency of inspections
- items for inspection
- degree of deficiency
- nature of response.

Safety inspections are to be undertaken at the frequencies detailed hereunder to reflect the relative importance of the feature and the category of road and shall normally be carried out by trained personnel on foot or from a slow moving vehicle.

The method for carrying out the inspections will be the subject of a risk assessment with the final decision dependent upon the outcome of the assessment. Teams of two operatives will be used where a risk assessment has shown this to be necessary.

Additional safety inspections of specific defects will be required in response to reports or complaints from North Yorkshire Police, other organisations or the public as a result of major incidents or extreme weather conditions.

All safety inspection records shall include details of the weather conditions, surface conditions and any unusual features of the method of inspection.

Frequencies of Inspection

The Code of Practice specifies a particular inspection frequency regime as a starting point. Taking account of this regime and the local requirements and parameters for North Yorkshire, a modified frequency regime has been developed whereby any additional risk resulting from undertaking fewer inspections on certain categories of road will be covered under the risk assessment regime.

Frequencies for safety inspections are based on the network hierarchy categories defined in 5.4 and are as follows:

Feature	Category	Description	Frequency of Safety Inspection
Roads	2	Strategic Route	1 month
	3a	Main Distributor	1 month
	3b	Secondary Distributor	1 month
	4a	Link Road	3 months
	4b	Access Road	12 months
	5	Back Street	12 months
	6	Unsurfaced Road	12 months
Footways	1a	Pedestrian Areas	1 month
	1	Primary Pedestrian Route	1 month
	2	Secondary Pedestrian Route	3 months
	3	Link Footway	6 months

	4	Local Access Footway - Urban	12 months
	5	Local Access Footway - Rural	12 months
Cycleways	A	Part of carriageway	As for road
	B	Remote from Carriageway	12 months
	C	Cycletrails (<i>if forming part of the adopted highway network</i>)	12 months

Particular attention has been paid to linking carriageway and footway inspections to similar frequencies wherever possible in order that inspections can be undertaken together thereby creating economies and improving efficiency.

The frequencies of inspection tabulated above are consistent within the various categories of the base hierarchy as described in 5.4 above. However, taking into account risk assessments, it is clear that specific local criteria apply in certain circumstances which, because of their very nature and importance, should result in an increase in the inspection frequency in those locations.

The factors taken into account in determining whether special criteria apply include:

- access route – school/hospital etc.
- special environmental considerations – noise, appearance etc.
- special traffic zone – traffic calming etc.
- winter service route
- vulnerable users or with special needs – old people’s homes etc.
- lorry route
- public transport route
- cycle network.

All alternatives to the tabulated safety inspection frequencies must be documented within the appropriate system.

Items for Inspection

The list of highway inventory to be observed in a Safety Inspection for possible defects is as follows:

Item	Defect
Carriageway and Cycleway	pot hole/spalling, ridge, hump, depression/sunken cover or gap/crack
Footway	trip/pot hole/sunken cover, rocking slab/block or open joint
Kerb	misaligned, loose/rocking or missing
Verge	sunken area adjacent to and running parallel with the carriageway/footway edge or obstruction

Item	Defect
Iron Work	gaps within framework, level differences within framework, rocking/cracked/broken/worn/polished or missing covers
Flooding – where conditions allow	standing water 2 hours after cessation of rainfall, substantial flow of running water across carriageway/footway or significant flooding of property
Drainage	substantial standing water adjacent to edge of carriageway, blocked gully/kerb outlet or collapsed/ blocked/settled items or systems
Road Markings	faded or worn markings
Road Studs	missing, void left in carriageway, displaced items on carriageway or defective studs
Signs/Bollards/Lights/ Traffic signals	damaged/misaligned items causing a hazard, missing items causing a hazard, lights/signals not operating correctly/malfunctioning, signals pointing the wrong way, signal lamp failure, exposed wiring, missing doors to lamp columns, items missing or items obscured/dirty/faded
Safety Fencing/Barriers	damaged/misaligned items projecting into carriageway or footway or structurally unstable items likely to cause danger
Hedges and trees	overhanging trees and vegetation or unstable trees and branches
Highway General	oil/debris/mud/stones/gravel likely to cause a hazard, illegal signs, obstructions on the highway, obstructed sight lines, ramps in carriageway to aid vehicular movement, footway damage caused by vehicular access where no vehicle crossing, scaffolding or skips likely to cause a hazard, unprotected building materials on the highway or abandoned vehicles likely to cause a hazard
Anything Dangerous	anything considered dangerous on the highway which could affect either highway users or the general public

The particulars of the items to be inspected are as follows:

- **Carriageways**
 - central island
 - central reservation
 - carriageway
 - hard shoulder
 - crossover (central reserve)
 - lay-by
 - cycleways (forming part of carriageway)
- **Footways and Cycleways**
 - footway
 - paved footpath
 - cycleways
 - kerbs
 - edgings
 - channels
 - verge

- **Ironwork**
 - manholes
 - catchpit
 - gullies
 - kerb outlet
 - utilities covers and frames
- **Drainage**
 - culvert
 - highway ditch
 - filter drain
 - grip
 - gully
 - piped grip/kerb offset
- **Road Markings**
 - stop lines
 - give way lines
 - other road markings
- **Road Studs**
 - non-reflective road studs (zebras and pelicans)
 - depressible reflective road studs (Halifax cats eyes)
 - non-depressible reflective road studs
- **Signs/Bollards/Lights**
 - signs
 - bollards
 - illuminated signs
 - pedestrian crossing lights
 - lighting columns
 - wall mounted street lighting
 - all other lighting units
- **Traffic Signals**
 - traffic signals
 - traffic signal installation
 - traffic signal furniture
- **Safety Fencing/Barriers**
 - fences and barriers
 - pedestrian guardrails
 - safety fencing
 - boundary walls and fences
- **Street Furniture**
 - all items of furniture not covered elsewhere
- **Hedges and Trees**
 - hedges
 - trees and shrubs
 - other vegetation
- **Scavenging**
 - the full extent of the highway.

General Information

Ironworks – This may necessitate repairs to, and the occasional replacement of, all types of gratings, covers, frames and boxes that are the direct responsibility of the

highway authority. It may be necessary on occasions to repair or replace items that are the responsibility of other parties if there is a hazard to road users or pedestrians, to make such defects safe and to recover the costs incurred from the other parties.

The majority of covers, gratings and frames are situated in carriageways and footways but those in verges, particularly those verges that are regularly traversed by pedestrians or horses, should not be ignored and the appropriate risk assessed. It may often be difficult to decide whether a cracked or broken item is in real danger of collapse. If in doubt, it should be replaced, irrespective of its position.

Defects in covers and gratings may pose particular danger to pedal and motor cycle users. It should be remembered that their occupancy on a carriageway will not always be limited to the nearside edge.

Highway Drainage – Standing water reduces safety if allowed to accumulate on trafficked surfaces of the highway. The effects of this are readily observable and the correct action should be taken, especially on high speed roads.

Road Markings – To be effective, road markings should not be reduced or obscured by natural erosion and abrasion by chemical spill or by binder fattening particularly following surface dressing.

Signs/Bollards/Lights – Many signs are required to be lit and their legal status is affected if the illumination has faded. Other signs may be left in a dangerous condition after road traffic accidents which may affect other traffic or road users. Exposed electrical wiring may also pose a problem.

Requirements for street lighting relate to safety defects resulting from programmed inspections together with additional inspections which may be required in response to the Emergency Services, the public or resulting from extreme weather conditions.

Particular attention should be paid to damaged or defective lighting equipment since this may constitute an immediate or imminent hazard, especially where vehicular impact has occurred or where the electrical condition is at fault or exposed.

Lights and signs must also be checked for obscuration by overgrown trees, hedges etc. Regulatory signs obscured in this way represent a category 1 defect.

Traffic Signals – Modern signal equipment is expected to operate correctly without regular routine adjustments. The requirement of this section is in the event of failure which might otherwise render installations ineffective to bring back the installation on stream in line with the current standards.

Hedges and Trees – This applies to hedges and trees that are the responsibility of the highway authority together with those that are the responsibility of others but which affect users of the highway.

Inspections can reveal signs of potential danger, such as thinning foliage and unseasonable loss of leaves, dying back of a substantial amount of branches, signs of fungi and bacterial disease. Normal healthy growth of hedges and trees can also give

rise to hazardous conditions to road users by causing obstruction to visibility and movement.

Scavenging – This applies to the removal of any objects found within the highway boundary that causes an obstruction or hazard to highway users. Where the litter/debris does not constitute a hazard to highway users it should be treated by the District Authority under the Environmental Protection Act 1990. Spillages likely to cause a hazard shall be dealt with by the Emergency Services with the inspector giving assistance where appropriate.

Response Times

The degree of observed deficiency and the nature of response are discussed below under risk assessments and category 1 and 2 defects. However, the categories of response time relating to the specified categories of defect and level of hierarchy are prioritised as follows:

Priority 1 – within 24 hours (make safe or repair)

Priority 2 – within 28 days (repair)

Priority 3 – within 3 months (repair)

Priority 4 – within 6 months (repair)

Priority 5 – repair during next programme/schedule a more detailed inspection/review condition at next inspection

The presence of electrical equipment relating to street lighting, illuminated signs and bollards and traffic signals requires special attention to ensure the safety of users and the community and detailed advice is contained in 'Well-Lit Highways ~ Code of Practice for Highways Lighting Management'. In addition to highway safety inspections, routine scouting of street lighting and illuminated signs and bollards as well as specialised inspections for electrical safety will also be undertaken at approved frequencies.

6.3 SERVICE INSPECTIONS

The service inspection regime is designed to ensure that the network meets the needs of the users by providing more detailed inspections of particular highway elements to ensure that they meet the requirements for serviceability. These inspections also support safety inspections in that they provide a further opportunity for identifying safety defects. Service inspections also include checks for regulatory purposes including NRSWA which relate to network availability and reliability as well as other inspections for network integrity.

North Yorkshire County Council do not undertake general service inspections for highways other than for regulatory purposes under the New Roads and Street Works Act as detailed below.

Currently the development of the Transport Asset Management Plan is in progress and as a consequence, the need for service inspections shall be reviewed. It is probable that an incremental introduction of service inspections will be introduced in the future based on priority and risk management procedures.

INSPECTIONS FOR REGULATORY PURPOSES

In addition to the maintenance of the highway infrastructure, the highway maintenance service also comprises regulation and enforcement activities. The most significant of

these involves responsibilities and requirements under the New Roads and Street Works Act 1991 and the Traffic Management Act 2004. These provisions together with the associated Codes of Practice and Standards are not dealt with in this Plan and advice should be sought from the County Council's Highways Network Manager. Other important regulatory duties include:

- management of the Highway Register
- management of public rights of way
- dealing with encroachment on the highway
- dealing with illegal and unauthorised signs
- licensing skips, hoardings, temporary closures and other authorised occupation of the highway
- construction of vehicle crossings
- illegal parking on verges and footways
- adoption of new highways.

STREET LIGHTING

Service inspections of street lighting are not dealt with under the Highways Maintenance Plan but are covered in separate documents.

BRIDGES

Service inspections of bridges and structures are not dealt with under the Highways Maintenance Plan but are covered in separate documents.

6.4 CONDITION SURVEYS

Condition surveys are undertaken to ascertain information on the nature and severity of carriageway deterioration in order to determine the most appropriate maintenance treatment and hereby ensuring value for money.

The survey methods applicable in North Yorkshire include:

SCANNER (Surface Condition Assessment of the National Network of Roads)

Previously described as TRACS – Type Surveys (TTS). Scanner surveys are automated high speed vehicular surface condition surveys which collect the following data:

- 3-Dimensional Spatial Co-ordinates
- Road Geometry
- Survey Speed
- Longitudinal Profile
- Wheelpath Rutting
- Texture Profile
- Cracking (both in the wheel paths and for the whole carriageway)

SCANNER surveys are currently being extended from principal roads for the collection of surface data to the non-principal road network.

Coarse Visual Inspection (CVI)

Visual survey carried out from a slow moving vehicle or on foot to collect basic defects in accordance with UKPMS requirements on the highway network. CVI surveys are carried out on all roads within the network excluding unsurfaced roads. The survey is also used to target carriageway schemes submitted for the five-year programme.

Ground Penetrating Radar Surveys (GPRS)

Ground radar surveys are carried out to supplement as built construction data and to determine unbound pavement layer thicknesses.

SCRIM

The Sideway-force Coefficient Routine Investigation Machine (SCRIM) is used to monitor the in service skid resistance of category 2.3a and 3b roads on an annual basis. Refer to Skid Resistance policy within paragraph 6.9.

GRIPTESTER

The Griptester is used to measure the in service skid resistance of parts of category 3a and 3b roads on a rotational basis and by annual survey. Refer to Skid Resistance policy within paragraph 6.9.

DETAILED VISUAL INSPECTION (DVI)

Detailed visual inspection surveys are carried out in accordance with UKPMS requirements on the footway network on a rotational basis and by annual survey.

The survey technique is also utilised to target footway schemes submitted for the five-year programme.

INVENTORY SURVEY

Inventory surveys are carried out to accurately record the infrastructure asset.

Two types of inventory are utilised to collect data:

- textual traditional inventory in a text based format
- video survey to record geographic information system, text and image formats

6.5 RISK ASSESSMENTS

Risk management comprises two categories of risk, strategic and operational, as described in 2.4 above. Strategic risks are either corporate or departmental and therefore beyond the scope of this plan.

Operational risks are those which managers and staff will encounter on a day to day basis and may be:

- physical - defects related to network safety or health and safety movement of operatives and staff
- professional - such as the ratio of reactive/programmed maintenance
- financial - such as budgetary control and programme management
- legal - related to possible breaches of legislation
- contractual - associated with the failure of contractors to deliver services to the agreed cost and specification
- technological - relating to reliance on equipment such as gritters
- environmental - relating to noise or air pollution.

Insofar as safety inspections and surveys are concerned, only the physical risks are relevant.

The requisite roles and responsibilities necessary to manage these risks under the risk management process are as follows:

Service Managers

- identify service risks
- analyse service risks
- profile service risks
- prioritise action on service risks
- determine action on service risks and delegate responsibility for control
- control risk – not applicable
- monitor progress on managing service risks.

Service Providers

- maintain awareness of risks and link into the formal process
- maintain awareness of the impact and cost of risks and link information and data into the formal process
- profile risks – not applicable
- prioritise action – not applicable
- determine action – not applicable
- control risks in their jobs
- monitor progress on managing job related risks and report to service manager.

