PETERBOROUGH CITY COUNCIL

Peterborough City Council

Highway Maintenance Plan 2011-16

CONTENTS

APPENDICIES

Figure 1 North Street before Resurfacing

Figure 2 North Street during Resurfacing

Figure 3 North Street after Resurfacing

INTRODUCTION

Everyone who lives in or travels through Peterborough will use the highway network, many on a daily basis. Those individuals will therefore have a very clear view on how the network meets their needs, whether this is in its design or how it is maintained. This will also have a significant impact on their view of Peterborough City Council who is responsible for the maintenance of the majority of the highway network within the Peterborough area.

The Highway Maintenance Plan details the aims and objectives of the Highway Asset Group. These provide the necessary links to the Peterborough City Council's Sustainable Community Strategy, Local Transport Plan (LTP) and Transport Asset Management Plan (TAMP). This establishes a consistency between community aspirations and how the highway maintenance service is delivered, within financial constraints.

The highway network represents an authority's most valuable asset. The value of this asset can be identified by more than just the actual cost of its physical replacement. There is value associated with serving the community's need to travel (be this on foot, by bicycle, by public transport or by car) or by allowing the easy distribution of goods for commerce or industry.

In common with other services provided by the Council, highway maintenance is carried out against a backdrop of increased expectations and limited resources. It is therefore essential that the use of all available resources is carefully considered and directed to maximum effect. The Highway Maintenance Plan promotes good practice and best value so as to deliver effective highway maintenance within the Peterborough area.

As local highway authority, Peterborough City Council has an absolute duty under the Highways Act 1980 to *"maintain the highway network in a safe condition for all highway users".* Failure to comply with this duty could result in the death or injury of highway users, which may lead to both criminal and civil action being taken against the Council. The intent of the Highway Maintenance Plan is to minimise the risk of any such injury or loss occurring within the constraints that the service operates under.

The Highway Maintenance Plan is intended to provide a reference to Councillors, officers and all those with an interest in how Peterborough's highway network maintenance is managed and effected.

Figure 4 Malborne Way prior to Resurfacing

Figure 5 Malborne Way after Resurfacing

The Highway Maintenance Plan's Objectives:

- To ensure that Peterborough City Council meets its statutory obligations as local highway authority under the Highways Act 1980.
- To ensure that the provision of highway maintenance duly accords with Peterborough City Council's Sustainable Community Strategy, Local Transport Plan and Transport Asset Management Plan aims.
- To improve the general understanding of how highway maintenance is carried out within the Peterborough area.
- To involve all those that have an interest in how the highway network is maintained in the Peterborough area.
- To develop effective policies for the maintenance of the entire highway network within the Peterborough area based on good practice, updating these as and when necessary.
- To maximise the benefit of any investment made in maintaining the highway network for all highway users and so promote Best Value in the provision of highway maintenance.
- To seek improved means of procuring work and services.
- To improve the condition of the highway network wherever possible.

It seeks to meet the above objectives by:

- Considering the current condition of the highway by using survey data and analysing and commenting on the information gained.
- Identifying factors that are both currently and are anticipated to affect how the highway network will be maintained.
- Reviewing the performance of Peterborough City Council in effectively maintaining the highway network in its area, so providing best value to all highway users in the Peterborough area.
- Reviewing how the highway network is currently being maintained both in terms of policy and methodology.
- Providing targets for the future maintenance of the highway network within the Peterborough area.
- Identifying the resources allocated to the maintenance of the highway network.
- Utilising the duties and powers that Peterborough City Council has in maintaining the highway network.
- Relating how Peterborough City Council maintains its highway network to the guidance given in *"Well-maintained Highways" The Code of Practice for in Highways Maintenance Management* and the City Council's own Transport Asset Management Plan (2010) identifying shortfalls and taking measures to address these.

Figure 6 Footway in Church Street, Werrington before Maintenance

This scheme was part of the ongoing Slab Replacement Programme

Figure 7 Footway in Church Street, Werrington after Maintenance

SECTION 1: HIGHWAY MAINTENANCE STRATEGY

Context

Peterborough is an area of contrasts. It is a long established city with a cathedral dating back to pre-Norman times and areas have developed naturally around this. However, Peterborough was designated a 'New Town' in 1968 and the Peterborough Development Corporation was established to double the size of the population in close partnership with Peterborough City Council.

The Corporation devised a master plan that would concentrate the new development in four new residential townships. The last of these townships (Hampton) is currently being constructed to the south of the city and will consist of 5,000 houses and space for industrial and commercial development.

In April 1998, Peterborough City Council achieved Unitary Status and became responsible for the wider Peterborough area including many rural village areas, sharing boundaries to the north with Lincolnshire, to the east and south with Cambridgeshire and to the west with Northamptonshire.

The current population of Peterborough is 168,800, split between the Peterborough Urban area of 149,090 and the surrounding villages and rural area of 19,710 and that this will grow with the continued development in the Hampton Township, Greater Haddon and Stanground South development areas.

The highway network within the Peterborough area has developed to serve the needs of the growing community and throughout its history. When the expansion of a community is slow, so is the increase in highway infrastructure. However, the rapid expansion linked to 'New Town Status' meant the extensive construction of new sections of highway network. Peterborough, in common with other 'New Town' areas, now needs to consider how to react to large areas of the highway network concurrently reaching the end of their useful life. This problem is not experienced where expansion of the community proceeds at a slower, more natural pace.

Figure 8 Longthorpe Parkway

SECTION 1: HIGHWAY MAINTENANCE STRATEGY (Cont'd)

Aims and Objectives

Peterborough City Council's Vision is for a:

- A bigger and better Peterborough, that grows the right way, and through truly sustainable development and growth;
- Improves the quality of life of all its people and communities, and ensures that all communities benefit from growth and the opportunities it brings;
- Creates a truly sustainable Peterborough, the urban centre of a thriving sub-regional community of villages and market towns, a healthy, safe and exciting place to live, work and visit, famous as the environment capital of the UK.

The Council's Sustainable Community Strategy outlines the council's commitment to improve services and promote the economic, environmental and social well-being of the area. The four priorities identified within the strategy are to:

- Creating opportunities – tackling inequalities
- Creating strong and supportive communities
- Creating the UK's environment capital
- Delivering substantial and truly sustainable growth.

All of the above aims are underpinned by corporate objectives.

The Council, through its Performance Management Framework, ensures that all services identify how they contribute to the achievement of the corporate aims and objectives. Every service area generates its own service plan that directly links service objectives to corporate objectives and, thereby, to the implementation of the Sustainable Community Strategy. Service objectives are set and monitored on a frequent basis and many correspond with National Indicators, reported on as part of the Framework monitoring process.

The Highway Maintenance Strategy must have regard to the aims and objectives of the Corporate Performance Plan (which, in turn, links to the Sustainable Community Strategy). By doing so, it seeks to share the "vision" for Peterborough and maximise the Highway Maintenance Service's contribution to meeting the objectives.

It seeks to do this by clearly identifying the aims and objectives of highway maintenance in Peterborough. The Strategy also combines with other Council policies and plans (especially the LTP and TAMP) with the aim of maximising the benefits to the community by improving co-operation between the Highway Asset Management Group and other services provided by the Council and other external stakeholders.

SECTION 1: HIGHWAY MAINTENANCE STRATEGY (Cont'd)

The Strategy recognises that the highway network is the authority's largest and most valuable asset (although many may not perceive it as such). As part of the Council's Performance Management Framework, the Highway Maintenance Strategy Plan identifies the aim "to maintain the Authority's most valuable asset both efficiently and professionally whilst providing an accessible and responsive service to the population of the Peterborough area". The following broad aims were identified (and hold true to this Strategy):

- Provide effective routine maintenance of the highway network
- Provide effective planned maintenance of the highway network
- Provide a rational and reliable Winter Maintenance Service
- Establish a regular inspection regime for highways

These and other service Corporate Objectives that relate to the Highway Maintenance Service:

Creating opportunities – tackling inequalities	**Improving health** – so that everyone can enjoy a life expectancy of the national average or above and benefit from speedier access to high quality local health and social care services.
	Supporting vulnerable people - so that everyone can access support and care locally to enable them to maintain independence, should they be affected by disadvantage or disability at any point in their lives.
	Regenerating neighbourhoods – so that the most deprived communities can achieve their full potential and therefore contribute to and benefit from sustainable economic growth in the Peterborough area.
	Improving skills and education – so that the people of Peterborough have better skills and benefit from high quality education from cradle to grave, including through the new university.
Creating strong and supportive communities	**Empowering local communities** – so that all communities and individuals are engaged and empowered, and take their opportunities to shape the future of Peterborough.
	Making Peterborough safer – so that people of all ages and abilities can live, work and play in a prosperous and successful Peterborough without undue fear of crime.
	Building community cohesion – so that new communities are integrated into Peterborough and welcomed for the contribution they bring to our city and rural areas.
	Building pride in Peterborough – so that we recognise, celebrate and take pride in Peterborough's achievements, its diverse but shared culture ad the exciting opportunities for leisure and relaxation.
Creating the UK's environment capital	**Making Peterborough cleaner and greener** – so that we become the UK's greenest city with attractive neighbourhoods, surrounded by beautiful countryside and thriving biodiversity.
	Conserving natural resources – so that we reduce Peterborough's overall consumption of the Earth's natural resources.
	Growing our environmental business sector – so Peterborough is the natural location for green businesses.
	Increasing use of sustainable transport – so that Peterborough has the highest proportion of citizens using sustainable transport modes in the UK.

SECTION 1: HIGHWAY MAINTENANCE STRATEGY (Cont'd)

Delivering substantial and truly sustainable growth	**Creating a safe, vibrant city centre and sustainable neighbourhood centres** – so that people have more diverse and improved places to visit and enjoy.
	Increasing economic prosperity – so that the people of Peterborough can work locally, benefiting from a strong local economy that is an attractive destination for business investment, particularly in higher skilled sectors.
	Building the sustainable infrastructure of the future – so that we create the conditions for business, service and community prosperity and growth.
	Creating better places to live – so that we provide better places to live for both new and existing communities, ensuring the highest environmental standards of new building.

Delivering these outcomes cannot be achieved by the Council alone, which is why partnership working is so important to realising the Sustainable Community Strategy's ambition. We will continue to build on our successes with the Police, the Primary Care Trust, and many other key partners to make this ambition a reality for the City and its community.

Figure 6 Resurfacing of Broadway 2009

SECTION 1: HIGHWAY MAINTENANCE STRATEGY (Cont'd)

Scope of Highway Maintenance

Highway maintenance is a wide ranging service which includes the following activities:

- **Reactive maintenance** responding to inspections, complaints or emergencies
- **Routine maintenance** providing works or services to a regular consistent schedule generally for patching, repainting of faded road markings, investigating problems with highways drainage, and barrier and fencing repairs following an accident
- **Programmed maintenance** providing larger schemes, primarily resurfacing, surface treatments or reconstruction of carriageways or footways to a planned schedule
- **Regulatory maintenance** inspecting, regulating and enforcement activities of others, much of this work will be undertaken by the Traffic Manager and their team, under the statutory duty for network management
- **Winter Service** providing salting and clearance of snow and ice
- **Emergency Response** providing a planned emergency response for adverse weather conditions and other emergencies.