In this regard, the service managers are the County Council's Area Managers and the Agent Authorities Highway Services Managers. The service providers include other County Council employees, employees of agent authorities and consultants and contractors involved in service delivery.

The risks that are applicable to highway safety inspections clearly appertain to the items for inspection as defined in 6.2 above together with the risks inherent to the operatives in undertaking the inspections.

Each item has to be assessed for defect and risk severity, feature and category of hierarchy together with the location risk and then prioritised accordingly. Guidance on this process is contained in the 'North Yorkshire Code of Practice for Highway Inspections'. The adoption of this Code together with appropriate training of all inspectors will enable effective risk assessments to be undertaken on site.

6.6 CATEGORY 1 DEFECTS

Category 1 defects are those which, following a risk assessment, are deemed to represent a danger or serious inconvenience to the public or which could result in significant damage to property.

These defects are to be made safe or repaired within 24 hours from the time that the authority first became aware of the defect. Some will require immediate attention as described below.

Whenever category 1 defects are encountered they shall, if reasonably practicable, be corrected, made safe or otherwise protected by the inspection personnel before being reported at the base office at the earliest opportunity with a request for urgent or immediate action.

When a category 1 defect is identified within a larger area, only that part of the area which meets the criteria for category 1 defects shall be treated as such with the remainder being treated as a category 2 defect, except where this is impractical to do so. Some category 1 defect repairs may be due to the activities of the utilities, which are governed by the requirements of NRSWA. If the reinstatement is still within its guarantee period and is outside its specified tolerances due to settlement, plucking out or other reasons, and within category 1 criteria, any costs incurred in making safe, and or repair, must be recovered from the undertaker and not charged to the highway authority. All costs must be charged in accordance with the Street Works (Recovery of Costs) (England) Regulations 2002.

The general principles and defect descriptions may not be an exhaustive list in all instances and there may have to be additions to take account of local conditions. Although such additions will ultimately need the approval of the Asset Manager, individual circumstances, which have to be clearly justified, shall be subject to the approval of the Area Manager.

Response times for remedial action are categorised in 6.2 above and for category 1 defects are:

- **Priority 1 – within 24 hours (make safe or repair).**

Some defects are potentially so dangerous that immediate action is required. These are defects which due to their nature and location represent a very serious risk to the public such as collapsed or missing covers or gratings in carriageways or footways which must not be left unattended unless and until adequate barriers, warning signs or cones have been erected.

Items to be inspected for possible defects are defined in 6.2 above and the investigatory levels at which defect risks are to be assessed are specified in 6.8 below. When an investigatory level is reached, the risks appertaining to the requisite item have to be assessed for likely impact and probability from which a risk factor is calculated which will determine the likely course of action. Guidance on risk assessment incorporating impact, probability and risk factors together with resulting recommended remedial action for category 1 defects and priority 1 response is contained in the Risk Register in the North Yorkshire Code of Practice for Highway Inspections.

The appropriate course of action as determined from the risk assessment must be undertaken within the time limits specified. As some types of defect may be the responsibility of other departments within the organisation or indeed other organisations, the County Council and all agent authorities must ensure that appropriate arrangements are in place to effect these repairs in accordance with the requirements.

6.7 CATEGORY 2 DEFECTS

All defects identified in safety inspections which are not categorised as Category 1 are automatically classified as Category 2. The commentary in 6.6 above is also clearly applicable to defects classed as Category 2.

Response times for remedial action are specified in 6.2 above, and for Category 2 defects are as follows:

- **Priority 2 – within 28 days**
- **Priority 3 – within 3 months**

- **Priority 4 – within 6 months**
- **Priority 5 – repair during next programme/schedule a more detailed inspection/review condition at next inspection**

The investigatory levels for all defects, whether Category 1 or Category 2, are shown in 6.8 below. It is solely the outcome of the risk assessment that defines the category.

6.8 DEFECT INVESTIGATORY LEVELS

The investigatory levels for defects arising from safety inspections are shown in the following table.

Item	Defect	Investigatory Level
carriageway	pothole/spalling crowning depression rutting gap/crack sunken ironwork	20mm depth (75mm across in any horizontal direction) 50mm (area as NRSWA Code of Practice) 50mm (area 2 sq metres) 20mm 20mm depth (20mm wide) 20mm difference in level
pedestrian crossing	trip/pothole	15mm depth
footway	trip/pothole/sunken cover rocking slab/block open joint tree root damage sunken ironwork	15mm depth (75mm across in any horizontal direction) 15mm vertical movement 20mm depth (100mm x 50mm horizontally) 15mm trip 15mm level difference
Cycleway/Cycle lanes	trip/pothole/sunken cover rocking slab/block open joint tree root damage sunken ironwork	15mm depth (75mm across in any horizontal direction) 15mm vertical movement 20mm width (100mm x 50mm horizontally) 20mm trip 20mm level difference
kerbs	misaligned loose/rocking missing	50mm horizontally 15mm vertically yes/no
verges (in urban areas)	sunken area adjacent to and running parallel with carriageway or footway edge obstruction	depth 50mm

Item	Defect	Investigatory Level
verges (in rural areas)	sunken area adjacent to and running parallel with carriageway edge sunken area adjacent to and running parallel with footway edge edge obstruction	depth 150mm depth 100mm
ironworks	gaps within framework (other than designed by manufacturer) level differences within framework rocking covers cracked/broken covers worn/polished covers missing covers	20mm 15mm 15mm vertical movement yes/no yes/no yes/no
flooding	standing water 2 hours after cessation of rainfall 1.5m from edge of carriageway substantial running water across carriageway substantial running water across footway property inundation	yes/no yes/no yes/no yes/no
drainage	substantial standing water adjacent to edge of carriageway blocked gully (silted above outlet) collapsed/blocked/settled items or systems	yes/no yes/no yes/no
road markings	faded or worn markings	10% loss of effective markings
road studs	missing hole left in carriageway displaced item on carriageway defective item	yes/no >20mm depth (75mm across in any horizontal direction) yes/no yes/no
signs/bollards/lights & traffic	damaged/misaligned item	yes/no

Item	Defect	Investigatory Level
hedges and trees	unstable tree causing danger of collapse onto highways overhanging tree leading to loss of height clearance over carriageway, footway or cycleway	yes/no <2.1m over footways <2.4m over cycleways <5.1m over carriageways
highway general	oil/debris/mud/stones and gravel likely to cause a hazard street furniture missing/damaged likely to cause a hazard illegal signs obstructions in the highway obstructed sight lines ramps in carriageway to aid vehicular movement footway damage caused by vehicular access where no vehicle crossing scaffolding likely to cause a hazard skips likely to cause a hazard unprotected building materials on the highway abandoned vehicles likely to cause a hazard	yes/no yes/no yes/no yes/no yes/no yes/no yes/no yes/no yes/no yes/no yes/no yes/no yes/no
other dangers to the public	anything else considered dangerous	yes/no
Item	Defect	Investigatory Level
signs	causing a hazard missing item causing a hazard lights/signals not operating correctly/malfunctioning signals pointing the wrong way signal lamp failure exposed wiring missing door to lamp column item missing Item obscured by whatever including trees, hedges other signs etc Item dirty/faded	yes/no yes/no yes/no yes/no yes/no yes/no yes/no yes/no yes/no yes/no
safety fencing and barriers	item damaged or misaligned causing a hazards unstable item or section	yes/no yes/no

In regard to defects specified in the above table, particularly those covered under the 'highway general' heading, many are the responsibility of individuals or organisations and not the highway authority. Unless urgent action is required, the Inspector's course of action shall be to pass on the relevant information to the section or department which is responsible for overseeing that particular activity.

In addition there are other works undertaken by third parties, including both authorised and unauthorised operations, which are clearly the responsibility of the said third parties. It shall be the responsibility of the Inspector, wherever practicable, to ensure that the third parties are aware of the problem and undertake all necessary remedial action to resolve the problem. If the third party is unwilling or unable to rectify the problem, any costs incurred in remedial action shall be recharged to the third party, if their identity is known, except where permitted under legislation.

6.9 SKID RESISTANCE

Policy

The Council's policy on skid resistance aligns current legal requirements, procedures and technology.

The Highways Agency Design Manual for Roads and Bridges Volume 7 HD/28/04 and Interim Advice Note IAN 49/03 have been utilized to develop this policy.

Current concerns regarding the early life skid resistance and horses slipping on negatively textured new surfaces will be addressed in the future after national guidance has been published.

The Council as highway authority has a duty under the Highways Act 1980 to maintain the highway in a condition that is safe and fit for purpose.

An important aspect of maintaining the safe condition of the road is to provide an adequate wet road surface condition. Studies have shown that accident rates can be reduced by improving skid resistance at targeted wet road accident locations. As a consequence, the Council routinely monitors high priority routes within the highway network and in addition carries out investigation at specific locations where problems have been identified, in line with road safety policy.

Network Monitoring of Skid Resistance

The highway carriageway network is sub-divided into eight categories for highway maintenance purposes. Monitoring on a routine basis is carried out on the three important elements of the network i.e. category 2 (Strategic Routes), category 3a (Main Distributor) and category 3b (Secondary Distributor).

Skid resistance is the frictional property of a road surface and is measured by specific techniques.

- (a) The Sideways Coefficient Routine Investigation Machine (SCRIM) is utilized on the motorway and trunk road network for the Highways Agency and is used to monitor category 2, 3a and 3b roads within the County. The machine is operated in accordance with BS 7941 Part 1. A single annual survey with benchmark method is carried out on category 2, 3a and 3b roads during the summer season (1 May–30 September) to obtain a characteristic scrim coefficient (CSC). SCRIM takes a continuous measurement following a single line, typically within the nearside wheel path. For multiple lanes, the lane carrying the greatest number of heavy vehicles is surveyed.
- (b) Griptester monitoring is carried out for investigatory purposes on the highway carriageway network. The machine is operated in accordance with BS 7941 Part 2.

A single annual survey is carried out during the summer season (1 May–30 September).

- (c) Additional ad-hoc targeted skid resistance surveys are carried out on all fatality accident sites on the highway network. These surveys are carried out at any time of the year soon after the event utilizing the Griptester operated in accordance with BS 7941 Part 2. Further ad-hoc investigation surveys are carried out by Griptester.

Investigatory Levels

Investigatory levels have been set in accordance with the Highways Agency Design Manual for Roads and Bridges, Volume 7, Section 3 (HD 28/04) for the surveyed parts of the highway network. In addition to the site category, traffic statistics and accident data also are considered as part of investigatory level setting process.

Investigatory levels shall be re-assessed every three years as well as after significant changes to the network i.e. installation of traffic lights, pedestrian crossing or roundabout or when the geometry or layout of road markings are altered.

Site Categorisation Table for SCRIM and Griptester Surveys

Site Category	Situation	SCRIM CSC/Grip Number Investigatory Levels at 50km/hr							
		0.30	0.35	0.40	0.45	0.50	0.55	0.60	0.65
		0.35	0.41	0.47	0.53	0.59	0.65	0.71	0.76
A	Motorway								
B	Dual Carriageway non-event								
C	Single Carriageway non-event								
Q	Approaches to and across minor/major junctions, approaches to roundabouts								
K	Approaches to pedestrian crossings and other high risk situations								
R	Roundabout								
G1	Gradient 5–10% longer than 50m								
G2	Gradient > 10% longer than 50m								
S1	Bend radius <500m Dual Carriageway								
S2	Bend radius <500m Single Carriageway								

$$\text{Scrim} = 0.85 \times \text{Grip Number}$$

Notes:

- Investigatory levels are for the mean skidding resistance within the appropriate averaging length
- Investigatory levels for site categories A, B and C are based on 100 metre averaging lengths or the length of the feature if it is shorter

3. Investigatory levels and averaging lengths for site categories Q, K, G and S are based on the 50 metre approach to the feature but this shall be extended when justified by local site characteristics
4. Investigatory levels for site category R are based on 10 metre length
5. Residual lengths less than 50% of a complete averaging length may be attached to the penultimate length, provided that the site category is the same.

Site Investigation

All sites having a skid resistance at or below the Investigatory Level shall be investigated as soon as practicable in accordance with DMRB HD 28/04 as included in Skid Resistance Operational Procedure – May 2005/Site Investigation. Site Investigations shall be prioritized and carried out by experienced personnel with pavement maintenance and accident investigation skills.

The objectives of the site investigation shall be:

- a) To determine whether a surface treatment is justified to reduce the risk of accidents; specifically accidents in wet conditions or involving skidding
- b) To determine whether some other form of action is required
- c) To determine whether the site should be kept under review
- d) To determine if the Investigatory Level is appropriate.

Warning Signs

Where the skid resistance is substantially below the Investigatory Level (0.10 CSC units or 0.11 Gripnumber), slippery road signs shall be erected as a matter of urgency.

In other cases, slippery road signs shall be erected as soon as practicable at all locations where a site investigation has shown that there is need for treatment to improve skid resistance.

Slippery road signs shall be removed as soon as they are no longer required. This shall be after the remedial action has been taken and skid resistance levels have returned to an appropriate standard. In some cases this will not be immediately after treatment, for example at sites where surface binder has to be worn off before skid resistance becomes adequate.

Prioritisation and Treatment

Where skid resistance is determined as being substantially below the investigatory level (0.10 CSC or 0.11 Gripnumber units), and there are clear indications that improving the condition of the surfacing is likely to significantly reduce the risk of accidents occurring, then remedial treatment shall be prioritized as a relatively urgent task.

Priority shall be given to treating the following sites:

- Where skid resistance is at least 0.05 CSC units/0.05 Grip number units below investigatory level
- Where low skid resistance is combined with low texture depth
- Where the accident history shows there to be a clearly increased risk of wet skidding accidents.

Where investigations show that treatment is necessary, consideration shall be given to whether surface treatment or other measures are appropriate. Surface treatment may not always be a necessary response and other measures, for example to reduce accident risk of the site may be both cost effective and consistent with local transport policy.

Texture and Polished Stone Value (PSV)

Both the texture depth and the polishing characteristics of the stone (PSV) have an effect on the in-service skid resistance of the road surface. It is important therefore that the correct standards are achieved when any surfacing material is laid and maintained thereafter. The following tables shall be applied for texture depth and PSV selection for new works and maintenance.

Standards for minimum texture depth of bituminous surfacings

Site Category	Speed	Minimum Texture Depth (Sand Patch mm)	
		New Works	Investigatory Level
High Texture	High Speed (85th percentile greater than 55mph)	1.5	0.95
Low Texture	Low Speed (85th percentile less than 55mph)	0.9	0.65

Early Life Skid Resistance

It is known that newly laid surfacings can exhibit lower skid resistance than the same surfacings after a period of trafficking although the effect is not completely understood. Guidance provided by the HA Interim Advice Note 49/03 indicates that temporary warning signs may be required in certain situations.

In North Yorkshire, slippery road signs shall be erected for a period of 12 months on all surfacings and stone mastic asphalt surfacings laid in rural situations outside a 40mph speed restricted area.

Minimum Polished Stone Value required for new wearing course

				Traffic (cv/lane/day) at design life									
IL Band	Default IL	Site Categories	Site Definitions	0 - 250	251 - 500	501 - 750	751 - 1000	1001 - 2000	2001 - 3000	3001 - 4000	4001 - 5000	5001 - 6000	over 6000
I	0.35	A, B	Motorway (mainline), Dual carriageway (non-event)	50	50	50	50	50	55	60	60	65	65
Ia	0.35	A 1	Motorway mainline, 300m approaches to slip roads	50	50	50	55	55	60	60	65	65	65
II	0.40	C, D	Single carriageways (non-event), dual carriageway approaches to minor junctions	50	50	50	55	60	65	65	65	65	68+
III	0.45	E, F, G1, H1	Single carriageway minor junctions, approaches to and across major junctions, gradients 5.10%>50m (dual, downhill only; single, uphill and downhill), bends <250m radius >40mph	55	60	60	65	65	68+	68+	68+	68+	70+
IV	0.50	G2	Gradients >50m long >10%	60	68+	68+	70+	70+	70+	70+	70+	70+	70+
V	0.55	J, K	Approaches to roundabouts, traffic signals, pedestrian crossings, railway level crossings and similar	68+	68+	68+	70+	70+	70+	70+	70+	70+	70+
VI	0.55 (20kph)	L	Roundabouts	50 – 70+	55 – 70+	60 – 70+	60 – 70+	60 – 70+	65 – 70+	65 – 70+			
VII	0.60 (20kph)	H2	Bends < 100m radius	55 – 70+	60 – 70+	60 – 70+	65 – 70+	65 – 70+	65 – 70+	65 – 70+			

Where 68+ material is listed in this table, none of the three most recent results from consecutive tests relating to the aggregate to be supplied shall fall below 68.

Throughout this table 70+ means that specialized high friction surfacing will be required at these locations.

For site categories L and H2, a range is given and the PSV should be chosen on the basis of local experience of material performance.

7. CONDITION STANDARDS AND INVESTIGATORY LEVELS

7.1 GENERAL

Chapter 6 covered safety inspections and investigatory levels for Category 1 and Category 2 defects. This chapter on Condition, Standards and Investigatory Levels will not repeat the safety inspection investigatory levels and will address only issues not previously covered.

As indicated in Part A 1.3, the core objectives of highway maintenance are:

- **Network Safety**
 - complying with statutory obligations
 - meeting users needs
- **Network Serviceability**
 - ensuring availability
 - achieving integrity
 - maintaining reliability
 - enhancing quality
- **Network Sustainability**
 - minimising cost over time
 - maximising value to the community
 - maximising environmental contribution.

All aspects of highway maintenance contribute to at least one of the above objectives, and the condition of the fabric of the highway, in the main, is ascertained through the safety and service inspection regimes.

7.2 CARRIAGEWAYS

The condition of the carriageway can contribute to the core objectives as follows:

- **Safety**
 - nature, extent and location of surface defects
 - nature and extent of edge defects
 - nature and extent of surface skidding resistance
- **Serviceability**
 - nature and extent of surface defects
 - ride quality of the surface
- **Sustainability**
 - surface noise attenuation characteristics
 - nature and extent of surface defects
 - nature and extent of pavement defects.

Maintenance of carriageways is undertaken under the three headings of:

- **Resurfacing and Reconstruction (R & R)**
- **Surface treatments**
- **Basic maintenance**

Resurfacing and Reconstruction (R & R)

Resurfacing and Reconstruction (R & R) schemes are structural maintenance schemes where a defined need has been identified and they comprise:

- reconstruction
- overlay
- resurfacing.

The objectives are:

- to restore the structural integrity of those roads
- to ensure user safety by preventing further deterioration, restore skid resistance where surface dressing is not appropriate and restore ride quality
- to continue to meet the expectations of the local people and travelling public with regard to the standards of the network.
- in urban areas to reduce the amount of noise generated by vehicles travelling over the surface of the carriageway.

The schemes are individually planned and costed and the various treatments are described as follows:

- **Reconstruction** – the removal of some or all of the structural layers of the pavement and their replacement with new material, including the new surfacing. As a minimum this will involve removal of surface course, base course. For concrete roads it is the full or partial replacement of the slab.
- **Overlay** – A layer of material on the existing surface course to increase or restore the strength of the pavement. Overlays to concrete surfaces are usually done with bituminous material. Overlays equal or less than 50mm should be classified as resurfacing.
- **Resurfacing** – The replacement of the existing surface course to restore the running surface. Including overlays up to 50mm and thin surface course materials greater than 15mm thick (thin surface courses up to 15mm thick are included in surface dressing).

Any consequential works in connection with the following should be included in the scheme classification: patching, footways and cycleways, drainage, road studs and markings, surface course, safety fences, kerbing works, haunching, base course and cold milling.

Schemes for inclusion in the Resurfacing and Reconstruction (R & R) programme will be decided on a priority basis taking account of the submission ranking surveys, with data being recorded by machine and visual surveys and assessed countywide. A five-year rolling programme will be maintained with an Annual Review taking place in May and June each year. The Annual Review will provide opportunities for local priorities to be amended. In addition, new schemes will be added to the programme for the new years thus maintaining a full five-year programme.

Investigatory levels are based on the standards, details and definitions held within the Rules and Parameters (RP) of the UKPMS.

The maintenance budget will be split into the category of road and then three types of possible works; Structural, Surface and Edge. The main Condition Indices (CI) which shall be considered are:

- **Overall CI** – This will contribute to the budget spend for the structural work.
- **Structural CI** – This will contribute to the budget spend for the structural work.
- **Wearing Course CI** – This will contribute to the budget spend for surface improvements.
- **Edge CI** – This will contribute to the budget spend for edge/haunching works.

The following table shows the intervention levels for different road categories:

Road Category	UKPMS rules and parameters threshold Level			
	Structural CI	Wearing CI	Edge CI	Overall CI
2	≥ 80	≥ 65	≥ 90	≥ 65
3a	≥ 80	≥ 65	≥ 90	≥ 65
3b	≥ 80	≥ 65	≥ 90	≥ 65
4a	≥ 80	≥ 65	≥ 90	≥ 65
4b	≥ 80	≥ 65	≥ 90	≥ 65
5	≥ 80	≥ 65	≥ 90	≥ 65
6	n/a	n/a	n/a	n/a

Surface Treatments

Surface treatments are non structural treatments of less than 15mm thickness and include:

- surface dressings
- thin slurry sealing
- high friction surfacing
- resin bonded surfacing
- other bituminous bonded surfacing
- re-texturing.

These treatments are to be used as a maintenance treatment, to further extend the life of a carriageway before major maintenance or reconstruction is required, and assessments shall use the following data:

- Principal Roads – SCANNER
- Non principal B Roads – SCANNER
- Non principal C Roads – CVI
- Classified Roads – CVI
- Unclassified Roads – CVI
- Category 2, 3a and 3b shall also be subject to SCRIM

All sites are to be identified for appropriate treatment and ranked. The various treatments are:

- **Surface dressing** – the purpose is to restore surface friction and the texture of the carriageway, to seal the road surface from the ingress of water and arrest

deterioration of the road surface, to extend the working life of the carriageway construction, to provide a whole life cost effective treatment and to improve the cosmetic appearance. Treatment can be considered for all roads with the exception of urban estate roads, minor cul-de-sacs, town centres, heavily parked areas and high stressed sites (areas subject to abrasive turning or heavy braking). Design and specification shall conform to Clause 919 (SHW) for Recipe Specification and Clause 922 (SHW) for Performance Specification.

- **Thin slurry seal** – the purpose is to seal the road surface from the ingress of water and arrest the deterioration of the road surface, to extend the working life of the carriageway, to provide a whole life cost effective treatment and to improve the cosmetic appearance. Treatment can be considered for urban estate roads, minor cul-de-sacs and heavily parked areas. Design and specification shall conform to Clause 918 (SHW).
- **High friction surfacing** – The purpose is to improve carriageway surface friction and can be considered for accident remedial sites where appropriate and sites where good skid resistance is essential such as the approaches to pedestrian crossings. Design and specification shall conform to Clause 924 (SHW).
- **Resin bonded coloured surfacing** – the purpose is for traffic calming and traffic delineation of areas of carriageway. Treatment can be considered as part of traffic management schemes for all Category 2 and 3 roads.
- **Other bituminous bonded surfacing** – this category is reserved for other surface treatments of proprietary design, which do not conform to other categories listed in this section.
- **Re-texturing** – the purpose is to improve surface friction and texture and can be considered for all roads. Design and specification shall be agreed with the specialist contractor. See HD 37/99 for guidance on type of retexturing and their application.

Investigatory Levels for surface treatment, including surface dressing are:

Road Category	Percentage of Area	Investigatory Level
2 – 4	20	Whole carriageway deterioration

Basic Maintenance

Basic maintenance comprises routine reactive maintenance and smaller scale maintenance works. Surface dressing schemes are not included. All work, regardless of value, capable of being integrated into a scheme and planned, should be submitted for inclusion in the Resurfacing and Reconstruction (R & R) programme.

These works comprise all patching and minor repairs including haunching carried out on both flexible and concrete carriageways and are determined through safety or service inspections, local knowledge or reports from the public.

The objective is to repair defective areas of carriageway to maintain a satisfactory running surface and to prevent damage to the highway fabric by ingress of water and frost and highway safety is ensured by implementing continual programmes of work.

Types of defects to be recorded and investigatory levels are discussed in chapter 5, but particular consideration should be given to:

- a pothole forming in any road which creates a hazard
- failed existing patching including failures of permanent trench reinstatement
- projections including manhole frames, boxes and other such ironware
- edge deterioration which causes cracking, fretting, potholing and deformation of the carriageway
- rutting and overrunning which causes potholing of the edge of the verge or standing water.

The standard for patching is to be in accordance with the principles laid out in the New Roads and Street Works Act 1991 Specification for the Reinstatement of Openings in the Highway.

7.3 FOOTWAYS

The condition of footways can contribute to the core objectives as follows:

- **Safety**
 - nature, extent and location of surface defects
 - nature and extent of kerb and edging defects
- **Serviceability**
 - nature and extent of surface defects
 - extent of encroachment and weed growth
 - the slipperiness of the surface
 - the quality of the surface
 - integrity of the network
- **Sustainability**
 - convenience and ease of use
 - nature, extent and location of surface defects
 - extent of damage by over-running and parking.

Investigatory levels are based on the standards, details and definitions held within the Rules and Parameters (RP) of the UKPMS.

The maintenance budget will be split into the category of footway. The only condition index applicable for footways is:

- Overall CI – This will contribute to the budget spend for the structural work.

The following table shows the intervention levels for different road categories:

Footway Category	UKPMS rules and parameters threshold Level
	Overall CI
1a	≥ 25
1	≥ 25
2	≥ 25
3	≥ 25

Maintenance of footways and footpaths is carried out under the two headings of:

- Resurfacing and Reconstruction (R & R)
- Basic maintenance.

Resurfacing and Reconstruction (R & R)

The Resurfacing and Reconstruction (R & R) programme is designed to meet the County Council's policy of promoting walking as an alternative to the use of motorised transport by the provision of a safe and convenient network of footways and footpaths in urban areas. The programme comprises schemes at specific sites where a defined need has been identified, with the objective of maintaining the structure and surface profile of the footway to allow the safe passage of pedestrians.

Works are separately planned and costed and can include all work on existing kerbs and footways together with consequent works to verges and drainage systems. Replacement kerbing should be included only if it is associated with footways. New kerbing, reconstruction, overlay, resurfacing and surface dressing should be excluded as they are encompassed in 7.2 above.

Works associated with bridges and structures, and other public rights of way such as footpaths, bridleways and byways should be excluded.

Schemes for inclusion in the Resurfacing and Reconstruction (R & R) programme will be decided on a priority basis taking account of the condition assessments as determined through the submission ranking surveys and local knowledge including an analysis of all third party highway related insurance claims received by the Highway Authority and its Agents. A five-year rolling programme will be maintained with an Annual Review taking place in May and June each year. The Annual Review will provide opportunities for local priorities to be amended. In addition, new schemes will be added to the programme for the new years thus maintaining a full five-year programme.

In determining priorities for footway maintenance, it is important to ensure that opportunities are taken to aid social inclusion particularly improving accessibility for older and disabled people and also the use of prams and push chairs. This may include the provision of dropped kerbs in suitable locations or textured paving adjacent to crossing points.

Although ensuring the safety of footways for users is a priority, in some cases the presence of roadside trees may complicate the provision of footway surface regularity. The radical treatment or complete tree removal necessary to ensure surface regularity may not be possible or desirable and reduced standards of surface regularity may be a more acceptable and sustainable outcome.

Surface treatments, which are a separate category in carriageway maintenance, are included in Resurfacing and Reconstruction (R & R) in the case of footways.

Basic Maintenance

Basic maintenance comprises minor reactive works on existing footways alongside roads or independent footpaths, and includes associated consequential works to existing kerbs and verges. Needs are assessed through the regular highway inspection regime,

local knowledge and reports from the public. Highway safety is maintained by undertaking continual programmes of patching and minor repairs and to prevent damage to the footway by ingress of water and ice.

The objective is to maintain the integrity of footways and footpaths for safe use by the public.

Types of defects to be recorded and investigatory levels are discussed in chapter 5, but particular consideration should be given to:

- defective kerbs giving rise to a hazard or placing the integrity of the highway at risk
- dangerously rocking flagstones
- cracks or gaps between flagstones
- projections including manhole frames, boxes and other such ironware
- isolated potholes
- depressions and bumps
- slippery surfaces
- longitudinal cracking of kerbs, channels or setts
- badly aligned or tilted kerbs, channels or setts
- generally disintegrated kerbs, channels or setts
- sunken kerbs, channels or setts.