Related activities

There are a number of related functions which are not specifically dealt with in detail in this strategy, but which on occasion affect or be affected by highway maintenance activity. They also have the potential for value to be added on Peterborough through joint working, co-operation and co-ordination. These include:

- Asset Management
- Network management, including utility company activity
- Highway development control
- Highway Engineering Improvements
- Street cleansing
- Public transport providers
- Town centre management, including use of public space
- Maintenance of surface water drainage systems
- Environmental management including trees, verges and soft landscaping.

In Peterborough through regular co-ordination meetings and the positive reinforcement of collaborative and partnership working all activities on the highway are carefully planned and programmed to maximise value for money and minimise disruption to road users.

Figure 7 Manor House Street before Resurfacing

Figure 8 Manor Street after Resurfacing, kerb and drainage improvements

SECTION 2: PETERBOROUGH'S HIGHWAY NETWORK

The highway network within the Peterborough area has developed along with the community of Peterborough over many years. This has led to an extensive and varied network that contains roads that were designed to the national standards of their time. The network includes the Parkway system (now some 30 years old), old urban residential streets, rural lanes (whose construction is largely minimal) and newer roads such as those at Hampton.

Over time, responsibility for the maintenance of the network has changed on several occasions, as have the design standards of most roads. Equally, the use of a section of highway may vary through new local development or changes to strategic routes, thereby affecting the nature and volume of traffic using it.

In order for the authority to be able to properly manage the highway network, it is important that it has accurate information of the extent and condition of relative asset elements. This information should contain the following:

- Name
- Location
- Size
- Classification/ Hierarchy
- Status
- Present condition
- Anticipated remaining life
- Value

The above applies to all features contained within the adopted highway such as:

- Carriageway
- Footway / cycleway
- Verge
- Structures
- Highway drainage
- Signs
- Street lighting
- Trees

Without the above information, a full and clear picture of the authority's liabilities cannot be gained. The Highway Asset Management Group is therefore currently improving the level of information it holds through processes such as the Asset Inventory database / DVD survey and the various types of highway condition surveys being undertaken. This awareness of the network (and the issues relating to it) will enable a more effective approach towards achieving "asset maintenance management", a developing requirement of highway authorities. Such asset management approaches allow for better direction of resources to areas of need.

Carriageway Hierarchy

The roads within Peterborough, as nationally, are broken down into basic classifications, these being motorway, A (trunk), A (principal), B, C and unclassified. The Highways Agency are responsible for the maintenance of motorways such the A1(M) and trunk roads such as the A1, A47(T) (east of the A1) and their maintenance is carried out by their supply chain partners. Peterborough City Council is responsible for the entire remaining adopted highway network including the principal A, B, C and unclassified roads.

SECTION 2: PETERBOROUGH'S HIGHWAY NETWORK (Cont'd)

However these classifications are historical and do not reflect the actual usage of the network. Therefore, the council has adopted a hierarchy based approach to asset management, where each route usage has been examined using criteria / guidance given in the "Well Maintained Highways" Code of Practice for Highways Maintenance Management (July 2005) and categorised as described in Table 1 below.

All of the roads mentioned so far are adopted public highways – i.e. maintained at public expense. There are other roads in the Peterborough area that, although not adopted, may still be public rights of way. In these instances, the maintenance responsibility usually rests with the road frontagers.

Peterborough City Council's adopted highway network is broken down as follows:

Table 1 – Physical Parameters of Peterborough's Carriageways by Classification

Length by Classification km's	
A Roads	73.2
B Roads	54.2
C Roads	156.3
U Roads	598.6
Back Lanes (V)	0.7 *
Total	**882.3**

*Not included in hierarchy

Table 2 – Physical Parameters of Peterborough's Carriageways by Hierarchy

Length by Hierarchy km's	
Strategic (Cat 2)	87.752
Main Distributor (Cat 3a)	54.204
Secondary Distributor (Cat 3b)	118.644
Link Road (Cat 4a)	86.469
Local Access Road (Cat 4b)	534.947
Total	**882.016**

SECTION 2: PETERBOROUGH'S HIGHWAY NETWORK (Cont'd)

Table 3 – Physical Parameters of Peterborough's Footway and Cycleway Network by Classification

Length / Area by Classification	
Footway length (A Roads)	40.3 km's
Footway area (A Roads)	94,124 sq m
% Slab / Modular	8.4%
Footway length (B Roads)	27.27 km's
Footway area (B Roads)	48,910 sq m
% Slab / Modular	0.0004%
Footway length (C Roads)	65.37 km's
Footway area (C Roads)	129,484 sq m
% Slab / Modular	9.9%
Footway length (U Roads)	584.69 km's
Footway area (U Roads)	1,175,880 sq m
% Slab / Modular	13.36%
Primary Footway & Cycleway Network length	162.26 km's
Independent Footways length	276.82 km's
Total (km's)	1,156.71 km's

Table 4 – Physical Parameters of Peterborough's Footway and Cycleway Network by Hierarchy

Length by Hierarchy km's	
Prestige Walking Zones (Cat 1(a))	2.392
Primary Walking Routes (Cat 1)	5.132
Secondary Walking Routes (Cat 2)	5.702
Link Footways Routes (Cat 3)	Full Footway hierarchy not completed
Local Access Footways Routes (Cat 4)	Full Footway hierarchy not completed

The new A605 Stanground bypass and A1073 Crowland Rd should be adopted during the life of this plan and this will result in a length of approximately 8.5 kms (not included above) becoming a principal road, maintained by Peterborough City Council, both of these may be expected to fall into the Strategic route category.

It is also anticipated that 3 approximately km of unclassified carriageway will be adopted each year from new development current taking place within Peterborough. It is anticipated that such adoptions (e.g. new highway in Hampton) will continue at a similar rate over the next three-year period.

SECTION 2: PETERBOROUGH'S HIGHWAY NETWORK (Cont'd)

Carriageway Hierarchy

Category	Hierarchy Description	Type of Road General Description	Detailed Description
1	Motorway	Limited access, motorway regulations apply	Routes for fast moving long distance traffic. Fully grade separated and restrictions on use
2	Strategic Route	Trunk roads 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-medium distance traffic	Routes between Strategic Routes and linking urban centres 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	Classified road (B and C class) and unclassified urban bus routes carrying local traffic with frontage access and frequent junctions	In rural areas these roads link the larger villages and heavy goods vehicle (HGV) generators to the Strategic and Main Distributor Network. In built-up areas, these roads have 30 mph speed limits and very high levels of pedestrian activity with some crossing facilities including zebra crossings. On street parking is generally unrestricted, apart for safety reasons
4a	Link Road	Roads linking the Main Distributor network to the Secondary Distributor network with frontage access and frequent junctions	In rural areas these roads link the smaller villages to the distributor roads. They vary in width and are not always capable of carrying two-way traffic. In urban areas, they are residential or industrial inter-connecting roads with 30 mph 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 often only single lane width and unsuitable for HGVs. In urban areas they are often residential loop roads or culs-de-sacs.

SECTION 2: PETERBOROUGH'S HIGHWAY NETWORK (Cont'd)

Footways and Cycleways

The Code of Practice for Highway Maintenance Management (July 2005) advises that the footway and cycleway networks should be broken down into alternative classifications that relate more to what use a particular section of the network is put to. This classification impacts directly on how a particular section of a network should be maintained and are identified in the Code as follows:

Footway Hierarchy

Category	Name	Description
1(a)	Prestige Walking zones	Very busy areas of towns and cities with high public space and street scene contribution.
1	Primary Walking Routes	Busy urban shopping and business areas and main pedestrian routes.
2	Secondary walking Routes	Medium usage routes through local areas feeding into primary routes, local shopping centres etc.
3	Link Footways	Linking local access footways through urban areas and busy rural footways.
4	Local Access Footways	Footways associated with low usage, short estate road to main routes and culs-de-sacs.

Cycle Route Hierarchy

Category	Description
A	**Cycle lane** forming part of the carriageway, commonly 1.5 metre strip adjacent to the near side kerb. Cycle gaps at road closure point (no entries allowing cycle access)
B	**Cycle track,** a highway route for cyclists not contiguous with the public footway or carriageway. Shared cycle/pedestrian paths, either segregated by a white line or other physical segregation, or un-segregated
C	**Cycle trails,** leisure routes through open spaces. These are not necessarily the responsibility of the highway authority, but may be maintained by an authority under other powers or duties.

At present only the Footway Categories 1(a), 1 and 2 have been defined. This process was undertaken to produce the Best Value Performance Indicator BVPI 187 for the Department of Transport which the Council reported as part of its Performance Management Framework and LTP processes. This indicator is no longer required for the latest National Indicators but will continue to be collected to inform LTP3. The areas of footways considered for the hierarchy review for the BVPI 187 were based around the City Centre.

A review of footway hierarchies is underway (2010/11) and due to be completed to coincide with the implementation of new Maintenance Management Software (Pitney Bowes, Confirm).

Figure 9 Footway in Church Street, Werrington before Slab Replacement

This scheme was part of the ongoing Slab Replacement Programme

Figure 10 Footway in Church Street, Werrington after Slab Replacement

SECTION 3: RESOURCES

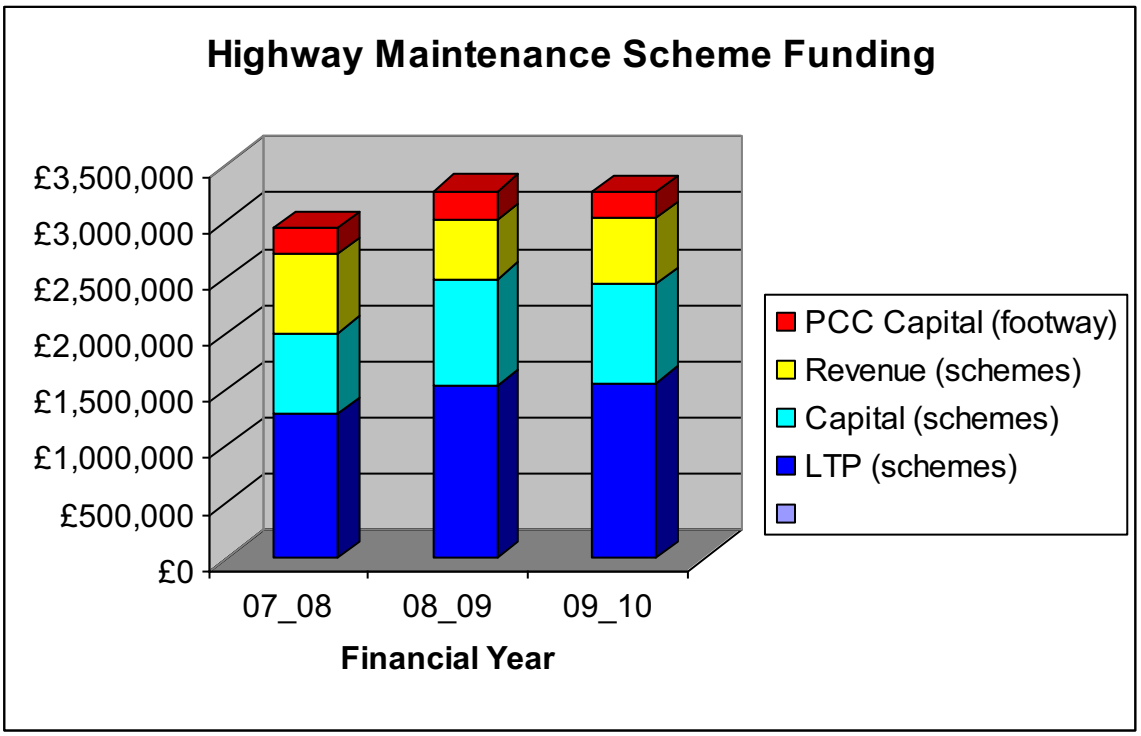
This section seeks to identify and quantify the resources used for the purpose of highway maintenance within Peterborough. This includes financial, human, contractual and equipment resources.