The standard for patching is to be in accordance with the principles laid out in the New Roads and Street Works Act 1991 Specification for the Reinstatement of Openings in the Highway.

Maintenance requirements for unsurfaced footpaths and public rights of way are not covered in this Highway Maintenance Plan.

7.4 CYCLEWAYS

The condition of cycleways can contribute to the core objectives as follows:

- **Safety**
 - nature, extent and location of surface defects
 - nature and extent of kerb and edging defects
- **Serviceability**
 - nature and extent of surface defects
 - extent of encroachment and weed growth
 - the slipperiness of the surface
 - the quality of the surface
 - integrity of the network
- **Sustainability**
 - convenience and integrity of the network
 - nature, extent and location of surface defects
 - extent of damage by over-running and parking.

Investigatory levels are based on the standards, details and definitions held within the Rules and Parameters (RP) of the UKPMS.

The maintenance budget will be split into the category of cycleway. The only condition index applicable for cycleways is:

- Overall CI – This will contribute to the budget spend for the structural work.

The following table shows the intervention levels for different road categories:

Cycleway Category	UKPMS rules and parameters threshold Level Overall CI
A	≥ 25
B	≥ 25
C	≥ 25

Maintenance of cycleways and cycletracks is carried out under the two headings of:

- Resurfacing and Reconstruction (R & R)
- Basic maintenance.

Resurfacing and Reconstruction (R & R)

Definitions, policies, objectives and programmes are the same as for footways in 7.3 above. Network integrity is a particularly important consideration where cycle routes are segregated for part of their length but intermittently rejoin the carriageway, and in these circumstances a reasonably consistent standard of maintenance should be provided and attention paid to carriageway edge condition in the unsegregated sections.

Basic Maintenance

Definitions, policies, objectives, programmes and investigatory levels are the same as for footways in 7.3 above.

7.5 HIGHWAY DRAINAGE SYSTEMS

The condition of highway drainage systems can contribute to the core objectives as follows:

- **Safety** - accumulation of water on carriageways, footways and cycleways
- **Serviceability** - accumulation of water on carriageways, footways and cycleways
- **Sustainability** - polluted effluent from clearing of highway drainage affecting watercourses
 - inadequate drainage of the highway structure will reduce effective life and increase maintenance liability.
 - Authorities have a duty to prevent nuisance to adjoining landowners by flooding and should also work with others in the wider community to minimise the future risk of flooding.

Highway drainage systems fall into the main headings of:

- culverts
- grips and ditches
- piped drainage
- pumps.

Under these headings there are two distinct categories of drainage system maintenance and drainage cleaning/cleansing.

Drainage system maintenance comprises:

- maintenance and replacement of existing carriageway drainage systems
- replacement and realignment of kerbs for drainage purposes
- maintenance and replacement of culverts up to a diameter of 1.2 metres or structures with a span of up to 0.75 metres (culverts and structures exceeding these measurements are outside the scope of this Maintenance Plan)
- all drainage works not included in reconstruction, overlay, resurfacing or surface dressing
- maintenance to pumps and sumps is carried out by specialist contractors.

The objectives of drainage system maintenance are to maintain the structural integrity of existing drainage systems to prevent accumulations of water on the carriageway, to prevent the ingress of water into the pavement structure and to maintain the highway in a safe condition for road users and pedestrians.

The policy is to undertake minor works to ensure that existing drainage systems continue to function to their full capacity and to assess more major works for inclusion in a Resurfacing and Reconstruction (R & R) or improvement programme. Needs are assessed by the regular inspection of the highway, local knowledge and reports from the public.

In regard to safety, types of defects to be recorded and investigatory levels are discussed in chapter 6. Culverts under roads and manholes should be inspected for structural damage or deterioration and cleaned when required. Piped drainage, soakaways and associated systems should be checked and flushed during service inspections and cleared when required.

Where a drainage system exists, it should be capable of removing water from the carriageway as it reaches a gully or grip. Where this is not the case and cleaning or jetting does not effect an improvement, the necessary remedial action should be taken as soon as possible.

For ironware comprising covers, gratings, frames and boxes set in carriageways the following condition standards apply. Manhole covers and boxes should be installed to a tolerance of +/- 5mm to the surrounding level. Gully frames and gratings should be installed level or not exceeding 10mm lower than the surrounding carriageway. When boxes, frames and covers are found to be greater than 20mm lower than the surrounding carriageway they should be re-set.

Drainage cleaning/cleansing comprises:

- The testing, rodding and jetting of the highway drainage system. This includes drains, gullies, piped ditches, grips, carriageway drainage on structures and drainage of subways. The cleaning of drainage installed outside the highway boundary under licence or easement should be included.

- The cleaning of gullies and catchpits or manholes which are the responsibility of the highway authority. As a guide, this is all surface water drainage the sole purpose of which is to remove water from the highway; however, this is not always the case. If in addition the drainage system carries roof water or water from private properties, that system is the responsibility of other authorities. In these cases, the highway authority is responsible for the gully and gully connections only.
- The maintenance of ditches and grips through the removal of silt, vegetation growth and damage to allow free passage of water from the highway. The maintenance should be confined to those ditches which are the responsibility of the highway authority (in the main, ditches are the responsibility of the adjoining landowner). However S100 of the Highway Act 1980 empowers authorities to keep open ditches on land adjoining the highway.

The objectives of drainage cleaning/cleansing are to prevent water penetrating the foundations of carriageways and footways, to remove detritus from gullies or catchpits to ensure the rapid removal of water from the road surface, to maintain free flow conditions in all open channels and grips and to maintain self cleansing flows in the drainage pipes, catchpits and outfalls.

The policy is to carry out the minimum amount of drainage cleansing and cleaning commensurate with the objectives and needs. They are assessed through routine highway inspections, awareness of frequent flooding at a particular location, reports of drainage defects from gully maintenance operatives and complaints of malfunction. Types of defects to be recorded and investigatory levels are discussed in chapter 5. Grip clearing should be commenced after the last grass cut of the year and completed if possible before the onset of winter. Kerb offlets can sometimes be neglected and should be jetted once per year or as often as is necessary to ensure efficient working.

Areas at risk of flooding should be identified and recorded within the Highway Register. Inspection of these sites will form part of the safety inspection regime. Supplementary checks should be undertaken during periods of heavy rainfall as resources allow.

Gullies are cleansed at a 6 monthly cycle. Non-functioning or damaged gullies are recorded by the Contractor and reported to the client for further investigation and remedy.

As a consequence of limited resources and historically poor drainage system records, it is not possible to undertake a programme of inspection for the entire highway drainage system. However, divisions undertake a programme of investigation and cleansing using a high-pressure jetter. Priority should be given to inspecting and cleansing sections of system which pose a high risk of flooding or disruption to the network. During all drainage investigation records of the system must be compiled and added to the inventory.

Gullies should be over filled when emptied to ensure that they are clear. If not, the unit should be recorded for jetting. No more than 50mm of material should remain in the unit before it is recharged with clean water.

The frequency of cleansing of oil interceptors will depend on their design and location and will need particular consideration on a site specific basis. Material arising from all road drainage emptying and cleansing operations has potential implications for pollution

and should be disposed of correctly in accordance with the Environment Agency requirements.

7.6 EMBANKMENTS AND CUTTINGS

The condition of embankments and cuttings can contribute to the core objectives as follows:

- **Safety** - risk of loose material falling to injure users or damage facility
- **Serviceability** - risk of damage or service interruption
- **Sustainability** - damage or loss of habitat
 - interruption or pollution of watercourse
 - extent of damage and reduced life.

Maintenance of embankments and cuttings covers the repair of earth slips and the provision of any necessary associated drainage and new retaining systems. Anchors, walls, soil stabilisation and similar works should be included.

The objective is to maintain cuttings and embankments in a safe condition and to provide or maintain associated drainage systems to ensure stability.

The policy is to undertake any necessary minor works to ensure that existing earthworks continue to fulfil their function and to assess more major works for inclusion in a Resurfacing and Reconstruction (R & R) or improvement programme. Needs are assessed through regular inspection of the highway, local knowledge and reports from the public.

There are no stated standards but anything considered to be a danger to safety should be treated as a Category 1 defect. Other problems should be remedied as soon as practicable having due regard to safety.

A risk register of embankments and cuttings will be compiled for North Yorkshire that will be used to identify sites that require inspection. Specialist geotechnical inspections will be undertaken at appropriate frequencies by the Engineering Consultancy Partner, Jacobs Consultancy.

7.7 SOFT LANDSCAPED AREAS AND TREES

The condition of soft landscaped areas and trees can contribute to the core objectives as follows:

- **Safety**
 - obstruction to user visibility and legibility of traffic signs
 - falling branches from trees
 - leaf fall from trees causing slippery surface
 - root growth affecting surface regularity
- **Serviceability** - potential for service interruption
 - quality of user experience
- **Sustainability** - landscape conservation
 - mitigation of climate change effects support for habitat and biodiversity
 - problems of root growth for surface, structure and highway drainage.

Maintenance of soft landscaped areas and trees covers urban grass cutting, rural grass cutting, highway tree and hedge maintenance, weed control and other verge maintenance.

Urban grass cutting is undertaken on those sections of road subject to speed limits of 40mph or less, on land as defined in the highway register for up to eight cuts per season.

Additional grass cutting shall be carried out in defined sensitive areas in the agency districts of Harrogate and Scarborough.

Rural grass cutting is undertaken on those sections of roads subject to speed limits greater than 40mph and at the following locations:

a) A and B roads

A width of 3 metres where attainable, shall be cut twice per season. In addition, visibility splays and visibility envelopes shall be cut twice per season, but visibility must be maintained. Any verge area more than 3 metres away from the carriageway or behind visibility requirements shall be cut every two years if necessary. If this cutting is undertaken, arrangements shall be made to cut alternate side or stretches on each side.

b) All other Rural Roads

Verges shall be cut for visibility at road junctions, for visibility of road signs alongside well used footways and carriageways which have heavy pedestrian use. In addition, a single swathe cut 1.0 to 1.5 metre cut width on each side may be made once per season, on Class III or Unclassified Roads provided the costs are contained within cost limits.

Tree and hedge maintenance covers the management of foliage within or immediately adjoining the highway. The main functions are pruning, pollarding and the removal of dangerous overgrowth, branches, roots or trees presenting a hazard to road users, pedestrians and adjoining property.

The objectives include the Highways Authority's duty under S96 of the Highways Act 1980 to prevent all planting hindering the reasonable use of the highway or to be a nuisance to owners or occupiers of land adjacent to the highway and to prevent damage to adjacent property by tree and hedge growth, prevent danger to the public by tree and hedge growth, maintain safe passage to highway users and prevent obstruction of signs by foliage.

The policy is to examine all trees, shrubs and hedges within or adjoining the highway on an annual basis to establish if they are in a potentially dangerous condition and to take any remedial action necessary; need assessment being based on historical information as no comprehensive inventory exists.

Trees are important for visual amenity and nature conservation reasons and should be retained and protected wherever possible. Pruning or felling of trees can be the subject of significant local concern, and should only be done with specialist advice and support. Where concern is expressed about a tree on or affecting the highway, the matter shall be referred to the Horticultural Team at County Hall, who will determine the appropriate course of action and arrange for all necessary works to be undertaken.

Types of defects to be considered for treatment on safety grounds are discussed in chapter 5 and, where considered dangerous, should be treated as Category 1 defects.

In regard to trees and shrubs owned by the highway authority, works should be undertaken at the correct time of year where appropriate, due consideration given to Tree Preservation Orders if applicable and specialist horticultural advice sought if required. Particular care should be given to privately owned trees where the owner and occupier should be warned of any danger and given notice to take the necessary action.

Subject to failing to take action, S154 of the Highways Act 1980 empowers authorities to deal with hedges, trees and shrubs growing on adjacent land which overhang the highway and to recharge the reasonable costs of this action.

Where trees are protected by a Tree Preservation Order, the Local Planning Authority will be consulted and if necessary an application for consent to do the work must be submitted and approved.

The trimming of seasonal growth of hedges on rural roads which are the responsibility of the highway authority should be given consideration, particularly where sight lines and road signs may be obscured. Where there are special requirements in visibility areas or across central reserves, cutting should be undertaken when required. Owners of private hedges should be requested to adopt similar standards.

In regard to shrubberies which are the responsibility of the highway authority, consideration should be given to pruning for visibility purposes once they are established.

Any action taken must be in accordance with the requirements of the EC Nesting Birds Directive and the Wildlife and Countryside Act 1981 in regard to protection for birds and their nests. Any trimming should, as far as possible, be done in late winter to avoid the bird nesting season and to allow birds and mammals the maximum opportunity to take advantage of any fruits and seeds present.

Weed control covers the routine spraying of kerbed roads and footways to prevent weed damage to kerbs, channels and paved areas.

The objectives are to prevent the growth and establishment of noxious and other weeds and to prevent damage to footways by the growth of weeds. All weed spraying should be carried out using approved pesticides in accordance with the Control of Pesticides Regulations 1986. For all highway operations, a non-residual contact herbicide must be used and currently the only weed killer which conforms to the Health & Safety Commission's Code of Practice and with the Environment Agency's requirements is glyphosate.

The policy is for the contractor to apply one application of glyphosate with additional treatments if required and need assessment is based on historical information as no comprehensive inventory exists.

Spraying should only be undertaken when favourable spraying conditions exist.

Sprays can also be used to eliminate weeds and control growth around posts carrying signs, along guard rails, along the edges of kerbs, growth of grass on the strip adjoining the edge of the carriageway and on central reservations. Further legislation is contained in the Ragwort Control Act 2003. The use should be the minimum compatible with the required results.

The Weeds Act 1959 requires authorities to take action to prevent growth of injurious weeds growing within the highway. The prescribed injurious weeds are:

- ragwort
- broad leaved dock
- curled dock
- creeping thistle
- spear thistle.

Reference shall be made to the Code of Practice on how to prevent the spread of Ragwort, June 2004, published by DEFRA to apply best practice principles including risk assessment priorities. Specialist advice should be sought to deal with these weeds.

In North Yorkshire, ragwort is a significant problem and must be pulled and removed. However, highway inspectors should be able to identify all noxious weeds as well as Japanese Knot Weed and Giant Hog Weed.

Other verge maintenance covers routine operations that may be required to keep the highway verge, central reservations and cutting and embankment slopes in a safe and tidy condition.

The objective is to preserve the width of the carriageway, footway or cycleway and the policy is to undertake the minimum amount of works necessary commensurate with the objective.

Needs are based on historical data, complaints and the observations of the Divisional Engineer and works will only be carried out after a site inspection.

The main activity under this heading is siding (the edge maintenance of carriageways, footways and cycleways) which may be necessary to prevent encroachment of grass and vegetation resulting in the reduction of effective width.

As a guide, siding can be considered under the following circumstances:

- rural roads – only minimum of siding to be carried out on carriageways e.g. prior to surface dressing or renewal of edge markings
- urban roads – siding of carriageway not normally required
- footways – siding carried out to maintain width of footway
- cycleways – siding carried out to maintain width of cycleway.

Currently, resources prevent inspections of every tree adjoining the highway within the County. Inspectors will receive training to assist them in assessing the condition of trees to identifying those posing a hazard as part of the safety inspection regime.

The County Council Horticultural Technician will have responsibility for service inspections of landscaped areas and will organise tree surveys as required. Landscaped areas will be inspected on an annual basis.

7.8 SCAVENGING AND SWEEPING

Scavenging and sweeping relates to the sweeping, cleaning and collection of litter and debris necessary for the preservation of the carriageway and traffic safety and covers the previous categories of carriageways, footways, cycleways, highway drainage systems, embankments and cuttings, and landscaped areas and trees.

The objective is to preserve the amenity of highway land and the policy is to undertake the minimum works necessary commensurate with the objective. Need assessment is based on historical data, complaints and observations of the Area Manager.

Particular attention should be paid to the requirements of litter and debris removal prior to grass cutting as detailed under Soft Landscaped Areas and Trees in 7.7 above. Sweeping, cleaning and collection operations relating to public health, amenity or environmental requirements are not covered in this Maintenance Plan as they are the responsibility of the District Authorities pursuant to the Environmental Protection Act 1990.

7.9 FENCING AND BARRIERS

The condition of fences and barriers (whether for safety or boundary purposes) can contribute to the core objectives as follows:

- **Safety** - integrity and location of safety fencing for vehicles and pedestrians
- risk of livestock disrupting traffic
- **Serviceability** - risk of livestock disrupting traffic
- **Sustainability** - appearance and condition of fencing.

Fencing and barriers comprise safety fencing, pedestrian guard rails, and where the highway authority is responsible, boundary fencing, walls and anti-dazzle screens.

Any works associated with reconstruction, overlay and resurfacing should be included in those schemes, and any works on snow fencing should be included with salting, snow ploughing and the like.

The objective of maintaining fences and barriers is to preserve the items in a sufficiently sound and structural condition fit for purpose and not be a danger to road users and pedestrians.

The policy is to undertake any necessary minor repairs to ensure that existing fencing and barriers continue to fulfil their function and to assess more major works for inclusion in a Resurfacing and Reconstruction (R & R) or improvement programme Needs are assessed by the regular inspection of the highway, local knowledge and reports from the public. Pedestrian barriers will be visually inspected during safety inspections.

Types of defects to be considered for treatment on safety grounds are discussed in chapter 6. Damaged sections of safety fences and pedestrian guard rails should be treated as Category 1 defects and made safe within 24 hours unless damage is clearly superficial with no loss of integrity of the fence or barrier. Permanent repairs should be

effected as soon as possible thereafter, where it is not possible to effect repairs within 24 hours, the defect must be appropriately marked with cones and, where necessary, signs.

Sections of safety fence that are found to be mounted at heights outside the specified limits should be treated as Category 2 defects.

All fences and barriers, whether for safety or general purposes are important features and their overall appearance is an environmental consideration. They should therefore be cleaned and painted as and when necessary. In respect of safety fences, when provided with chevron markings, these should be dealt with in accordance with the cleaning regime for traffic signs.

7.10 ROAD MARKINGS AND STUDS

The condition of road markings and studs can contribute to the core objectives as follows:

- **Safety**
 - route delineation in darkness and bad weather
 - potential for damage and injury with loose studs
 - traffic control
- **Serviceability** - ease of use in darkness and bad weather
- **Sustainability** - support of sustainable transport modes
 - edge delineation to reduce edge damage
 - movement of wheel tracking to reduce localised damage.

This category comprises the maintenance and replacement of existing road markings and studs and includes the cleaning, repair or replacement of other road markings such as stone or metal bollards to restrict access which are not included in other categories. Road markings and studs at traffic signals and pelican crossings are also included in this category.

Any work associated with reconstruction, overlay and resurfacing should be excluded as they form part of those schemes.

The objective of road markings and studs is to define carriageway lanes and edges together with warning, parking, waiting and other restrictions in a manner clearly visible by day and night.

The policy is to ensure that the objective is achieved by renewal or replacement as necessary and needs are assessed by:

- reports of defective lines and studs from highway inspections
- complaints of defective lines from members of the public and the Police
- replacement of lines and studs as a result of carriageway structural repairs
- identification of defective or missing road studs upon completion of winter service operations.

Worn or missing lining and studs will be identified during safety inspections, however, an inspection for reflective conspicuity will be undertaken on all lining and studs in non-illuminated areas as part of the service inspection. Programming of this inspection

should coincide with checks for traffic signs and bollards and be undertaken in advance of winter to allow time for any remedial work to be carried out.

The standards for markings and studs are as follows:

- road markings – to be renewed on main roads when approximately 30% of the area becomes ineffective or worn away
- lines and studs – to be replaced after surfacing or surface dressing works.

During resurfacing works, 'No Road Markings' boards should be displayed until all markings have been replaced. Types of defects to be considered for treatment on safety grounds are discussed in chapter 6.

All mandatory markings existing before surface dressing should either be masked during treatment or replaced as soon as reasonably practicable after the completion of work. If it is not possible to restore immediately in permanent materials, temporary markings should be used at sites where their absence is likely to give rise to dangerous conditions. Stop and Give Way marks should ideally be replaced permanently within seven days, other mandatory lines within 14 days and other markings and road studs within 28 days of completion of work.

Reflective studs which are either missing or have become defective should be replaced individually or by a bulk change depending on the individual highway circumstances. The aim should be for a minimum 90% of the studs to be reflective prior to the winter period. Displaced or loose road studs likely to cause a hazard are dealt with under the safety provisions in chapter 6.

Road markings on Category 2 roads and at known accident sites should be renewed when more than approximately 30% of their area becomes ineffective or worn away. Lesser standards can be adopted on other roads.

7.11 TRAFFIC SIGNS AND BOLLARDS

The condition of traffic signs and bollards can contribute to the core objectives as follows:

- **Safety** - identification of risk to users
- separation of potential traffic conflicts
- **Serviceability** - contributes to ease of use
- contributes to network integrity
- **Sustainability** - support of sustainable transport modes
- contribution to local economy
- heavy traffic routing can optimise maintenance.

This category comprises the cleaning of all signs and bollards, the repair and replacement of existing non-illuminated signs, posts and bollards and the replacement of sign faces on externally lit signs. The provision of new equipment and facilities is excluded.

The objectives are to keep traffic signs legible and visible at all times, as far as possible, in relation to the road use and traffic speeds and to identify and remove obsolete signs and posts.

Needs are assessed through routine highway inspections, reports of defective signs from cleaning operatives and defect reports from members of the public. The policy is to clean, repair, replace or remove as necessary.

Types of defects to be considered for treatment on safety grounds are discussed in section 5, but particular attention should be addressed to:

- matters affecting the legality of important warning or regulatory signs
- damage, deterioration or vandalism to signs and bollards leaving either the sign or situation to which it applies in a dangerous condition
- missing traffic cylinders across gaps in central reserve fencing at emergency crossing points.

The speed of permanent repair will depend on the degree of danger ascertained through a risk assessment, but important warning and regulatory signs should be replaced as a matter of urgency.

Inspections will include a night survey. At the time of inspection the signs will also be checked for accuracy and whether they reflect current route priorities. During service inspections, brackets, bolts and fittings should be tightened and adjusted. Painting of supports and frames should be undertaken as required but not exceeding ten-year intervals.

Additional standards in respect of illuminated signs and bollards include optical inspection and cleaning together with the inspection of sign supports every two years and lamp changing at regular intervals to coincide with service inspections and cleaning.

7.12 TRAFFIC SIGNALS, PEDESTRIAN AND CYCLE CROSSINGS

The condition of traffic signals, pedestrian and cycle crossings can contribute to the core objectives as follows:

- **Safety** - separation of potential traffic conflicts
- key safety contributor for vulnerable road users
- **Serviceability** - contributes to ease of use and efficiency
- contributes to network integrity
- **Sustainability** - support for local economy
- support of sustainable transport modes.

The primary objective is to keep the signal controlled crossings legible, visible and effective as far as possible at all times in relation to the road use and traffic speeds.

In regard to this Highway Maintenance Plan, traffic signals, pedestrian and cycle crossings comprise damage likely to cause a hazard, lamp failures, signals not operating correctly or in the right direction and exposed wiring.

These issues, which are all safety related, together with suggested treatments are discussed in chapter 5.

The following standards are applicable for signal control facilities:

- defects in operation should be treated as Category 1
- for urgent faults emergency action should be taken within specified times; damage repairs within 24 hours; less urgent faults to be repaired within one week
- warning signs should be erected if signals are likely to be out of action in excess of one hour
- at certain critical junctions, temporary traffic management measures should be installed if signals are likely to be out of action in excess of one day
- failed lamps should be replaced within two and a half days
- signal lenses, regulatory signs and VMS signs should be cleaned once per year
- flashing zebra crossing beacons should be replaced within 24 hours
- school crossing patrol flashing lights should be repaired within 24 hours during term time.

The maintenance of traffic signals and controlled crossings is undertaken as part of a separate contract from the Partnered Works Contract. The Tender for the maintenance of Traffic Signals, Pelican, Puffin, Toucan Pedestrian Crossings, Variable Message signs, Route Monitoring and Assessment Equipment specifies frequencies of inspection and maintenance:

Lamp maintenance/equipment check – Every six months
 Electrical Safety Test – Annual
 Bulk lamp change – Annual
 Conditional/Operational assessment – Bi-annual

7.13 STREET LIGHTING

The condition of street lighting contributes to the core objectives as follows:

- **Safety**
 - increase night visibility for all users
 - contribution to crime prevention and reduced fear of crime
 - column deterioration can compromise safety
 - reduce night-time accidents
- **Serviceability** - ease of use at night for all users
- **Sustainability** - energy consumption is a sustainability issue
 - column deterioration may have long term financial implications
 - help to regenerate and attract commerce.

Insofar as street lighting is concerned, only those issues constituting a likely hazard arising out of safety inspections discussed in chapter 6 are within the scope of this Maintenance Plan.

Standards for street lighting are defined in the 'Well-lit Highways ~ Code of Practice for Highway Lighting Management'.

7.14 BRIDGES

Condition and standards for bridges and structures are not dealt with within this Highway Maintenance Plan. Reference should be made to the North Yorkshire County Council Bridges Plan.

7.15 REGULATORY FUNCTIONS

Regulatory functions can contribute to the core objectives as follows:

- **Safety** - minimising and signing of obstruction
- **Serviceability** - minimising congestion and disruption
- **Sustainability** - inconvenience to disabled people
- heavy vehicle parking causes structural damage.

Standards in respect of regulatory functions are governed largely by statute and can be the responsibility of other organisations or administered by other sections or departments within the authority. In such cases affective co-ordination and liaison is essential.

New Roads and Street Works Act 1991

The New Roads and Street Works Act 1991 (NRSWA) is the legislation that enables utility companies to place and maintain apparatus in or on the public highway. Objectives of the legislation are that Highway Authorities and Utilities should co-operate with each other to ensure that disruption to all road users is minimised as far as possible, the integrity of the highway structure is maintained and the safety of those using the highway is not compromised.

The wide reaching requirements of NRSWA includes a service inspection as identified in section 6.3.

Traffic Management Act 2004

The purpose of the Act is to 'keep traffic moving' by minimising congestion and disruption on the highway network. In this respect, there is a statutory duty as local highway authority to "Manage the road network with a view to achieving, as far as may be reasonably practicable having regard to other obligations, policies and objectives, the following objective:

- (a) securing the expeditions movement of traffic on the authority's roads network
- (b) facilitating the expeditions movement of traffic on roads networks for which another authority is the traffic authority"

The Council has appointed the Assistant Director (Highways North Yorkshire) as Traffic Manager under the regulations as the first part of the enactment phase.

It is intended to enhance and extend current systems already in place to meet the forthcoming challenges of the new legislation in further phases.

Further regulatory and enforcement duties include:

- contribution of vehicular crossings
- public right of way
- adoption of highways
- highway register
- licensing skips, hoardings, scaffolding, temporary road closure etc.
- encroachments on the highway
- illegal and unauthorized signs
- illegal parking on verges and footways

8. WINTER SERVICE

The winter service can contribute to the core objectives as follows:

- **Safety** - detailed statutory obligations and user needs is a prime consideration of the service
- **Serviceability** - maintaining availability and reliability of the highways network is a key objective for the winter service and one where user judgements of performance will be immediate rather than long term
- **Sustainability** - low temperatures and the formation of ice can cause serious damage to the fabric of running surfaces and the winter service can therefore be an important contribution to whole life costs.

North Yorkshire County Council's aim is to provide an efficient winter service, which will permit the safe movement of traffic throughout the County and keep delays to a minimum.

Legislation

The winter service policy has been developed in compliance with S41 and S150 of the Highways Act 1980.

The Railways and Transport Safety Act 2003 Section 111 introduced an amendment to S41 of the Highways Act 1980. The revision states the highways authority is under a duty to ensure, as far as reasonably practicable, that safe passage along a highway is not endangered by snow or ice.

Pre/Post Salt Applications

Carriageways

Three priority levels have been determined for prioritisation of treatment of the carriageways i.e.

Priority 1 – Includes all principal roads and important B class, C class and unclassified roads as approved by Members

Priority 2 - Includes the remainder of B class and appropriate C class and unclassified roads as approved by Members. Note not all remaining C class roads will be Priority 2

Priority 3 - The remainder of the network including estate roads.

Winter Maintenance involves treating the highway to:

- i) prevent ice from forming known as 'precautionary salting' or 'pre-salting'
- ii) melt ice and snow already formed; 'post salting'

Priority 1 routes will receive preferential treatment in all conditions. Pre-salting will only be carried out on Priority 1 routes unless the forecast is for extreme winter conditions in which case pre-salting of Priority 2 routes may be considered. Treatment will be completed within the times stated in the policy.