Financial Resources

Funding sources for highway maintenance within Peterborough are either of a capital or revenue nature. Large schemes are primarily funded through the Local Transport Plan capital maintenance allocations. Medium to small-sized schemes progress through the Peterborough City Council's capital and revenue budget allocations, the revenue budget also funds the routine maintenance works too (such as patching, gully cleansing and verge maintenance). Other new infrastructure schemes progressing through Local Transport Plan funding do result in indirect highway maintenance.

Capital and revenue allocations vary on a year on year basis, dependent on performance (in capital expenditure terms) and changing priorities within the authority. Fig. 3.1 shows the annual breakdown of expenditure for the previous 3 year-period (excluding structures and street lighting)

Figure 11 Highway Maintenance Scheme Funding

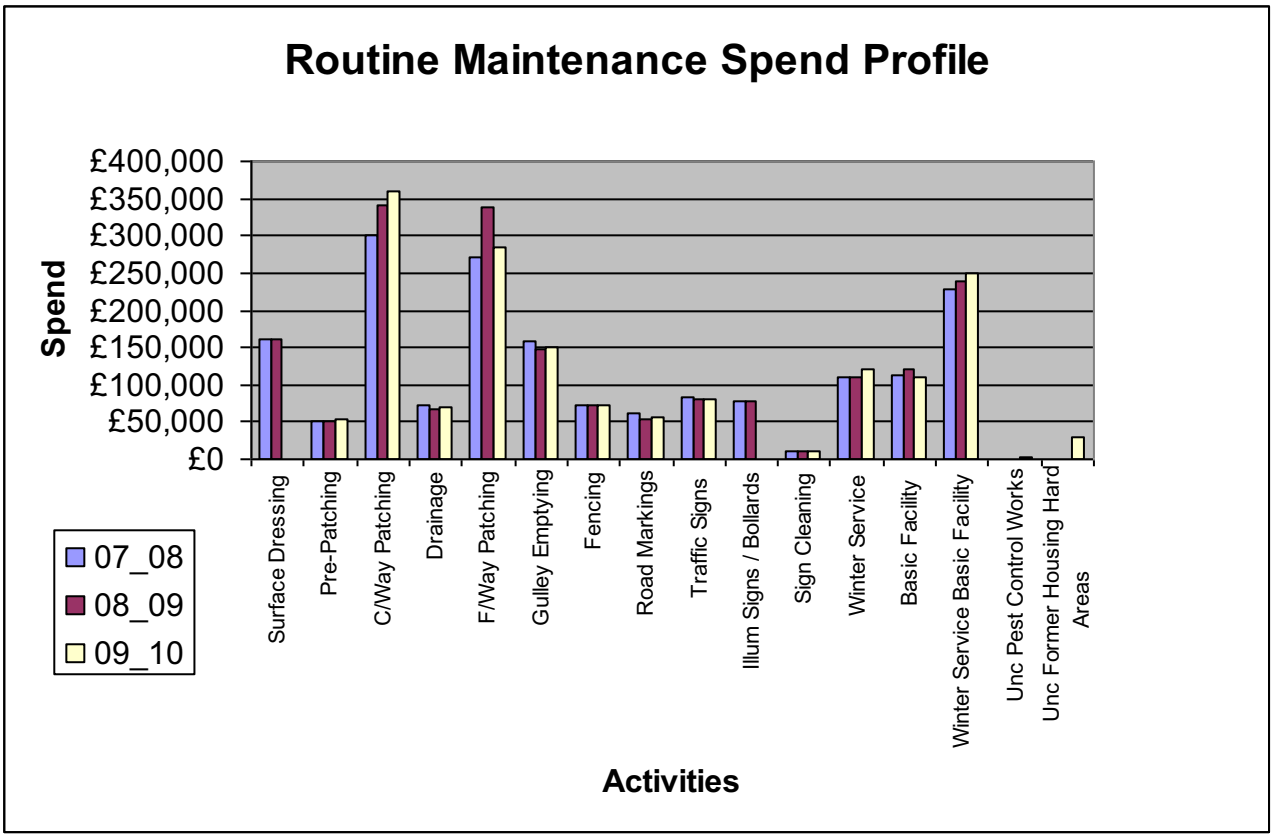


As can be seen from the above, the most significant aspect affecting the expenditure profile is the additional maintenance benefit accruing from Local Transport Plan (LTP) schemes, funding for the LTP comes from a grant from Central Government.

SECTION 3: RESOURCES (Cont'd)

A breakdown of the overall routine highway maintenance budget for the past three years can be seen in Figure 15 below:

Figure 12 Routine Maintenance Spend Profile



Human Resources

The responsibility for highway maintenance work within Peterborough City Council lies with the Highway Asset Management Group within the Planning, Transport and Engineering Services Division of the Operations Directorate.

The Highway Network Management Group, led by a Group Manager, is responsible for Asset/Highway Maintenance. The delivery teams under the direct control of the Group Manager are detailed below:

Highway Maintenance Team

Responsible for:

- General routine maintenance
- Structural maintenance schemes (carriageway and footways)
- Safety inspections
- Condition surveys
- Serving of notices and enforcement of HA1980 (including skips and scaffolding)
- Minor traffic management issues
- Maintenance of Public Rights of Way (PRoW)
- Winter Maintenance
- Street works Inspections
- Emergency out of hour's service.

SECTION 3: RESOURCES (Cont'd)

Staff:

- 11 Full time equivalents

Bridges and Drainage Team

Responsible for:

- Bridge maintenance
- Capital structures schemes
- Land and Highway drainage
- Non-highway infrastructure maintenance (on behalf of other departments)

Staff:

- 3 Full time equivalents

Street Lighting Team (under the line management of another Group Manager)

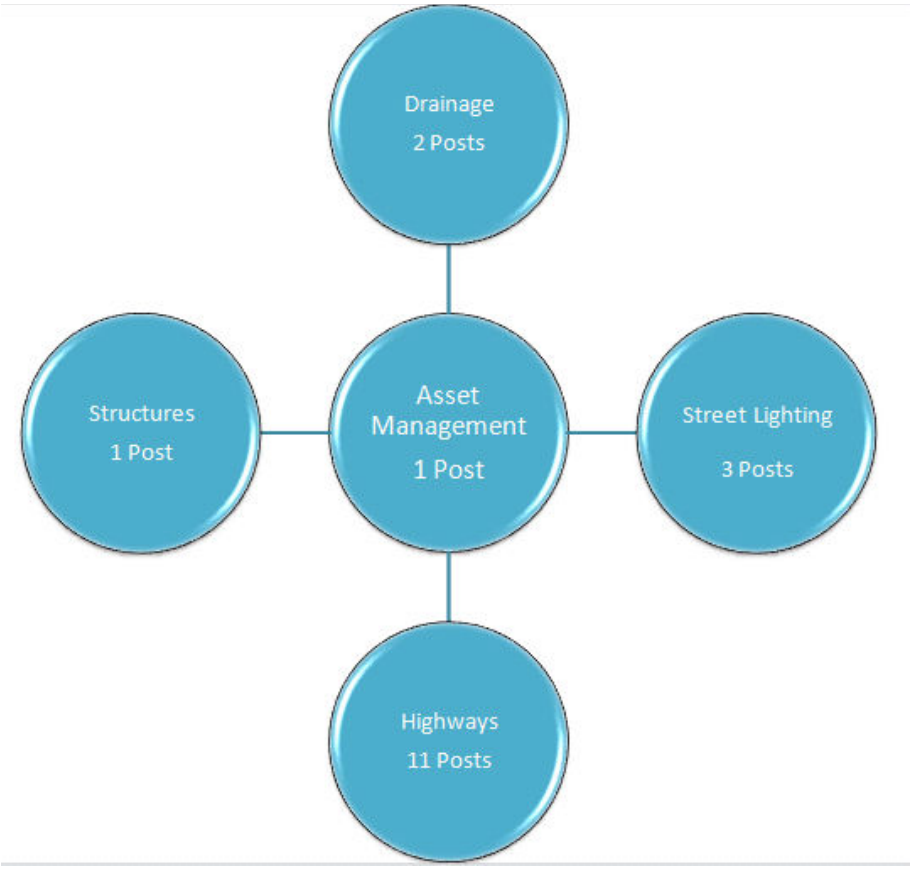
Responsible for:

- Traffic signs (illuminated)
- Street Lighting
- Traffic bollards (illuminated)

Staff:

- 3 Full time equivalents

Figure 13: Asset Management Delivery – Team Structure



SECTION 3: RESOURCES (Cont'd)

Contracts & Agreements

Peterborough City Council uses a number of contracts and other agreements for the purpose of highway maintenance. The Council's Standing Orders have historically dictated the format of these contracts. However, in order to secure "best value" and achieve less acrimonious working relationships with supply chain partners, a more flexible approach is needed. Environment, Transport and Engineering Services will continue to explore the scope to use alternative procurement techniques, as identified in the "Rethinking Construction" approach advocated in "the Egan report" (a progression of the earlier "Latham Report").

The details of contracts and agreements currently used by the authority for highway maintenance reasons are as follows:

Description	Type	Start Date	Duration	Value	Contractor
Highway Term Maintenance Contract , (including Routine Highway Maintenance, Safety Fencing Maintenance and Highway Schemes up to £150,000)	PCC Contract Schedule of Rates	01/08/2005	5 years + 2 + 3 year extension	£4,500k annum	Ringway Infrastructure Services
Road Marking & Road Stud	PCC Contract Schedule of Rates	01/06/2006	5 years (+1)	£57k/annum	Wilson & Scott
Verge Cutting	PCC Contract Performance			£750k	Peterborough Contract Services/ Service Team
Highway Consultancy (for Highway Maintenance section only)	PCC Contract	2 / 4/2007	5 years + 5 year optional extensions	£236k/annum	Atkins
Gully Cleansing	PCC Contract Schedule of Rates	1 / 4 /2007	5 year+ 2year extension	£157k/annum	ADC (East Anglia) Ltd

Highway Maintenance and Structures work only

In addition to the above, schemes for either individual or groups of schemes, may be procured via the Midland Highway Alliance route. In recent years, these are of a limited number though, mainly structures strengthening /improvement schemes.

SECTION 4: HIGHWAY INSPECTIONS

Safety Inspections

Safety inspections are used to identify defects likely to create a danger or cause serious inconvenience to users of the highway network or the general wider community and therefore require immediate or urgent attention. Safety Inspections are carried out on the entire adopted highway network within the Peterborough area.

The identification of defects takes place through:

- Routine Safety inspections
- Ad-hoc inspections identified whilst carrying out other duties on the network or following a third party report

Risk Assessment

In accordance with the recommendation in the 2005 Code of Practice the speed of response to identified defects has been developed from a process of risk assessment.

A risk matrix is detailed in Table 1.

The risk register for routine highway defects can be seen in Table 2.

Although it is not possible to identify every risk, the risks identified in the Peterborough risk register for Highway Safety Defects cover a wide range of risks likely to be encountered, it is not prescriptive. On-site judgement will need to take into account the particular circumstances of any defect such as:

- the extent of the defect
- the location of the defect relative to other highway features such as junctions and bends
- the position of the defect relative to the traffic (especially those of vulnerable users) such as in traffic lanes or wheel tracks
- The nature and extent of interaction with other defects
- Forecast weather conditions, especially potential for freezing of surface water

Response

Defect Categories

The Code defines defects in two categories, which correspond with those adopted in England by the Highways Agency (HA) in respect of motorways and trunk roads:

- **Category 1** – those that require prompt attention because they represent an immediate or imminent hazard or because there is a risk of short-term structural deterioration.
- **Category 2** – all other defects

SECTION 4: HIGHWAY INSPECTIONS (Cont'd)

Category 1

Wherever possible Category 1 defects should be made safe or repaired at the time of inspection: Where this is not possible Category 1 defects are to be made safe or repaired within **24 hours** from the time of identification during inspection. Some may require immediate attention as described below.

Where signing and guarding is required to make a defect safe, an arrangement for a system of regular inspection should be established to ensure that such signing and guarding is maintained in a proper condition.

Very dangerous defects require a response time of **2 hours** these are defects which due to their nature and location represent a particularly high risk.

When a category 1 defect is identified within a larger area of deterioration, only that part of the area which meets the criteria for category 1 defects shall be treated as a category 1 defect with the remainder being treated as a category 2 defect unless it is impractical to do so.

Some category 1 defects are associated with utility trenches/openings governed by the requirements of the New Roads and Streetworks Act (NRSWA). If the reinstatement is still within its guarantee period, is outside its specified tolerances and is within the category 1 criteria and the utility fail to act within the agreed timescale then the defect should be made safe and all costs recovered from the relevant utility.

Category 2

All defects identified during safety inspections that are not categorised a category 1 are automatically classified as category 2.

These defects are not considered to represent an immediate or imminent hazard but may have safety implications, although of a far lesser significance than Category 1 defects. Such defects are more likely to have serviceability or sustainability implications and whist they are not required to be urgently rectified are subject to monitor and review at the next inspection or repair during the next available programme.

Category 2 defects have been further categorised according to priority, high (H) medium (M) and low (L).

Category 2 response times are appropriate to the various categories of defect and are based on the risk probability and its likely impact. This takes into account the likelihood of further deterioration before the next scheduled inspection.

The decision whether to record those defects which are considered low risk [Cat 2 (Low) – response E] and have no determined response time remains at the discretion of the Highway Inspector.

The response for this lowest category could be in the form of submitting a recommendation for surface dressing or a structural maintenance proposal.

SECTION 4: HIGHWAY INSPECTIONS (Cont'd)

Timescales

The response for each category and sub category of defect is detailed in the following table:

Defect	Response	Timescale
Cat 1	Response A	2 hours
Cat 1	Response B	24 hours
Cat 2 (High)	Response C	Up to 7 days
Cat 2 (Medium)	Response D	Up to 28 days
Cat 2 (Low)	Response E	More than 28 days - monitor and if necessary review condition at the next inspection or repair during the next available programme.

The timescales represent the minimum expected response however those identifying defects are able to apply faster response times if they deem it necessary according to individual circumstances and location.

A hazard initially treated as a Response A or B and 'made safe' may then require a longer term Response C, D or E to be used to follow up with a permanent repair.

It is important for Inspectors to consider the availability of [contractor] resource when scheduling inspections in order to ensure response times are met. Inspections should not be programmed on Friday's or before public holidays (Good Friday, Christmas Day).

SECTION 4: HIGHWAY INSPECTIONS (Cont'd)

PROBABILITY	IMPACT					
		Very High (5)	High (4)	Medium (3)	Low (2)	Very Low (1)
	Very Likely (5)	25	20	15	10	5
	Likely (4)	20	16	12	8	4
	Possible (3)	15	12	9	6	3
	Unlikely (2)	10	8	6	4	2
	Rare (1)	5	4	3	2	1

Risk Factor	Defect Category	Priority Response	Priority Response Time
25	1	A	Up to 2 hours from inspection
15-20	1	B	Up to 24 hours from inspection
9-12	2	C	Up to 7 days from inspection
5-8	2	D	Up to 28 days from inspection
1-4	2	E	Defect low risk, monitor and if necessary review at next inspection or repair during next available programme.

Table 1 – Highway Defect Risk Prioritisation Matrix

SECTION 4: HIGHWAY INSPECTIONS (Cont'd)

Table 2

Safety Inspection Intervention Levels				
Ref	**CARRIAGEWAYS**			
	Defect Type	**Intervention Level**	**Hierarchy (location) 2, 3a, 3b**	**Hierarchy (location) 4a, 4b**
			Response	**Response**
1	Pothole (>150mm in all horizontal directions) Raised or missing block/channel Ridge, hump or depression Gap / crack (>20mm wide)	=> 75mm	A	B
		40 – 74mm	B	B
		20 – 39mm	D	E
	Edge Damage - encroaching beyond the inner edge of an edge line marking or where no marking encroaches 150mm or more into the running surface	As pothole		
	Edge Damage - within the inner edge of an edge line marking or encroaches less than 150mm into the running surface	=> 100mm	D	E
	Sunken cover or level difference within frame	=> 75mm	A	B
		40 – 74mm	B	B
		20 – 39mm	D	E
	Missing cover	All	A	A
	Polished cover	All	D	D
	Drainage - Blocked drainage feature or system (gully silted above outlet) causing standing water 1.5m or more from edge of carriageway 2 hours after cessation of rainfall	Yes/No	B	C
	Flooding - Property inundation as a result of defective highway drainage	Yes/No	A	A
	Flooding - substantial running water across carriageway	Yes/No	A	B
	Footway intervention limits are to be applied to areas of carriageway designated for pedestrian use such as pedestrian/zebra crossings, refuges with adjacent drop crossings and adjacent to tactile paved crossing points			

Safety Inspection Intervention Levels				
Ref	**VERGES**			
	Defect Type	**Intervention Level**	**Hierarchy (location) 2, 3a, 3b**	**Hierarchy (location) 4a, 4b**
			Response	**Response**
2	Sunken area edge adjacent and parallel to carriageway edge (rural area)	> 100mm	C	D
		75 – 99mm	D	E
	Sunken area adjacent to and running parallel with footway edge (urban area with kerbed carriageway)	> 100mm	C	C
		75 – 99mm	C	D
		40 – 74mm	D	E

SECTION 4: HIGHWAY INSPECTIONS (Cont'd)

Safety Inspection Intervention Levels				
Ref	**FOOTWAYS AND CYCLEWAYS**			
3	**Defect Type**	**Intervention Level**	**Hierarchy (location) 1a, 1**	**Hierarchy (location) 2, 3, 4**
			Response	**Response**
	Trip / Pothole	=> 25mm	B	B
		20 – 24mm	C	C
	Trip / Rocking slab or modular paving (Inc Kerbs)	+/- 20mm	B	B
		+/- 15 to 19mm	D	E
	Trip /Rocking kerb (adjacent to footway or other pedestrian area)	+/- 20mm	B	D
		+/- 15 to 19mm	D	E
	Trip / Horizontal Gap	More than (20mm wide x 20mm deep)	B	C
		More than (20mm wide x 10mm deep) less than (20mm wide x 20mm deep)	D	E
	Rapid change of profile (Crowning/depression)	> 50mm extending in plan direction 500mm or less	C	D
		> 30mm and < 50mm in plan direction 500mm or less	D	E
	Sunken cover or level difference within frame	> 30mm	B	B
		20 – 30 mm	C	D
	Missing cover	All	A	A
	Polished cover	All	D	D
	Drainage - Blocked drainage feature or system (gully silted above outlet) causing standing water 2 hours after cessation of rainfall sufficient to prevent use	Yes/No	B	B
	Flooding - Property inundation as a result of defective highway drainage	Yes/No	A	A
	Flooding - substantial running water across footway/cycleway	Yes/No	C	C

SECTION 4: HIGHWAY INSPECTIONS (Cont'd)

Safety Inspection Intervention Levels			
Ref	**GENERAL HIGHWAY FEATURES**		
4	**Defect Type**	**Hierarchy (location) 2, 3a, 3b, 4a, 4b**	
		Intervention Level	**Response**
	Road markings	70% loss of effective markings – Stop or solid centre line	C
		70% loss of effective markings – Other	D
		30% loss of effective markings – Stop or solid centre line	D
		30% loss of effective markings – Other	E
	Road studs	Missing with hole left in c/way	As pothole
		Displaced item on c/way	A
		Defective or ineffective item/s	E
	Fencing	Damaged or misaligned Safety Fence	B *
		Safety Fence out of specification	E
		Damaged/misaligned Pedestrian Barrier	B *
		Pedestrian barrier out of specification	E
	* For fencing these response times are **"to make the site safe "**		
	Non-illuminated Signs	Mandatory sign badly worn, missing or obscured	B
		Warning or Regulatory sign badly worn, missing or obscured	D
		Other sign badly worn, missing or obscured	E
	Illuminated Signs/Bollards/Signals	Any - badly worn, missing, obscured, failed, exposed wiring etc.	Refer to Street Lighting or Traffic Signals Team
	Hedges and trees*	Unstable tree or branch causing danger of collapse onto highway	A
		Overhanging tree <2.1m high over footway Overhanging tree <2.4m high over cycleway Overhanging tree <5.1m high over carriageway	D
	Oil / debris / mud / stones and gravel on a carriageway that are likely to cause a hazard	Present on running surface of 'live lane'	Refer to Street Cleansing
		Present on running surface not normally trafficked (e.g. adjacent to splitter island or off line on roundabout)	
	Street furniture	Damaged street furniture causing a significant hazard	B
	* Inspectors are not qualified to complete detailed tree inspections rather they are expected only to take note of any encroachment or visibility obstruction and any obvious damage that could threaten the safety of highway users. Support should be sought from qualified arboriculture trained staff as and when necessary. Inspectors are not expected to complete condition surveys of trees.		