Pre-salting will normally be completed on an evening except where precipitation is likely to occur overnight. Where an evening pre-salt takes place with no precipitation some Priority 2 post salting may take place the following morning subject to resources. If precipitation occurs after an evening pre-salt than Priority 1 post-salting will take place the following morning before any Priority 2 treatment is considered. In widespread

freezing and wet conditions Priority 1 and Priority 2 routes will be treated as resources permit, but with preference to Priority 1 routes.

Priority 3 routes will not normally receive treatment unless freezing conditions persist for more than 72 hours.

The majority of Priority 1 routes should be treated by 0700hrs with the remainder by 0730hrs, subject to changes in forecast and/or weather conditions.

In general, treatment will not take place between 2300hrs and 0500hrs; however, specific conditions may require attention.

Priority 2 and 3 routes will be treated as soon as practicable after Priority 1 routes have been completed.

Footways/Cycleways

Normal overnight frosty conditions will not warrant treatment of footways. In exceptional overnight conditions which give rise to black ice or during continuous frost/ice conditions, footways in main shopping streets may be treated.

Cycleways not contiguous with carriageways will not be treated.

Snow Clearance Policy

Carriageways

Light snow (up to 25mm) – as pre-salting

Moderate snowfall (25mm to 100mm)

Priority 1 routes passable in three hours

Priority 2 routes will be cleared where conditions allow resources to be freed from Priority 1 routes.

Heavy snowfall (over 100mm)

In these circumstances available resources including reserves, contractors and farmers will be mobilised to keep Priority 1 routes passable and to maintain at least one route to all centres of population. It should be noted that continuous snowfall and strong winds will influence snow clearing operations considerably and will therefore delay completion times.

Footways

When conditions and resources permit, snow will be cleared from shopping streets, then heavily used footways (main access routes) and other footways in prolonged conditions.

Unadopted Roads

The County Council will not carry out winter maintenance on unadopted roads. However, specific requests from District and Parish Councils may be considered only if resources are available and all relevant costs are paid by them.

Target Spread Rates of Salt

a) Precautionary Salting

(i) salt stored under cover –10g/m²

(ii) salt stored in the open –20g/m²

b) Post-Treatment Salting (all methods of storage)

(i) Prior to snowfall dependent upon forecast conditions – 20-40g/m²

(ii) Snow already on the road – depths in excess of 30mm ploughing and salting – up to 40g/m²

c) Hard Parked Snow and Ice

- (i) air temperatures above -5°C – Successive salting at 20/40g/m²
- (ii) air temperatures below -5°C – Gritting with single size abrasive aggregate not exceeding 6mm or 5mm sharp sand

Snowploughing

No policy has been approved for snowploughing operations. Reference should be made to Department of Transport Winter Maintenance Code of Practice (Section 10).

Snow Fences

Snow fences are not in use in the County but powers to erect and secure easements are provided in the Highways Act 1980, covered by Sections 102, 249, 251, 291 and 292. For guidance in design and location of snow fences reference should be made to TRRL Report LR362 'Snow Fences'.

Salt Bins/Salt Heaps

Salt bins or salt heaps will only be provided by the County Council on steep hills and dangerous bends and on Priority 1 routes at exceptional locations. They will be spaced a minimum of 40 metres apart and contain a maximum of 0.5 tonnes of salt. A salt bin will be provided at the main access to each school which is not on a Priority 1 treatment route.

Care must be taken to avoid locating the bins where they may be used for the disposal of litter or act as litter traps.

The County Council will consider provision of salt bins at locations not meeting the above requirements where salt bins are funded by another local authority.

Forecasts and Decision Making

The Business & Environmental Services Directorate subscribes to the Meteorological Office Open Road forecast which includes a 24 hour consultancy service. The system is also supplemented with a network of nine weather stations throughout the County that provide data to computers located in each Area and at County Hall. The decision making process is detailed within the Winter Service Operational Manual.

Public Consultation and Information

Large-scale public consultation took place as part of the 2002 review process. In the intervening period, before the next such review, any public requests for changes to the winter service will be compiled and assessed during the annual officer review of the service then presented to Executive Members for consideration and approval.

The County Council has produced an information leaflet entitled 'Your Guide to Winter Service in North Yorkshire'. The leaflet details the service provided and explains the Winter Service policy. It also provides contact details for enquiries and gives advice on travelling in winter conditions. The information in this leaflet is also included annually in the autumn edition of the North Yorkshire Reporter, the County Council newsletter, which is delivered to every home in the County.

Consideration is also being given to provide winter service information on a web-based system through the North Yorkshire County Council website. A target date for this has not yet been established.

9. WEATHER AND OTHER EMERGENCIES

Climate Change

Predictions for the future indicate that the climate is changing. During the past few years evidence is emerging of hot, dry summers and warm, wet winters with episodes of intense rain and increased incidence of flooding.

Climate change will influence highway maintenance as follows:

- increased risk of flooding from rivers and sea
- increased flooding from inadequate drainage
- deterioration and damage to highway infrastructure from subsidence, heave and high temperature
- damage to bridges, signs and tall structures from increased wind speed
- increased road safety problems from adverse driving conditions and deterioration of infrastructure
- effects on the management of trees, landscape and biodiversity.

In response to the increased frequency of flooding from rivers and inadequate drainage, flooding prevention and mitigation measures are currently being designed and implemented in conjunction with partners.

Emergency response in North Yorkshire is governed by the nature and extent of the emergency and is categorised as major and minor.

Major

Major civil emergencies are situations where extensive relief needs to be organised following an accident such as a severe explosion, an aircraft crash, a natural disaster or a major hazard from toxic chemicals. In such a situation, Business & Environmental Services will provide support to the emergency services in the form of plant, vehicles and manpower. Detailed procedures and information are contained within North Yorkshire County Council Civil Emergency Scheme.

Minor

Minor emergencies include:

- Localised flooding
- High winds
- High temperatures
- Structural collapse
- Road accidents
- Spillages

The seven Area Offices under the control of the Area Manager provide response to these emergencies. Where appropriate, the Network Management based at County Hall will provide a support role. Guidance and procedures for dealing with these situations are contained within the Minor Emergency Operational Plan. Highways North Yorkshire has a network of 'out of hours' contacts to which minor emergencies can be reported outside normal working hours.

The Emergency Planning Unit is an additional contact for Environment Agency Flood Warnings and Meteorological Office Severe Weather Warnings. On receipt copies are faxed to the Area Offices to provide early warning and trigger the planning and mobilisation of the resources necessary to deal with the anticipated problems.

BUSINESS & ENVIRONMENTAL SERVICES

HIGHWAY MAINTENANCE PLAN

**PART C – FINANCIAL AND PERFORMANCE
MANAGEMENT**

10. PERFORMANCE MANAGEMENT

10.1 INTRODUCTION

Performance management is a fundamental component of best value and comprehensive performance assessment (CPA), in that there is a requirement for authorities to secure continuous improvement in the way they exercise their functions, having regard to a combination of economy, efficiency and effectiveness.

In order to demonstrate continuous improvement, performance has to be continually measured and this is undertaken through performance indicators, standards and targets which are defined as follows:

- Performance Indicator – the measure of performance in exercising a function
- Performance Standard – the minimum acceptable level of performance in the exercise of a function and measured by reference to a performance indicator for that function
- Performance Target – the level of performance in the exercise of a function that is expected to be achieved over a minimum period of a year and measured by reference to a performance indicator for that function.

In respect of Best Value, performance can be measured through four basic methods:

- Input – the resources (human, material or financial) utilised in delivering the function or service
- Process – the methodology and procedure of committing the resources in the pursuit of fulfilling the function
- Output – the resultant effect (often numerical) of completing the process with the resource input
- Outcome – the ultimate impact on the community and the best way of measuring performance.

Targets should be set for every indicator, and for each indicator set for a minimum period of one year, with an optimum period of five years as all services have to be reviewed every five years. Moreover, in regard to national indicators, Government targets for some, such as those reflecting cost-efficiency and quality, are being set such that authorities will have to reach, within a period of five years, the performance level of the top 25% of authorities at the time the targets were set.

In order for continuous improvement to take effect, the basic processes involving management, procurement and service delivery mechanisms require improvements in outputs, which will lead to improved outcomes in the Best Value performance indicators.

10.2 PERFORMANCE INDICATORS

The Audit Commission defines four levels of performance indicators:

1. Corporate health indicators – organisational, financial, managerial and democratic integrity of an authority.
2. Nationally set statutory service delivery indicators – Best Value Performance Indicators (BVPI)
3. Other indicators set by Government departments to cover areas other than BVPIs.

4. Locally set indicators – developed by individual authorities to reflect local priorities and provide key management information.

Contract performance indicators are additionally utilized to measure the performance of the engineering consultant and contractor by the assessment of project delivery to cost/time and client satisfaction.

10.3 BENCHMARKING

Although there is no absolute definition for benchmarking, it is a key measure for enabling comparisons and improving performance, both absolutely and relative to others. It is a systematic approach to business improvement and provides a structure to search for better practice in other organisations that can then be integrated into an authority's own service delivery.

Benchmarking is a fundamental element in the delivery of Best Value as it enables comparisons to be drawn in respect of the performance of local authorities. It is a stimulus to continuous improvement and provides the means for achieving the 'compare' element of the 4Cs of Best Value reviews.

The two main types of benchmark that need to be addressed in terms of achieving Best Value are:

- data benchmarking which involves the use of inputs and/or outputs for comparing performance, very often cost or measurement related
- process benchmarking which is a means of comparing and measuring processes, sequences or activities involved in service delivery with those of other organisations to identify how existing methods can be improved.

The participation of an authority in a benchmarking network (or club), which is both suitable and appropriate for its needs, is an essential component in enabling performance to be properly measured and compared. It will also assist in promoting targets that stretch the organisation, but are both achievable and meaningful and can demonstrate continuous improvement.

10.4 NATIONAL PERFORMANCE INDICATORS

The national best value performance indicators are set by Government and those reflecting service delivery are specified by DfT. Authorities have to measure all the indicators relevant to the service they provide, although the targets themselves are set locally by the authorities after taking account of Government guidance. The BVPIs are also mandatory indicators in LTP guidance.

The best value service delivery indicators reflect the national interest in the delivery of local services and are designed to enable comparisons to be made between the performances of different authorities, including different types of authorities and within authorities over time.

In order to ensure the best value performance indicators give a balanced view of performance, the Government has adopted five 'dimensions' of performance.

These are:

- strategic objectives: why the service exists and what it seeks to achieve
- cost/efficiency: the resources committed to a service and the efficiency with which they are turned into outputs
- service delivery outcomes: how well the service is being operated in order to achieve the strategic objectives
- quality: the quality of the services delivered, explicitly reflecting users' experience of services, fair access together with ease and equality of access to services
- fair access: ease and quality of access to services.

The Best Value Performance Indicators that are applicable to highway maintenance for 2005/06 are as follows:

- BVPI 99 Road casualties by categories of user and injury
- BVPI 100 Temporary road closures
- BVPI 102 Passenger journeys on buses
- BVPI 103 Bus information satisfaction (reported triennially)
- BVPI 104 Bus satisfaction (reported triennially)
- BVPI 165 Pedestrian crossings with facilities for disabled people
- BVPI 178 Footpaths and Rights of Way easy to use by the public
- BVPI 187 Condition of footway
- BVPI 215 Rectification of street lighting faults
- BVPI 223 Condition of Principal Roads (previously BVPI 96)
- BVPI 224a Condition of Non-Principal classified (previously BVPI 97)
- BVPI 224b Condition of Non-Principal unclassified (previously BVPI 97)
- BVPI 105 Damage to roads and pavements – total number of reported incidents of dangerous damage to roads and pavements repaired or made safe within 24 hours from the time that the authority first became aware of the damage, as a percentage of such incidents. (This has been deleted as BVPI but retained for internal use)

10.5 TRANSPORT ASSET MANAGEMENT PERFORMANCE INDICATORS

Four core objectives of service are recommended for Transport asset management:

1. Customer Service
2. Network Safety
3. Network Serviceability
4. Network Sustainability

It is proposed to develop a set of performance indicators based on the above four objectives and utilising existing Best Value Performance Indicators where these exist.

10.6 CONTRACT PERFORMANCE INDICATORS FOR MAINTENANCE PROCUREMENT

North Yorkshire County Council monitors the two primary service provision contracts for

(a) Design

(b) Works by use of the Highway Design and Highway Works Best Value Benchmarking Club.

The principles of project management based on ten standard key performance indicators are recommended by Constructing Excellence. Operation of this benchmarking process enables internal changes in performance to be measured and also comparison to be made with other members.

11.0 PROGRAMMING AND PRIORITIES

11.1 GENERAL

A fundamental requirement of delivering Best Value is to implement effective systems for programming and prioritising highway maintenance activities. Ideally sufficient funding would be available to effect a wide range of options, but even with limited budgets some options are still likely to be available above and beyond statutory and safety obligations.

Systems for highway maintenance need to support the wider framework of corporate and departmental policies and their relative allocation of priorities. These can be summarised as follows:

Strategic Level

- between corporate priorities and objectives
- between areas of the authority

Transport Level

- between Local Transport Plan (LTP) objectives and targets
- between Best Value Performance Indicators (BVPI) and targets
- between Public Service Agreement targets
- between maintenance, network management and other local transport services

Maintenance Level

- between the core objectives (customer service, safety, serviceability and sustainability)
- between maintenance service type
- between maintenance service category
- review against transport and strategic level priorities.

The establishment of priorities is an iterative process working down through the strategic, transport and maintenance levels and then reviewing upwards and repeating until a satisfactory Best Value outcome is reached.

However, this Maintenance Plan will concentrate on the maintenance level programmes and priorities as the strategic level and transport level are beyond the scope of this document.

11.2 PUBLIC ENGAGEMENT

As the main purpose of highway maintenance is to maintain the highway network for the safe and convenient movement of people and goods, engagement with the community to discover their views and priorities and to take account of them in the decision making process is clearly a fundamental principle of delivering Best Value.

Although statutory consultations on Best Value and comprehensive consultations on the Local Transport Plan have been undertaken, no specific consultations on highway maintenance have so far been carried out other than those introduced in the inaugural Citizen's Panel Questionnaire in March 2004.

Consequently, a comprehensive consultation exercise with North Yorkshire residents in respect of highway maintenance is programmed for 2005, the results of which may influence priorities in the budget making process for 2006/07.