SECTION 4: HIGHWAY INSPECTIONS (Cont'd)

Safety Inspection Frequency

Safety inspections within the Peterborough area are and will continue to be carried out at the following frequencies. These have been derived from and compared against the recommended frequencies as given in the Code of Practice and can be seen in the following table:

Feature	Cat	Description (As CoP Table 1& 2 Section 8)	Code of Practice Recommended Frequency	Peterborough City Council Frequency	Inspection method
Roads	2	Strategic Route	1 month	1 month	Driven*²
	3a	Main Distributor	1 month	1 month	Driven*²
	3b	Secondary Distributor	1 month	3 months*¹	Driven*²
	4a	Link Road	3 months	6 months*¹	Driven*²
	4b	Local Access	12 months	12 months	Driven*²
Footways	1a	Prestige Area	1 month	1 month	Walked
	1	Primary Walking Route	1 month	1 month	Walked
	2	Secondary Walking Route	3 months	3 months	Walked
	3	Link Footway	6 months	6 months	Driven
	4	Local Access Footway	12 months	12 months	Driven
Cycleway	A	Cycle Lane	As for roads	As for roads	As for roads
	B	Cycle Track	6 months	6 months	Walked/cycle
	C	Cycle Trails	12 months	12 months	Walked/cycle

*¹ **Note:** these inspection frequencies deviate from those defined in the Code of Practice for Highway Maintenance Management that does recognise the need for local authorities to interpret the guidance to suit their own local circumstances. This departure from the Code is necessary following consideration of the availability of resources within the Unitary Authority.

*² **Note:** where adjacent footway inspections are designated as 'walked' these roads will be inspected on foot at the same time as the footway

Driven Inspections

Where two officers are required on an inspection the responsibility for the inspection will be taken by one person defined as the 'Inspector' with the second acting as an assistant.

- Driven Inspections are to be undertaken from a slow moving vehicle with a dedicated driver and Inspector in a suitable vehicle appropriately liveried
- The following maximum speeds have been defined for inspections carried out from a moving vehicle:
    - High Speed Roads 50mph and above (carriageway only) – 40mph
    - Urban Roads <50mph (carriageway , footway or joint) – 20mph
- Notwithstanding the above the Inspector must use his discretion to determine a suitable speed having regard to all the circumstances including the prevailing weather and road conditions
- Consideration must be given to the safety of the inspection team and other road user during driven inspections
- Where footways are inspected from a moving vehicle and exist on both sides of the road the road is to be driven in both directions in order to give a clear view of the footway from the passenger seat.

SECTION 4: HIGHWAY INSPECTIONS (Cont'd)

- Where an Inspector's view of the footway is obscured by two or more cars parked in a row or other significant obstruction consideration should be made as to whether that section of footway should be inspected on foot. Inspectors are sufficiently experienced to judge whether a walked inspection is justified having regard to all the circumstances including the general age and condition of the footway either side of the obstruction
- All slabbed footways are to be walked regardless of category or hierarchy.

Walked Inspections

When carrying out walked inspections the Inspector is required to walk both footways (either side of the road) and identify defects over the whole highway as appropriate. Further passes may be necessary in wide pedestrian areas or alternatively arrangements can be made to carry out walked inspections in pairs to increase efficiency.

Routine Condition Surveys

These surveys are carried out annually and coincide with a safety inspection. They are undertaken by the Area Highway Inspector. The survey is a basic assessment of the condition of a highway feature based on a 1 to 5 scale, with 1 representing a near perfect feature and 5 representing totally failed feature.

These scores are recorded and used in the selection of sites for inclusion in planned maintenance programmes in following years.

Where an Area Highway Inspector believes that it is not economically viable to restore a section of the network to a satisfactory condition with limited maintenance works, the Highway Maintenance Team Manager shall be informed this site will then be included on the Highway Maintenance Scheme proposal database. It will then be surveyed and rated accordingly.

Inspectors should have particular regard for surface treatments that may be appropriate for inclusion on future programmes – such as surface dressing, micro asphalt and slurry seal.

SECTION 4: HIGHWAY INSPECTIONS (Cont'd)

Recording of Inspections, Defects and Remedial Works

It is vital that accurate and reliable records are maintained relating to the activities of the Council with regards to the highway maintenance activities undertaken. This is especially true in the area of safety inspections.

Currently records of highway maintenance activity are maintained on a highways management software package called SBS Confirm – Highways, as supplied by Pitney Bowes. This system consists of a highway inventory identifying all adopted streets within the Peterborough area. It maintains records of all safety and ad-hoc network inspections and relates the inspection to any defect found and any instruction for remedial action, if required.

The records contained in the Pitney Bowes Confirm-Highways system are retrievable and help protect the Council should a claim be made relating to the condition of the highway network. It is therefore imperative that anyone undertaking either safety inspections or issuing instructions for works ensures that an accurate record of their actions is entered onto the system. This may either be done directly onto the main Confirm Highway System or, preferably onto the hand-held Field Booking Instruments (FBI), where provided.

A brief outline of the functionality of this system is as follows:

- Maintains a highway inventory containing all adopted streets in the Peterborough area.
- Generates inspection routes for the Council's Highway Inspectors
- Records inspection details
- Relates details of defects to identified from inspections
- Relates instructions for remedial works to defects/inspections
- Issues either electronic or hard copy instruction to contractor (dependent on contract)
- Establishes the status of instruction
- Records details of actual remedial work undertaken and submits a request for payment by contractor
- Records and reports on financial matters
- Reports on the highway maintenance aspect of a streets history
- Reports on performance relating to highway inspections
- Reports on performance relating to contractor performance

Inspector Training

If the council is to provide evidence that is to be used in court, it is essential to be able to demonstrate that the individuals who complete inspections are adequately trained. Inspectors are to receive formal 'Highway Inspector' training to ensure they are competent in the completion of inspections.

Peterborough City Council's Highway Inspector's are to complete the Leicestershire LANTRA Award 'Highway Inspector Training Scheme' (or similar) prior to participating in safety inspections as the nominated 'inspector'. This training is not required for the assistant role.

SECTION 5: OPERATIONAL PROCEDURES

Structural Condition Surveys

The main purpose of these surveys is to collect data so it can effectively prioritise planned maintenance work. It is essential to build up a comprehensive picture of the condition of the asset. Priorities, timing and appropriate treatments can then be selected by using United Kingdom Pavement Management System (UKPMS) and local engineering judgement, to give optimum results in terms of maintenance costs against preservation of asset value.

Structural condition surveys also support the following operational/reporting purposes:

- To identify priorities for planned maintenance;
- To support the Local Transport Plan and other funding bids;
- To report network condition against criteria for National Indicators (NI formally BVPIs);

The use of the UKPMS is mandatory in all cases where survey assessment are undertaken to provide National Indicators. The UKPMS also gives outputs regarding asset condition, treatments required and possible budgetary requirements. Before a software house can market a UKPMS they need to pass independent testing to confirm they comply with the national requirements. The systems on the market have all been developed to a national specification and incorporate rules and parameters which will enable the same condition scores and treatment recommendations to be output, irrespective of which system provider is used. Peterborough CC is in partnership with Cambridgeshire CC in using WDM Ltd UKPMS software, giving a vastly reduced procurement cost to both authorities. As well as the software being independently tested each type of survey have annual health checks and only accredited suppliers can undertake these road condition surveys.

Peterborough City Council is part of an Eastern Region consortium which has procured Highway Condition Surveys (machine based surveys only) jointly via Eastern Shires Purchasing Organisation (ESPO). This contract runs from 1 April 2005 to 31 March 2011, extendable by two years. The present service provider is WDM Ltd. This consortium achieves economy of scale in providing road assessment surveys.

The quantity and location of these surveys are reviewed on a regular basis after considering changes either in policy or to the highway network. The previous years survey coverage and NIs /BVPIs are detailed in Appendix 1.

SECTION 5: OPERATIONAL PROCEDURES (Cont'd)

Description of Survey Types

Deflectograph Survey

The deflectograph vehicle operates at approximately 2km/hour, taking measurements every 5m of the transient deflection of the carriageway surface under the passage of a heavy wheel load. This test establishes the strength of the road structure through applying a known load to a road surface. A measurement is taken of how much the road gives or "deflects" when the load is applied. This data, along with details of the road construction, enables the long term structural performance of the road to be calculated and can then be used to predict the 'residual life' of the road. The residual life enables future maintenance requirements to be identified before there are any visual surface defects and also helps ensure maintenance works are designed to improve the anticipated life span of the road. This test is currently used on Principal Roads. If a road with 0 years residual life means that it has lost its strength and may be considered for reconstruction.

Within Peterborough, a rolling 10-year programme results in 10% of the principal road network being surveyed each year. The data produced from the survey is extremely useful in monitoring the changes in structural condition of the principal network in Peterborough and can contribute to forward works programme.

Deflectograph surveys are not carried out on non-principal and unclassified roads within the Peterborough area.

Figure 14 Deflectograph Survey Vehicle

SECTION 5: OPERATIONAL PROCEDURES (Cont'd)

Sideway-force Coefficient Routine Investigation Machine Survey (SCRIM)

The maintenance of adequate skid resistance on running surfaces is an aspect of highway maintenance which contributes significantly to network safety. Measurement of skid resistance requires the use of specialist testing equipment. Roads carrying high traffic levels, particularly those with large numbers of heavy vehicles, are most prone to loss of skid resistance. The SCRIM survey establishes the skid resistance of a road surface by using a specially adapted vehicle installed with an additional wheel offset by 20 degrees. As the vehicle is driven at the test speed of 50kph, a controlled flow of water is applied to the road surface ahead of the wheel. A measurement is taken of the sideways force applied to the wheel which is then used to provide the SCRIM value. The results of this test will draw attention to areas of the network that have poor skid resistance values and therefore pose a potential hazard for the highway user. The Design Manual for Roads and Bridges provides details for the investigatory levels for skid resistance which will vary, depending on the character of the site.

100% of the principal road network is surveyed annually, however, the timing of this survey is staggered each year, between Early, Mid and Late season, to allow a characteristic SCRIM co-efficient value to be produced for each section of the network using the Annual Survey Method. This methodology is recommended by the Code of Practice for Highway Maintenance Management, as this reduces between-year variations of skid resistance.

The survey data is used to target surface improvements to sites where casualty reduction can be expected. The annual SCRIM process is detailed in Appendix 3.

No surveys are carried out on the non-principal and unclassified network.

Figure 15 SCRIM Survey Vehicle

SECTION 5: OPERATIONAL PROCEDURES (Cont'd)

SCANNER survey

The SCANNER survey has been introduced following national problems of inconsistency with UKPMS Coarse Visual Surveys (manual surveys) and as a replacement to the Deflectograph survey, as a network management tool. The SCANNER survey became mandatory in England in 2004/05 for reporting of Best Valve Performance Indicators BVPI 223 (Principal Rds) and 224a (B & C roads), these indicators have now been replaced by National Indicators NI168 & NI 169 respectively.

The survey involves a specially adapted vehicle which is driven at normal traffic speed over the highway network to measure and record surface characteristics, such as:

- Wheel path rutting
- Cracking
- Texture profile
- longitudinal profiles
- Survey speed
- Road geometry
- Spatial co-ordinates of sections and data

These are fast surveys with real time processing of condition information that have been introduced with the aim of providing both reliable and repeatable information for the assessment of carriageway condition.

The SCANNER survey is presently undertaken on A, B, C roads to report the National Indicators; the coverage is laid down in the guide lines for NI production. Also, this same information forms the basic condition information used to prioritise the forward works programme for carriageway resurfacing works. From 2010 the coverage of the SCANNER survey will be extend to Unclassified roads which have a hierarchy of Secondary Distributor or higher. This will allow the condition assessment and funding of the carriageway resurfacing refurbishment of the Strategic Route, Main and Secondary Distributors to be based on the same base condition data.

Figure 16 SCANNER Survey Vehicles

SECTION 5: OPERATIONAL PROCEDURES (Cont'd)

UKPMS Coarse Visual Inspection Surveys (CVI)

This survey is primarily a carriageway survey, but covers the full highway width including footways, verges and cycleways, it establishes road condition by visual (human) means and survey data is collected from a **driven** inspection of the network. These surveys are carried out using parameters set within the UKPMS. Visible defects (see below) across the full highway are recorded and classified within the criteria of UKPMS.

Edge deterioration
Cracking
Rutting
Wheel track cracking
Settlement
Surface deterioration
Surface course deterioration
Joint seal (concrete carriageways)

This data is then processed using UKPMS compliant software from which a score is derived. This survey is only used on the Unclassified road network, a proportion of the unclassified network is surveyed annually, as well as locations which have been submitted for the carriageway resurfacing forward programme. The condition score is then used as the base condition data in assessing the merit of the scheme against other scheme similarly submitted for consideration for the forward works programme for carriageway resurfacing.

Detailed Visual Inspection Surveys (DVI)

This survey establishes footway or road condition by visual means and survey data is collected from a **walked** inspection of the network. These surveys are carried out using parameters set within the United Kingdom Pavement Management system (UKPMS) in order to achieve consistent results nationally. Visible defects (see below) are recorded and classified within the criteria of UKPMS.

Cracking
Settlement
Longitudinal trips
Spot defects
Fretting
Damaged blocks/flags

This data is then processed using UKPMS compliant software from which a score is derived. Over the recent years DVI surveys have been undertaken on the footways within Peterborough with a hierarchy of 1(a), 1 and 2, to produce BVP Indicator 187. BVPI 187 is no longer a mandatory survey and these resources may be used to assess the footway locations submitted for consideration to go onto the Footway forward works programme.

Currently, CVI and DVI surveys are carried out by the consultant Atkins, via their consultancy contract with the authority.

SECTION 5: OPERATIONAL PROCEDURES (Cont'd)

Scheme Selection Criteria

It is unlikely that sufficient resources will ever be available to undertake all of the necessary highway maintenance schemes required at any one time. Therefore, it is important to establish a clear and sound means of prioritising sites that require major works. The Highway Maintenance team, within the Asset Management Group, have adopted a more rigorous use of Asset Management data when prioritising maintenance scheme bids into a works programme. Further data is being captured that will facilitate the development of provisional rolling five year core maintenance programmes, ensuring that maintenance budgets are allocated to achieve maximum return on the investment . This rolling five year maintenance programme will also create greater opportunities for co-ordinating and programming maintenance work with other programme areas, such as traffic management/engineering schemes to reduce scheme costs.

The government has encouraged local highway authorities to adopt the UKPMS methodology so that maintenance needs can be consistently assessed at a national level. This may be done using either the Course Visual Inspection (CVI) or SCANNER survey.

Peterborough does not undertake either of the above surveys over the whole of the highway network as can be seen in Appendix 1. This shows both the current survey regime in Peterborough and the recommended national survey regimes as given in the Code of Practice

Where UKPMS data is available, it is used as a means of prioritising the forward works programme for carriageway resurfacing/reconstruction schemes on the road network. However, on all other elements of the network, a local methodology is currently employed to determine scheme selection

Structural Maintenance Assessment Procedure.

Carriageway Schemes

Engineers interrogate the SCANNER Road condition data for parts of the network which have a Road Condition Index (RCI) of over 40 (amber). The condition data is overlaid onto plans of the network and where clusters of scores >40 occur a possible scheme is highlighted. The total RCI score for a highlighted scheme location is then divided by the proposed scheme length to give a basic score.

Unclassified roads are not surveyed by the SCANNER method and their assessment for schemes are based on CVI surveys, with up to 25% of the Unclassified Network being surveyed each year including locations which are identified for consideration on recommendation from Area Highway Inspectors and other members of the Highway Asset Management Group. The CVI survey also gives a Road Condition score, but it cannot be compared to the SCANNER RCI.

These basic scores are then factored a further two times, as detailed below:-

Hierarchy Factor		**Location Factor**	
Hierarchy	**Score**	**Location**	**Score**
Strategic Route	1.5	Urban/industrial/commercial	1.3
Main Distributor	1.4	Sub-urban (parkways and schemes which have both rural and urban sections)	1.2
Secondary Distributor	1.3	rural	1.1
Link Road	1.2		
Local Access Road	1.1		

SECTION 5: OPERATIONAL PROCEDURES (Cont'd)

There is also an Engineer's veto/enhancement which takes into consideration factors like location of schools, mosques and the like. The veto may be used because of future major developments or the condition basic score does not warrant the location to resurfaced or treated. When this occurs the Engineer will record in writing the reason for the decision.

As there is no direct link between SCANNER and CVI scores, possible future schemes are split into two categories:-

Category One; contains all proposed resurfacing and surface treatment schemes on the Strategic, Main and Secondary Distributor Hierarchies, which is funded by the Local Transport Plan (LTP) settlement from Central Government. All these routes are routinely surveyed by the SCANNER survey machine.

Category Two; contains all proposed resurfacing and surface treatment schemes on the Link and Local Road Hierarchies, which is funded by a proportion of the Peterborough City Council Capital budget.

Footway Schemes

The Local Transport Plan consultation process identified a clear public preference for replacing slab footways with bituminous footways. Therefore, a slab replacement footway programme has been undertaken over recent years with a policy of bituminous refurbishment as a construction treatment (unless the site is within a conservation area).

Area Highway Inspectors mainly identify potential sites for structural footway / cycleway maintenance works. However, other members of the Highway Asset Management Group do also identify sites for consideration.

Any potential site is entered onto a scheme database and a site survey request report is produced. All such sites are then surveyed and assessed jointly by the Area Highway Inspector and the Highway Inspection and Works Team Senior Engineer and a "Condition Level" is applied, based on the definitions contained within Table 1. This is purely an assessment of the structural condition and the level of possible public liability claims. The results from this survey are then entered into the database.

Condition Level	Definition
1	As new no defects
2	Good condition requiring little local remedial work. No public liability defects
3	Average condition containing numerous defects (some possibly public liability) requiring local remedial action. This level may indicate preventative maintenance required
4	Below average condition with many defects (high number of public liability defects). This level indicates a condition where resurfacing may be required
5	Severely deteriorated condition requiring reconstruction

Table 1: Condition Factor

SECTION 5: OPERATIONAL PROCEDURES (Cont'd)

Following this, a number of other factors are applied to prioritise footway / cycleway schemes. It is important to direct resources to areas of the network that are used more heavily so a "hierarchy factor" is applied. As can be seen in Table 2, higher values apply to heavily used sections of the footway / cycleway network

Cycleway		Footway	
High use cycleway	4	City centre	5
Medium use cycleway	3	Busy urban	4
Low use cycleway	2	Urban or busy rural	3
		Rural	2

Table 2: Heirachy Factor

Consideration also needs to be given to the cost implication if structural footway / cycleway maintenance works are not carried out. If a section of the footway / cycleway network is allowed to deteriorate, it may mean that either a higher level of remedial works, such as patching, will be required to ensure that the public are not put at risk or that a more expensive method of maintenance will be required. Table 3 illustrates the factors applied to take this aspect into account.

Description	Factor
Little additional cost incurred by deferring scheme	1
Moderate additional cost incurred by deferring scheme mainly due to the cost of remedial works required to ensure that the site is safe	2
High level of additional cost incurred by deferring scheme due to remedial works required to ensure that the site remains safe or where delay would result in more expensive treatment at a later date	3
Very high level of additional cost incurred by deferring scheme leading to substantially more expensive treatment being required at a latter date	4

Table 3: Cost Factor

Parish / Ward	Location	Section	Type	Treatment	Condition Score	Hierarchy Factor	Cost Factor	Total Score
Orton Southgate	Bakewell Road	Entire length	Footway	Reconstruct	3	3	2	18
City - Stanground	Brodsworth Road	Entire length	Foot / cycleway	Resurface	4	3	2	24

Table 4: Footway Re-surfacing 2011-12

Having established the applicable factors to the surveyed site, the factors are multiplied together and accordingly ranked against each other (with a maximum value of 100). The results are then analysed and other factors, which cannot be so simplistically applied (e.g. such as conflict with other works) are considered. Judgement is then used to decide on which schemes should go forward for inclusion in the structural footway / cycleway maintenance programme

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SECTION 6: PLANNED MAINTENANCE METHODS

CARRIAGEWAY	**Life**	**Cost per sq m**
Reconstruction Sometimes the condition of the road structure will deteriorate to a point where the only appropriate action left is to excavate the old road to a significant depth and totally rebuild the road to the required standard. Wherever possible, this event should be avoided by the timely use of other less extensive and expensive methods. Reconstruction of urban roads will undoubtedly involve conflict with underground mains and supplies, which also complicate and add to the cost of any scheme. This method should restore a full design life to the road subject to adequate future maintenance.	20-30 years	£ 65.00
Full Depth Recycling This process seeks to reconstruct a road that has become weakened and lost its shape. Its use will restore strength and return the road back to an acceptable surface regularity. The process involves the controlled breaking up of the existing road surface which then can either by recycled on site (using specialized equipment) or transported off site (to recycling plants that are able to recycle the material for transport) and returned back to site and re-laid. A new surface course is, however, always applied to a recycled road. The technique is still developing as an environmentally friendly means of maintaining certain roads. Certain sites may have too many constraints for the process to be practical	15-20 years	£ 85.00
Resurfacing There are two options available when resurfacing a road - ***overlay*** or ***inlay***. The option used will be dependent on the site. The aim of resurfacing is to restore the surface course of a road. Both processes generally use new materials. Materials used may include hot rolled asphalt (HRA), thin surface course (TSC) and asphaltic concrete. The choice of material and depth to which it is laid will be dependent on the site. Any necessary remedial work to the underlying road structure is carried out prior to the laying of the binder or surface course		
Overlay usually involves the laying of a new surface course (40 – 50mm thick) over the existing road. As the constructed road depth is effectively being increased, there is a notional increase in road strength as well. Not all sites are suitable for overlay. This is especially true in urban areas where the increase in road level would have implications relating to kerb face and effects on adjacent properties.	7-15 years	£21.00
Inlay involves the removal of the existing road surface and sometimes all or parts of the binder course and it is replaced with new material. Therefore, the final surface level will be the same as the original albeit with improved surface regularity. As the overall construction depth is not increased, there is no real increase in road structure strength. Inlay is used where site constraints mean that an overlay is not possible.	7-15 years	£ 21.00