Although the consultation details have not been finalised at the time of writing, it is anticipated that views will be sought on the following issues:

relative importance of various aspects of maintenance

- amount of winter gritting and salting
- maintenance of street lights
- planning of road works to minimise disruption
- general condition of road surfaces in towns
- general condition of road surfaces in rural areas
- general condition of footways/pavements
- grass cutting on rural road verges
- condition of road signs
- maintenance of road drainage

satisfaction levels of various aspects of maintenance

- amount of winter gritting and salting
- maintenance of street lights
- planning of road works to minimise disruption
- general condition of road surfaces in towns
- general condition of road surfaces in rural areas
- general condition of footways/pavements
- grass cutting on rural road verges
- condition of road markings
- condition of road signs
- maintenance of road drainage

changes in condition over the last five years

- roads in towns
- roads in rural areas
- footways and pavements

future investment preferences

- carriageways
- footways/pavements.

11.3 STATUTORY PRIORITIES

The highest priority for any highway maintenance activity is the compliance with minimum statutory duties and safety obligations. Statutory duties are defined under various enactments with particular emphasis in the Highways Act 1980.

In the main, the statutory obligations in regard to highway maintenance cover safety implications of risks to highway users and these are covered under the safety inspection regime in 6.2, risk assessments in 6.5, investigatory levels in 6.8 and Category 1 defects in 6.6.

The definition of minimum statutory duty is therefore covered under the risk management regime, and the costs of undertaking such works must take first call on the maintenance budget.

Works that conform to Category 2 defects as defined in 6.7, being all defects that are not classed as Category 1 defects, are still considered to be statutory obligations but they can be prioritised to take account of budgets and other priorities.

Although many highway works are implemented under highway powers rather than duties, the subsequent maintenance thereof becomes a duty. There are also duties under network serviceability and network sustainability but these can also be programmed and prioritised.

11.4 **BALANCING CORE NETWORK OBJECTIVES**

The establishment of priorities has to take account of the relative priorities of the core network objectives of:

- safety
- serviceability
- sustainability.

As discussed above, safety objectives relating to fulfilling minimum statutory duties is the highest priority and must be met. All remaining objectives can be programmed and prioritised with account being taken of:

- safety implications
- risk assessments
- corporate and departmental policies
- maintenance policies
- views of highway users and the public
- size of maintenance budget.

11.5 **BALANCING PRIORITIES BY TYPE**

The broad priorities for the respective types of highway maintenance will generally be determined by outcome of safety and service inspections and structural condition surveys assessed through the risk management regime, the Authority's policies and the views of the consumer.

As part of the budget making cycle, it is important to establish priorities and programmes for each of the maintenance types as follows:

- **reactive maintenance** – attending to Category 1 defects and other urgent safety matters arising from inspections or user information
- **routine maintenance** – providing defined standards of serviceability
- **programmed maintenance** – providing co-ordinated sustainable schemes and projects
- **regulation** – regulating occupation, interference or obstruction of the network
- **winter service** – providing defined standards of salting and clearance of ice and snow
- **weather and other emergencies** – planning for emergency response.

Of these types, priorities and programmes in respect of regulation, winter service and weather and other emergencies are largely determined by the level of specified service and therefore should not need any special consideration. However, the levels of service should take account of possible budgetary implications.

In regard to the remaining types of reactive, routine and programmed maintenance, a structured approach to programming and priorities is required. The budget setting cycle should take account of the relative priorities of these types, having regard to historical conditions, and seek to increase the proportion of programmed to reactive maintenance which should lead to a corresponding decrease in reactive maintenance in the longer term. The consideration of programming and priorities should take account of the following:

- reactive maintenance essentially comprises the rectification of Category 1 defects and other urgent safety matters in accordance with the specified standards of response, and the priorities for action and response will be determined exclusively by risk assessment.

The only other considerations are whether to sign and make safe, provide an initial temporary repair or provide an immediate permanent repair. The option selected will probably be determined either by operational practicalities or whether the site is subject to a programme of treatment in which case a temporary repair may be a more appropriate course of action.

- routine maintenance provides defined standards of network serviceability maximising availability, reliability, integrity and quality. Although programmes are linked to the defined standards, priorities will be largely determined from the outcome of service inspections, those issues arising from safety inspections not requiring urgent attention and user requests.

Priorities and programmes need to be determined for all types of routine maintenance and consideration given to combining both routine maintenance activities and other street related activities into a co-ordinated programme.

- programmed maintenance seeks to deliver a sustainable outcome with added community value and provides value for money through minimising whole life costs.

Priorities and programmes should be developed for carriageways, footways and cycleways in respect of the condition of the structure, the surface and the edge. Priorities will be determined from structural condition surveys incorporating both machine based surveys and visual inspection surveys. Where extensive traffic management measures are necessary for major maintenance schemes on higher category roads, consideration should be given to rescheduling other routine maintenance activities to take advantage of these measures and, if appropriate, taken into account in the planning and contract management process.

11.6 BALANCING PRIORITIES BY CATEGORY

Within each type of maintenance activity, the various categories need to be prioritised. For prioritisation, account should be taken of the Council's policies and standards,

structural surveys and visual inspections, user complaints and consumer consultation as appropriate.

The categories within the various maintenance activity types are as follows:

- **Reactive**
 - all elements – permanent repair of Category 1 defects identified by safety inspections detailed in 6.2 and prioritised by risk assessment
 - all elements – sign and make safe items that cannot be repaired immediately but otherwise would cause danger determined by risk assessment
 - all elements – initial temporary repair for safety purposes determined by risk assessment.
- **Routine**
 - carriageways, footways and cycleways – minor works and patching arising from safety and service inspections and determined through risk assessments
 - drainage systems and iron works – cleansing and repair determined by service standards and largely safety and service inspections
 - embankments and cuttings – stabilisation repairs identified mainly by service inspections
 - landscaped areas – grass cutting defined by service standards
 - trees and hedges – management of overhanging or overgrown, diseased or unstable items or those causing obstruction identified mainly through service inspections or user complaints
 - scavenging and sweeping – removal of debris or spillages through safety inspections or user reports
 - fences and safety barriers – minor repairs identified through service inspections
 - road markings and studs – replacement identified largely through safety inspections and service inspections in accordance with service standards
 - signs and bollards – cleansing, repair and replacement determined through service standards, safety and service inspections and user reports
 - network integrity – operational efficiency determined through service inspections.
- **Programmed**
 - carriageways, footways and cycleways – Resurfacing and Reconstruction (R & R) or surface treatment defined by service standards and prioritised by machine based or visual inspection surveys.
- **Regulatory**
 - licenses and permits – defined by service standards
 - management of utilities and other regulatory functions – defined by legislation.
- **Winter Service**
 - pre-treatment – salt storage, ice prediction system, forecasting service, grit bins and precautionary salting determined by service standards
 - post-treatment and snow clearance – determined largely by service standards with input from user reports.
- **Weather and other Emergencies**
 - flooding, high winds and high temperatures – remedial and safety measures largely determined by service standards with problems identified through the

National Severe Weather Warning Service, highway inspections and user reports.

- other emergencies – dealt with through the County Emergency Plan or the appropriate District(s) Emergency Plan(s) and led corporately.

11.7 VALUE MANAGEMENT AND ENGINEERING

A key principle of second LTPs is to provide ‘best value for money’ solutions and contribute towards local Government efficiency savings identified in the Gershon review. In order to ensure that the solutions to transport issues represent the best value for money solutions when measured against the LTP objectives, the Council have devised and adopted an Objective Based Scheme Prioritisation System. All schemes and initiatives identified through either the Area Transportation Strategies, on an ad hoc basis or when looking at strategic issues, will be prioritised for funding and implementation using the Objective Based Scheme Prioritisation System.

This system will assess the contribution of the scheme to all of the LTP Objectives including any detrimental effects. For example, the assessment of a Local Safety Scheme designed to address a local accident problem will also assess its benefits to local accessibility and any detrimental effects it may have on congestion and/or the environment.

12. SUSTAINABLE HIGHWAY MAINTENANCE

12.1 GENERAL

The UK sustainable development strategy is described in Securing the Future (DEFRA 2005) which includes priority areas for shared action as:

- sustainable consumption and production
- climate change and energy
- natural resource protection and environmental enhancement
- sustainable communities.

Well-maintained Roads identifies four core objectives for highway maintenance:

- Customer Service
- Network Safety
- Network Serviceability
- Network Sustainability

A Highway Maintenance Sustainable Development Policy has been developed based on the national strategy and local corporate policy. The Local Transport Plan 2 includes a vision ‘Better access and sustainable communities for all’ and its aims and objectives support the deliver of sustainable development.

12.2 LOCAL ECONOMY

Local materials, employment, skills utilisation and development will be sought where possible. The impact of works upon the vitality and viability of the local economy will be minimised, and where possible, enhanced.

12.3 COMMUNITY VALUE

The community will be kept informed of progress on major works.

An assessment of community needs will be completed.

The quality of public open space shall be considered.

The impact of construction upon the community will be minimised/avoided.

12.4 NOISE POLLUTION

Offices, depots and any construction should be located so as to minimise noise pollution. Noise pollution from traffic, both during and after construction, should be minimised/avoided.

12.5 AIR POLLUTION

Impacts from air pollution from traffic will not be increased and plant and machinery and construction related vehicles will be minimised/avoided.

12.6 WATER MANAGEMENT

Works will be undertaken in such a way as to minimise/avoid pollution of water courses. Storage of products will be located to ensure minimal risk to water courses. Sustainable drainage systems will be installed where appropriate and possible. Works will seek to reduce flood risk to (a) the transport infrastructure and (b) surrounding property.

12.7 VISUAL INTRUSION

Works and any development associated with the maintenance of the highway should ensure no detriment to the character and appearance of the surroundings and where possible should enhance.

12.8 MATERIALS UTILISATION

The materials hierarchy set out below will be used as a basis for forming decisions on materials use:

Minimise the need to use materials



Use/re-use materials already on site



Re-use materials from elsewhere
(giving consideration to transportation distance)



Use recycled materials
(giving consideration to transportation distance)



Use new materials

Consideration of whole life costs shall be integral to the decision.

12.9 WASTE MANAGEMENT

The waste hierarchy set out below will be used as a basis for forming decisions on materials use and disposal:

Reduce the amount of waste produced



Re-use waste produced on site



Re-use waste produced off site
(giving consideration to transportation distance)



Recycle waste materials

(giving consideration to transportation distance)



Send waste materials to landfill

12.10 ENERGY MANAGEMENT

The use of energy will be minimised in all construction works.

Sustainable energy sources will be sought for all schemes involving energy generation or using energy.

The wider energy implications of transport will be considered.

12.11 BIODIVERSITY

All identified biodiversity interests will be protected and conditions for biodiversity will be enhanced.

12.12 CHECKLIST AND ISO 14001

A checklist shall be applied to Highways North Yorkshire activities to ensure satisfactory client operation.

Maximisation of the environmental contribution made to highway maintenance has been achieved by Jacobs Consultancy and Balfour Beatty by the success of accreditation under an environmental management system to ISO 14001.

As an example, the Jacobs Consultancy system for design and construction of highway maintenance, includes the following environmental issues:

- Noise and Vibration
- Dust, Emissions and Odours
- Flora and Fauna
- Ground
- Water
- Material Use
- Waste
- Local Community
- Landscape
- Archaeology

13. PROCUREMENT AND SERVICE DELIVERY

13.1 RESPONSIBILITIES

Responsibility for highway maintenance in North Yorkshire is divided between DfT (Department for Transport), North Yorkshire County Council and the City of York unitary authority.

Service delivery for all other highway maintenance in North Yorkshire is the responsibility of the County Council. However, in accordance with S19 of the Local Government Act 2000, the County Council has a partnered arrangement with both Harrogate and Scarborough Borough Councils to discharge elements of the highway maintenance function for the urban area of their borough. They act as Agent Authorities to the County Council.

All matters of policy, funding and standards of performance are the sole responsibility of the County Council to specify and, with the exception of delegated duties covered by the

North Yorkshire Partnership arrangement; only the implementation of any activity is devolved to the Borough Council.

It is the statutory duty of the highway authority to maintain that part of the highway defined as being maintainable at public expense. This duty is presently consolidated in S41 of the Highways Act 1980. Under S56 of the Act, any person may apply to the courts for an order requiring the highway authority to take remedial action in cases of alleged non-repair by that authority that may also face an action for damages resulting from failure to maintain the highway.

S58 of the Act provides that in the event of an action it shall be a defence to show that the road was kept in a reasonable state of repair having regard to the traffic using it, the standard of maintenance appropriate to its use and public safety.

S150 of the Act requires the highway authority to clear obstructions from the highway resulting from the accumulation of snow or from the falling down of banks on the side of the highway, or from any other cause. The Railways and Transport Safety Act 2003 introduced an amendment to S41 of the Highways Act 1980 which appears to extend the requirement to undertake pre-salting of the network to also include footways. The revision requires the highway authority to take such measures, as are “reasonably practicable” within the resources available.

Road openings in the highway executed by or on behalf of statutory undertakers under the provisions of the New Roads and Street Works Act 1991 (NRSWA) are backfilled and maintained by the organisation making them. The role of the highway authority is mainly that of co-ordinating and controlling road works and designating traffic sensitive routes and structures of special engineering difficulty.

Although the Streetworks Register is operated and maintained at County Hall there is a co-ordination and inspection role fulfilled by the operational Divisions and Agent Boroughs who are responsible for undertaking the duties under the Act in accordance with policies and standards set centrally.

There is a wide range of other legislation affecting highway maintenance, either directly or indirectly, imposing powers or duties on highway authorities.

13.2 PARTNERING ARRANGEMENTS

The principles of the current partnering arrangements for the management of the highway service in North Yorkshire were approved by the County Highways and Transportation Committee on 1st April 1974.

The current agency agreements in place since 1st April 1974 will be reviewed during 2006/07 so that they better reflect an outcomes focused service based upon the principles of Best Value.

The key principles of the overall strategy will be:

- trusting long term relationships
- responsive and effective service delivery managed locally.

The protocol for partnering arrangements for the management of the highway service will comprise:

Roles and Responsibilities

- County Members
- Borough/District Members
- Area Committees
- Officer Roles

Delivery of Works

- Engineering Consultancy
- Partnered Works Contracts
- Separate Contracts
- District Contracts

Detailed Arrangements

- General
- All Districts
- Agency Districts
- Responsibilities of Agency Districts
- Working Arrangements

Payment for the Management of the Highway Service

- General
- Fees
- Staffing

Monitoring and Review

Specification of the Service

- Highway Maintenance
- Enforcement and Statutory Duties
- Public Rights of Way
- Public Lighting
- Structures – Minor Maintenance
- Development Control
- Estate Roads
- Private Street Works
- Traffic Management and Minor Integrated Transport Schemes
- Road User Education and Training
- Public Contacts
- Highway Records and Land Charges
- Acquisition of Goods and Services
- Financial Management.