SECTION 6: PLANNED MAINTENANCE METHODS (Cont'd)

CARRIAGEWAY	**Life**	**Cost per sq m**
Retread This process typically recycles the top 75mm of road surface by scarifying the surface down to that depth, restoring the surface regularity by harrowing and adding additional aggregate where required before mixing with a bitumen emulsion binder. This is then compacted and surface dressed immediately. The advantage of the process is that it is environmentally friendly by reducing the quantities of primary aggregate used and it does not add to the load imposed on the underlying sub-grade. However, the result is not as strong as a newly resurfaced road and its use is currently restricted in Peterborough to fenland areas where the lack of additional loading to the weak underlying soil is important. Also the following year a retread scheme should be surface dressed, to ensure the council gets the maximum life from this process.	7-10 years	£18.75
Micro Asphalt Although this process has been around for several years, it is still being developed by specialist contractors. The material is a mixture of bitumen emulsion and small aggregate applied to the road surface, usually in 2 layers to a depth of 10 to 15mm. Its main use is to cover a surface course that is beginning to fail whilst having the ability to smooth out minor undulations. The process does not add any strength to the road. Any significant defects require attention through patching prior to the application of micro asphalt.	7-10 years	£ 4.60
Surface Dressing This process has been used to as a preventative means of maintenance for many years. The aim is to seal an existing road by applying a controlled rate of bitumen emulsion and then restore surface texture. Although the process sometimes has a negative image with the public due to loose chippings (present for a short time after the works), it is a very cost effective way of maintaining the integrity of a road structure, especially for rural routes. It significantly extends the life of the road before resurfacing or reconstruction works are required. The process does not add strength to a road nor does it remove any surface irregularity. Any significant defects require attention through patching works prior to the application of the surface dressing.	7-10 years	£ 2.75

SECTION 6: PLANNED MAINTENANCE METHODS (Cont'd)

FOOTWAYS / CYCLEWAYS	**Life**	**Cost per sq m**
Reconstruction This means the existing footway structure is removed and a totally new footway constructed. This technique will be generally used where the existing footway structure did not meet current standards or where a slabbed footway is being replaced with asphaltic concrete. Usually, construction depth for a new footway is 170 mm	25 years	£38.00
Resurfacing This method has traditionally been the most commonly used. It involves the removal of the existing surfacing material, usually to a depth of 70mm and resurfacing with new materials.	25 years	£ 27.00
Overlay On suitable sites, it is possible to overlay the surface of an existing footway with a new surface course. This method uses the existing structure for strength whilst restoring the surface regularity and visual appearance of the footway.	15 years	£ 9.50
Slurry Sealing This method is effective in sealing an existing footway where the surface course is beginning to fail. It involves the application of a thin layer of bitumen emulsion and fine aggregate. In addition to extending the life of a footway by preventing water ingress, it also provides a consistent colour and texture. If significant defects are present, they should be dealt with prior to the application of the slurry seal.	6 years	£ 4.10
Surface Dressing This is a similar process as surface dressing for carriageways. However, there is the possibility of using resin based binders that allow more control over the appearance of the final work. **The process is not suited to urban footway use**.	5 years	£ 5.10

SECTION 6: PLANNED MAINTENANCE METHODS (Cont'd)

Figure 17 Church Street Werrington before Slab Replacement Scheme

This scheme was part of the ongoing Slab Replacement Programme

Figure 18 Church Street Werrington after Slab Replacement Scheme

SECTION 7: WINTER SERVICE

As the highway authority for the Peterborough area, Peterborough City Council has a duty under Section 41 of the Highways Act to "ensure so far as is reasonable practicable, that safe passage along a highway is not endangered by snow or ice". There is also an additional duty under Section 150 of the act to remove from the highway.

Winter Service may be divided into two main types:

- Precautionary: This describes action taken by the authority to prevent the formation of a hazard such as frost or ice.
- Reactive: This describes action taken to remove a hazard that has already formed such as accumulations of snow or ice that have formed on the network.

The Council is responsible for over 882 km of highway. It is not practicable to treat the whole network; therefore, the council has adopted a reasoned policy to determine what streets will be treated.

The selection criteria for determining what sections of the network receive precautionary treatment are as follows:

- Principal roads (A roads that are not Trunk Roads);
- Roads carrying the heaviest commuter traffic;
- Roads linking centres of population;
- "B" and "C" class roads;
- Roads that link to treated routes within adjacent authorities;
- Heavily trafficked city centre pedestrian areas and footways;
- Pedestrian/Cycle routes passing over/under bridges/subways with sleep inclines;
- Bus routes with a service interval 10 minutes or less

Full details of the Winter Service provided by the council, can be found in its Winter Service Operational Plan, which is held and reviewed annually by the Highway Asset Management Group.

Figure 19 Clearing snow from the Highway Network

Appendix 1: Highway Surveys

HIGHWAY SURVEYS

Principal Road BVPI's

BVPI	PCC Survey Strategy/Network Coverage	DfT Guidance (minimum survey coverage)	PCC Survey strategy equivalent or better than DfT guidance	Year of Survey	Report date	Figure	Rule set	Merge Method	Criteria	Comments
96	**Principal Roads / 100%**			2000_2001						
96	**Principal Roads / 100%**			2001_2002						
96	**Principal Roads / 100%**			2002_2003						
96	**Principal Roads / 100%**	100% coverage annually	✓	2003_2004	06/11/2003	**3.64%**	RP3.0.2	Variable	CVI Survey	
96	**Principal Roads / 100%**	100% coverage annually	✓	2004_2005	05/05/2005	**5.85%**	RP5.01P1	Variable	CVI Survey	
96	**Principal Roads / 100% in both direction annually**		✓	2004_2005	07/04/2005	**21.32%**	RP5.01P1	Variable	TTS	First year of mechanical surveys on this category of road
223	**Principal Roads / 100% in both direction annually**	100% coverage in one direction or 50% in both directions annually - reported over two years to give 100% coverage	✓	2005_2006	14/03/2006	**8.00%**	RP6.01	Variable	SCANNER	Rule set change dramatically affected figure
223	**Principal Roads / 100% in both direction annually**	100% coverage in one direction or 50% in both directions annually - reported over two years to give 100% coverage	✓	2006_2007		**5.00%**	RP7.01	Variable	SCANNER	
223	**Principal Roads / 100% in both direction annually**	100% coverage in one direction or 50% in both directions annually - reported over two years to give 100% coverage	✓	2007_2008	18/02/2008	**1.00%**	RP8	Variable	SCANNER	Rule set change dramatically affected figure
NI168	**Principal Roads / 100% in both direction annually**	100% coverage in both directions reported over two years	✓	2008_2009	28/03/2009	**2.00%**	RP8.01	Variable	SCANNER	BV 223 replaced by NI168
NI168	**Principal Roads / 100% in both direction annually**	100% coverage in both directions reported over two years	✓	2009_2010	29/06/2010	**2.00%**	RP9.01	Variable	SCANNER	
NI168	**Principal Roads / 100% in both direction annually**	100% coverage in both directions reported over two years	✓	2010_2011	09/05/2011	**2.00%**	RP10.01	Variable	SCANNER	

Notes

The BVPI figure has steadily fallen, although it should be noted that the figures cannot be compared on a like for like basis due to the survey techniques used and rule sets applied. The network condition seems to have plateaud at around 9%. The SCANNER figure has dramatically reduced due to the changes in the way the defects are weighted and the thresholds used to calculate the figures. In 2004/05 the figures were high nationally becasuse these thresholds were set too low and minor defects triggered them. A review was undertaken and a new set of weightings and thresholds has subsequently been adopted.

Non Principal-Classified Road BVPI's

BVPI	PCC Survey Strategy/Network Coverage	DfT Guidance (minimum survey coverage)		Year of Survey	Report date	Figure	Rule set	Merge Method	Criteria	Comments
97	**Non Principal (Classified) / 100%**			2000_2001						
97	**Non Principal (Classified) / 100%**			2001_2002						
97a	**Non Principal (Classified) / 100%**			2002_2003						
97a	**Non Principal (Classified) / 100%**			2003_2004	06/11/2003	**27.60%**	RP3.0.2	Variable	CVI Survey	
97a	**Non Principal (Classified) / 100%**			2004_2005	05/05/2005	**14.04%**	RP5.01P1	Variable	CVI Survey	Rule set change dramatically affected figure
97a	**Non Principal (Classified) / 100%**			2005_2006	26/06/2006	**17.27%**	RP6.01	Variable	CVI Survey	100% survey using CVI for historical comparison
224a	**Non Principal (Classified) / 100% in both directions for B roads and one direction for C Roads**	100% coverage in one directions for B roads and at least 10% in one direction for C Roads - reported annually	✓	2005_2006		**16.00%**	RP7.01	Variable	SCANNER	First year of mechanical surveys on this category of road
224a	**Non Principal (Classified) / 100% in both directions for B roads and one direction for C Roads**	100% coverage in one direction for B roads and 50% in one direction for C Roads - reported over two years	✓	2006_2007	19/04/2007	**10.00%**	RP7.01	Variable	SCANNER	
224a	**Non Principal (Classified) / 100% in both directions for B roads and one direction for C Roads**	100% coverage in one direction for B roads and 50% in one direction for C Roads - reported over two years	✓	2007_2008	18/02/2008	**4.00%**	RP8	Variable	SCANNER	
NI169	**Non Principal (Classified) / 100% in both directions for B roads and one direction for C Roads**	100% coverage in both directions for B roads and in one direction for C Roads reported over two years	✓	2008_2009	28/03/2009	**5.00%**	RP8.01	Variable	SCANNER	BV224a replaced by NI168
NI169	**Non Principal (Classified) / 100% in both directions for B roads and one direction for C Roads**	100% coverage in both directions for B roads and in one direction for C Roads reported over two years	✓	2009_2010	29/06/2010	**6.00%**	RP9.01	Variable	SCANNER	
NI169	**Non Principal (Classified) / 100% in both directions for B roads and one direction for C Roads**	100% coverage in both directions for B roads and in one direction for C Roads reported over two years	✓	2010_2011	09/05/2011	**7.00%**	RP10.01	Variable	SCANNER	