13.3 PROCUREMENT STRATEGY

A procurement strategy in respect of securing best value should take into account the implementation guide 'Rethinking Construction' which reflects the recommendations of the Egan Report in 1998 assessing the efficiency of the UK construction industry.

The model chosen for the directly managed areas is that of most highway maintenance works contracted out and most professional services contracted out under separately contracted arrangements without use of the private finance initiative.

In April 1999, the highway engineering consultancy, land and property and geotechnical and material testing services were externalised to Mouchel Parkman. An innovative partnered works contract was awarded in April 2002 to Raynesway Construction Southern for highway maintenance.

The model adopted by Harrogate Borough Council is that of all basic highway maintenance works contracted out to Ringway Highway Services Northern with professional services all in-house. Resurfacing and reconstruction contracts are let using a select list approach.

Scarborough Borough Council has adopted an in-house street management model with market testing in combination with competitive tender arrangements for specialist work. Professional services are provided in-house.

13.4 CLIENT MANAGEMENT

The main roles of the client are:

- to advise the County Council in respect of all matters concerning highway maintenance
- to represent the County Council on highway maintenance issues
- to manage appropriate County Council budgets and programmes
- to manage all highway maintenance contracts to effect service delivery.

The client comprises the County Council as the principal and some Borough/District Councils as agent authorities who are able to carry out the maintenance function for part of their Borough/District.

Of the seven Borough or District Councils within the County Council's area of responsibility for highways, those who have agency agreements and those that are directly maintained by the County Council are shown as follows:

Agent Districts

Harrogate (Urban area only)

Scarborough (Urban area only)

Directly Maintained Districts

Hambleton

Ryedale

Craven

Richmondshire

Selby

Harrogate (non-urban area)

Scarborough (non-urban area)

Insofar as overall management is concerned, there will be monthly (or such other frequency as agreed) liaison meetings chaired by the Head of Highway Operations Highways North Yorkshire, or his representative, and attended by Agent Districts, Area Managers, Finance Manager and an BBISL representative.

13.5 ENGINEERING CONSULTANCY (Directly Maintained Areas)

An Engineering Consultancy service is currently provided by the private sector consultant, Jacobs Consultancy. This partnering agreement is due to be terminated and replaced with a new partnership from 1st October 2006.

The Engineering Consultancy provides design services defined as follows:

Design Services – include the work necessary to provide support for individual schemes forming part of network management programmes of work.

The actual services included are:

- technical audit
- transportation studies
- structures inspection, assessment and strengthening
- other services.

The Engineering Consultancy contract is therefore wide ranging with some functions linked directly to highway maintenance and others with an indirect linkage. The performance of the contractor is assessed using the framework of performance assessment. Contract management arrangements include liaison meetings, progress reports, budgetary control and annual reviews of the service specification and operation.

13.6 PARTNERED WORKS CONTRACT (Directly Maintained Areas)

In regard to service delivery of highway maintenance works, the County Council has a partnership contract to procure all works up to £300,000 in value for highway works with contractor Balfour Beatty.

Works in excess of £300,000 in value are subject to individual tenders. Traffic signal maintenance is dealt with under a separate term contract.

The services covered under this contract includes:

- Basic Maintenance
- New Traffic Signs
- Maintenance of Traffic Signs
- Gully Emptying
- Grass Cutting
- Resurfacing and Reconstruction (Non-Principal Roads)
- Resurfacing and Reconstruction (Principal Roads)
- Flood Damage Repair Works
- Road Lighting (Works)
- Road Lighting (Energy)
- Surface Dressing (Non-Principal Roads)
- Surface Dressing (Principal Roads)
- Winter Service
- Winter Service (Contingency)
- Traffic Regulation Orders
- Emergency Sweeping
- Public Rights of Way Maintenance
- Bridge Maintenance

- Horticultural Maintenance
- Maintenance of Green Lanes
- Rechargeable Works

13.7 PARTNERING

Considerable effort has been expended by Highways North Yorkshire, Jacobs Consultancy and Balfour Beatty to foster closer forms of partnership.

These arrangements are based on:

- Commitment to shared culture, values and trust
- Joint management structures
- Open book accounting and financial systems integration
- Shared management systems (environmental management)
- Performance management regime
- Agreed system for shared risk and reward

13.8 INTER-AUTHORITY COLLABORATION

Joint arrangements with neighbouring local authorities are actively encouraged with the following examples:

- Shared Contract documentation and processes (i.e. Weather Forecast contract jointly with City of York)
- Joint contracts with consultants and contractors (i.e. Transport Asset Management Plan and Asset Valuation development with NE England and Yorkshire and Humberside local authorities.)

13.9 HARROGATE BOROUGH COUNCIL AGENCY

Harrogate Borough Council delivers highway maintenance with an in-house client/consultant and the contractor function out-sourced. Construction of basic maintenance is carried out under contract with Ringway Highway Services Northern. Structural maintenance works (Reconstruction and Resurfacing) is procured by competition via a select list of contractors.

13.10 SCARBOROUGH BOROUGH COUNCIL AGENCY

Scarborough Borough Council delivers highway maintenance by means of a fully integrated client/consultant and contractor regime with emphasis on Street Management and multi-skilled local delivery. A schedule of rates is utilised for construction work as determined by the former Works and Highways DLO. Best Value has been addressed by comparison by means of benchmarking practice.

Additional and specialist work is procured by competitive tender. It is envisaged that four-year framework contracts will replace this procurement method after April 2006.

14. FINANCIAL MANAGEMENT

14.1 SOURCES OF FUNDING

Available funding is determined on an annual basis primarily through the Local Transport Plan Settlement and Relative Need Formula (RNF) as approved by Members. It comprises both revenue and capital sources of funding allocated into basic maintenance and Resurfacing and Reconstruction (R & R) and defined as follows:

- **Basic Maintenance** comprises smaller scale highway maintenance works. This category includes basic maintenance and winter service together with safety and

environmental maintenance works which are not subject to cost criteria. Basic Maintenance works are funded from the revenue allocation although Agency Districts can supplement this from the funds allocated for local determination.

- **Resurfacing and Reconstruction (R & R)** comprises larger scale structural maintenance works in respect of reconstruction, overlay or resurfacing of both carriageways and footways where a specific need has been identified, works can be planned and the estimated cost of the necessary works separately quantified.
- For the purposes of monitoring expenditure and performance, **Resurfacing and Reconstruction (R & R)** also includes surface treatments as a separate category. Surface treatments are non-structural treatments including surface dressings, slurry sealing, high friction surfacing, resin bonded surfacing, other bituminous bonded surfacing and re-texturing. Sites where preparatory work such as patching and haunching account for more than 60% of the total cost should be classified as Resurfacing and Reconstruction (R & R) reconstruction schemes.
- **Resurfacing and Reconstruction (R & R)** schemes will be financed from either revenue or capital funds depending on the availability of funding. For schemes in Agency Districts, the County Council will notify the District of the appropriate funding source. Agency Districts can supplement carriageway Resurfacing and Reconstruction (R & R) schemes from the funds allocated for local determination.

Each financial year, budget allocations will be made on the following basis:

- **Basic Maintenance (revenue)**
 1. cyclic maintenance on the size of the asset, the standard frequencies and the determined unit rate
 2. other basic maintenance on the relationship derived from the total network size, the size of the urban network and the historic allocation for this work.
- **Resurfacing and Reconstruction (R & R) (capital)**
 1. on need basis following condition assessment, standard estimating items and unit rates
 2. scheme prioritisation on a common basis countywide
 3. any schemes selected to be funded from capital funds, either from the County Council or DfT
 4. any County Council identified schemes
 5. schemes not identified by the ranking procedure considered for inclusion in the programme by the Area Manager and the Highway Asset Manager.

The highway budget groupings that comprise the budget allocations are:

BASIC MAINTENANCE

Basic Maintenance

- Patching and Minor Repairs
- Drainage
- Footways and Cycle Tracks
- Fencing and Barriers etc
- Remedial Earthworks

Environmental

Verge Maintenance
Scavenging

Safety

Drainage cleaning/cleansing
Non-Illuminated Signs and Bollards (includes cleaning of illuminated signs and replacement of sign faces on externally lit illuminated signs)
Other Road Markings

Winter Service

Precautionary Salting and Snow Clearance

RESURFACING AND RECONSTRUCTION

Carriageways

Reconstruction
Overlay
Resurfacing
Surface Treatments

Footways

Footways and Cycle Tracks (includes surface treatments to footways and cycle tracks)

Drainage

Fencing and Barriers etc
Remedial Earthworks

14.2 FINANCIAL PROCEDURES

The financial procedures to be adopted by the Agent Districts are more particularly set out in partnering arrangements for the management of the Highway Service in North Yorkshire.

The Statement of Procedures sets out the requirements of the County Council with regard to financial management and control in respect of those matters for which Agency Districts have delegated responsibility.

These Procedures incorporate the following matters:

- financial responsibilities
- allocation of revenue funds for highway maintenance and virement of funds
- placing orders for works
- maintenance expenditure (revenue)
- management and support services
- rechargeable works – reinstatements, vehicular crossings and accident damage
- payment to districts
- advance payment code
- private street works
- S38 adoptions of estate roads – inspection fee
- collection of inspection fee from developers under S106 and S278 and other such agreements
- temporary road closures
- on-street car parking

- locally determined funds
- minor integrated transport schemes
- potential bad debts
- charges for licences and permissions
- claims made against the County Council/Agency Districts
- highways records and land charges
- New Roads and Street Works Act 1991

All the requisite finance and administration forms are incorporated as appendices to the Statement of Procedures.

14.3 ACCOUNTING PRINCIPLES

Accounting principles for highway maintenance should be in accordance with CIPFA requirements with particular reference to:

- CIPFA Code of Practice on Accounting for Capital 1994
- CIPFA Statement of Recommended Practice on Accounting for Capital 2000 which supplements the 1994 Code.

The CIPFA 2000 document provides the following relevant advice in respect of highway maintenance:

- expenditure that should be capitalised includes acquisition, construction, enhancement or replacement of roads, buildings or other structures
- in this context, enhancement means carrying out works which are intended to lengthen substantially the useful life of the asset, increase substantially the open market value of the asset or increase substantially the extent to which the asset can or will be used for the purposes of or in conjunction with the functions of the authority
- under this definition improvement works and structural repairs should be capitalised, whereas expenditure to ensure that the fixed asset maintains its previously assessed standard of performance should be recognised in the revenue account as it is incurred. Unless expenditure meets these criteria to be capitalised, it should be treated as revenue.

14.4 FINANCIAL CONTROL

Business & Environmental Services and/or Financial Services ensure each general maintenance function and each individual job of highway improvement or maintenance should be carried out to a required specification and agreed timescale and within the approved budget allocation unless otherwise agreed with the Area Manager.

Moreover, under the terms of the partnering arrangements the following criteria should be fulfilled:

- accountancy practices as described in 14.3 above to be followed
- highway expenditure to be monitored on a monthly basis and any possible overspends identified and reported to the Area Manager at the next liaison meeting
- monthly progress reports to be provided to the Area Manager incorporating actual plus committed expenditure compared with estimated expenditure
- procedures in the 'Interim Financial Procedures for Partnered Works Contracts' to be followed
- adoption of further regulations or procedures as determined by the Director of Business & Environmental Services and/or the Director of Financial Services to ensure adherence to County Council policies.

Requirements and directions for estimates, allocations, virements, works orders, carryovers and payments are incorporated in partnering arrangements for the management of the highway service in North Yorkshire.

15 MONITORING REVIEW AND REPORTING

15.1 GENERAL

Regular and structured monitoring is a key requirement of continuous improvement. The following reasons are identified to emphasize the importance of monitoring:

- Character and use of network
- Legal responsibility
- Policy and performance improvement via Comprehensive Performance Improvement, Best Value Performance Plans and Local Transport Plan
- Developments in condition assessment
- Technical research on materials and treatments
- New forms of partnership with performance monitoring

15.2 CATEGORIES OF REVIEW

Reviews are carried out under the following categories:

- Continuous monitoring
- Programmed reviews
- Best Value reviews
- Ad-hoc reviews

The Traffic Management Act 2004 requires continuous monitoring to fulfil safety and operational purposes.

Programmed reviews focus on monitoring trends in relation to the network and cover a wide range of parameters.

Best Value reviews provide a periodic in-depth analysis of all aspects of the service.

15.3 SHARED BEST PRACTICE

Ongoing monitoring and benchmarking information is shared by membership of benchmarking clubs.

15.4 MONITORING AND REVIEW OF CODE OF PRACTICE

Research and monitoring of the service is utilized to feedback into improvements to highway maintenance practice.

GLOSSARY OF TERMS

ABBREVIATIONS

AADT	Annual average daily total
BBISL	Balfour Beatty Infrastructure Services Limited
BVPI	Best Value Performance Indicator
CI	Condition Index
CPA	Comprehensive Performance Assessment
CSC	Characteristic Scrim Coefficient
CSS	County Surveyors Society
CV	Commercial vehicles
CVI	Coarse Visual Inspection
DEFRA	Department for Food and Rural Affairs
DfT	Department for Transport
DLO	Direct Labour Organisation
DMRB	Design Manual for Roads and Bridges
DVI	Detailed Visual Inspection
GPRS	Ground Penetrating Radar Survey
HA	Highways Agency
HCV	Heavy Commercial Vehicle
IAN	Interim Advice Note
IHT	Institution of Highways and Transportation
IL	Investigatory Level
ISO	International Standards Organisation
LTP(2)	Local Transport Plan (1 or 2)
NRSWA	New Roads and Street Works Act
OSCAR	Ordnance Survey Carriageway Centre Line
PSV	Polished Stone Value
RCS	Raynesway Construction Southern
RIS 3	Risk Management Protocol Version 3
RP	Rules and Parameters
R&R	Resurfacing and Reconstruction
SCANNER	Surface Condition Assessment for the National Network
SCRIM	Sideways force Coefficient Routine Investigation Machine
SHW	Specification for Highway Works
TAMP	Transport Asset Management Plan
TTS	TRACS Type Survey (see SCANNER)
VMS	Variable Message Sign
UK	United Kingdom
UKPMS	United Kingdom Pavement Management System