Notes

Unclassified Road BVPI's

BVPI	PCC Survey Strategy/Network Coverage	DfT Guidance (minimum survey coverage)		Year of Survey	Report date	Figure	Rule set	Merge Method	Criteria	Comments
97b	**Non Principal (Unclassified) / 50% annually**	25% annually - reported on current years data set only	✓	2002_2003	25/04/2003	**22.96%**	RP3.0.2	Variable	CVI Survey	
97b	**Non Principal (Unclassified) / 50% annually**	25% annually - reported on current years data set only	✓	2003_2004	03/12/2003	**16.73%**	RP3.0.2	Variable	CVI Survey	
97b	**Non Principal (Unclassified) / 100% anually**	25% annually - reported on current years data set only	✓	2004_2005	05/05/2005	**15.44%**	PR5.01P1	Variable	CVI Survey	
224b	**Non Principal (Unclassified) / 50% annually**	25% annually - reported on current years data set only	✓	2005_2006	26/06/2006	**17.67%**	RP6.01	Variable	CVI Survey	New BVPI number and Rule Set this year. Data collection and reporting remain the same as previous years
224b	**Non Principal (Unclassified) / 50%**	25% annually reported over 4 years to give 100% coverage	✓	2006_2007	10/04/2007	**21.00%**	RP7.01	Variable	CVI Survey	First year of 4 year reporting
224b	**Non Principal (Unclassified) / 50% annually**	25% annually reported over 4 years to give 100% coverage	✓	2007_2008	05/02/2008	**19.00%**	RP8	Variable	CVI Survey	4 year reporting
224b	**Non Principal (Unclassified) / 50% annually**	25% annually reported over 4 years to give 100% coverage	✓	2008_2009	10/03/2009	**19.00%**	RP8.01	Variable	CVI Survey	
224b	**Non Principal (Unclassified) / 50% annually**	25% annually reported over 4 years to give 100% coverage	✓	2009_2010	29/06/2010	**19.00%**	RP9.01	Variable	CVI Survey	
224b	**Non Principal (Unclassified) / 50% annually**	25% annually reported over 4 years to give 100% coverage	✓	2010_2011	09/05/2011	**19.00%**	RP10.01	Variable	CVI Survey	

Notes

50% of the network is nominally sampled each year.

Footway Based BVPI's

BVPI	PCC Survey Strategy/Network Coverage	DfT Guidance (minimum survey coverage)		Year of Survey	Report date	Figure	Rule set	Merge Method	Criteria	Comments
187	**Footways / 100% Annually**	50% annually alternating each year	✓	2002_2003	29/09/2003	**40.03%**	RP3.0.2	Variable	DVI Survey	
187	**Footways / 100% Annually**	50% annually alternating each year	✓	2003_2004	23/02/2004	**37.95%**	RP4	Variable	DVI Survey	
187	**Footways / 100% Annually**	50% annually alternating each year	✓	2004_2005	05/05/2005	**18.11%**	RP5.01P1	Variable	DVI Survey	
187	**Footways / 100% Annually**	50% annually alternating each year	✓	2005_2006	24/03/2006	**18.81%**	RP6.01	Variable	DVI Survey	
187	**Footways / 100% Annually**	50% annually reported over 2 years to give 100% coverage	✓	2006_2007	24/04/2007	**19.12%**	RP7.01	Variable	DVI Survey	
187	**Footways / 100% Annually**	50% annually reported over 2 years to give 100% coverage	✓	2007_2008	18/02/2008	**24.00%**	RP8	Variable	DVI Survey	
187	**Footways / 100% Annually**	50% annually reported over 2 years to give 100% coverage	✓	2008_2009	10/03/2009	**27.00%**	RP8.01	Variable	DVI Survey	
187	**Footways / 100% Annually**	50% annually reported over 2 years to give 100% coverage	✓	2009_2010	02/07/2010	**34.00%**	RP9.01	Variable	DVI Survey	
187	**Footways / 100% Annually**	50% annually reported over 2 years to give 100% coverage	✓	2010_2011	13/06/2011	**15.00%**	RP10.01	Variable	DVI Survey	

Notes

A new network and changes in the data collection guidance have seen a dramatic fall in the BVPI value. Subsequent surveys will determine the overall condition of the network.

Appendix 2: Forward Work Programmes (Carriageway and Footway)

TABLE 1

2011 / 12 Works				
Carriageway	Location	From	To	Description
	A1139 Fletton Pkwy	Junction 2	Junction 1(west bound lane 1)	Resurface Carriageway
	Willow Hall Lane	O/S bungalow		Reshape c/w to remove dangerous dip
	A15 Glinton By-pass	Glinton R/B	Railway Bridge	Place to Place Surfacing
	A1073	A47	Lincs C C bounary	Place to Place Surfacing
	Guntons Road	School Road	No. 51	Resurface Carriageway
	Ivatt Way	Hartwell Way	Gresley Way +R/B	Resurface Carriageway
	Fulbridge Road	Marlow Grove	Paston Lane	Place to Place Surfacing
	Bus route	Oundle Road	Pauls Grove	Resurface Carriageway
	Eyebury Road	High Street	30mph boundary	Resurface Carriageway
	Lincoln Road	Mountsteven Ave	Marne Road	Resurface Carriageway
	B1443 Thorney Rd	White Post Road	Peterborough Road	Place to Place Surfacing
	Taverners Road	Bourges Boulevard	Lincoln Road	Resurface Carriageway
	A605 Oundle Road	Sugar Way	Shrewsbury Avenue	Resurface Carriageway
	B1443 Bukehorn Road	B1040	The Reaches	Place to Place Surfacing
	Bretton Way	Junction 58	Junction 17	Resurface Carriageway
	Edgerley Drain Rd	Oxney Road R/B	Empson Road	Resurface Carriageway
	Bakewell Road	Southgate Way	Milnyard Square	Resurface Carriageway
	Southgate Way	Junction 17 (A1M)	Finmere Park	Resurface Carriageway
	A1139 Fletton Pkwy	Junction 1	West bound slip off	Resurface Carriageway
	Amberley Slope	Corfe Avenue	The Steynings	Resurface Carriageway
	Reeves Way Ph 2	Norman Road	North for 320m	Resurface Carriageway
	Alexandra Rd Ph 1	Waterloo Road	Oxford Road	Resurface Carriageway
	Windmill Street	Entire length		Resurface Carriageway
	Ledbury Road	Audley Gate	Wilton Drive	Resurface Carriageway
	Alma Road	**Entire length**	**Reserve**	**Resurface Carriageway**
	Lime Tree Avenue	**Entire length**	**Reserve**	**Resurface Carriageway**

TABLE 2

2011 / 12 Works				
Carriageway Surface Treatments	Location	From	To	Description
	B1040	Entire Length		Surface Dressing
	Lincoln Road	Entire Length		Surface Dressing
	Helpston Road	Entire Length		Surface Dressing
	Peakirk Road	Entire Length		Surface Dressing
	Werrington Bridge Road	Entire Length		Surface Dressing
	Wrights Drove	Entire Length		Surface Dressing
	Maxey Road	Entire Length		Surface Dressing
	Tallington Road	Entire Length		Surface Dressing
	Walcott Road	Entire Length		Surface Dressing
	Main Street	Entire Length		Surface Dressing
	Peterborough Road	Entire Length		Surface Dressing
	Yarwell Road	Entire Length		Surface Dressing
	Princes Gardens	Entire Length		Micro Asphalt
	Park Crescent	Entire Length		Micro Asphalt
	Garton End Road	Entire Length		Micro Asphalt
	Chestnut Drive	Entire Length		Micro Asphalt
	Copper Beech Way	Entire Length		Micro Asphalt
	Storrington Way	Entire Length		Micro Asphalt
	Canterbury Road	Entire Length		Micro Asphalt

2011 / 12 Works				
Footway Slurry Seal	Location	From	To	Description
	Helpston Road	Entire Length		Footway slurry seal
	Welmore Road	Entire Length		Footway slurry seal
	Ashburn Close	Entire Length		Footway slurry seal
	Vergette Road	Entire Length		Footway slurry seal
	Walker Road	Entire Length		Footway slurry seal
	Scotts Road	Entire Length		Footway slurry seal
	Holmes Road	Entire Length		Footway slurry seal
	Neaverson Road	Entire Length		Footway slurry seal
	Grimshaw Road	Entire Length		Footway slurry seal
	Sallows Road	Entire Length		Footway slurry seal
	Chain Close	Entire Length		Footway slurry seal
	Little Close	Entire Length		Footway slurry seal
	The Crescent	Entire Length		Footway slurry seal
	New Road	Entire Length		Footway slurry seal
	Burmer Road	Entire Length		Footway slurry seal
	Belham Road	Entire Length		Footway slurry seal
	Thistlemoor Road	Entire Length		Footway slurry seal
	Stumpacre	Entire Length		Footway slurry seal
	Kirkmeadow	Entire Length		Footway slurry seal

TABLE 4

2011 / 12 Works				
Footway Re-Surfacing	Location	From	To	Description
	Clarence Road	Entire Length		Resurface Footway
	Occupation Road	Entire Length		Resurface Footway
	Craig Street	Entire Length		Resurface Footway
	St Marks Street	Entire Length		Resurface Footway
	Church Walk	Entire Length		Resurface Footway
	Reeves Way	Eastfield Road	Bishops Cl / Broad Cl	Footway Slab Replacement
	Hill Close			
	Broad Close	Entire length		
	Bishops Close	Entire length		
	Chapel Street	Conneygree Road	No.48	Footway Slab Replacement
	Sherwood Avenue	Entire length		Footway Slab Replacement
	Stanford Walk	Entire length		Footway Slab Replacement
	Lyme Walk			
	Kirby Walk			
	Denham Walk			
	Cranford Drive	Atherstone Avenue	Bretton Gate	Footway Slab Replacement
	Dudley Avenue	Entire length		Footway Slab Replacement
	Rockingham Grove			
	Chestnut Avenue	Eastern Ave	Previous schemme	Footway Slab Replacement
	Chestnut Avenue	Cerris Roadt	Western Avenue	Footway Slab Replacement
	Arbury Close	Entire length		Footway Slab Replacement
	Walcott Walk	Entire length		Footway Slab Replacement
	Eastern Avenue	Newark Avenue	Eastern Close. (Eastside)	Footway Slab Replacement

Appendix 3: Annual SCRIM Survey Process

Annual SCRIM Survey Process

Programme of Survey Identification and Works

Task	Annual Timescale	Responsibility
Survey Data		
Order Survey	March/April	PCC/ATKINS
Contractor carry out early survey	May to Mid June	WDM (Survey contractor)
Contractor carry out middle survey	Mid June to mid August	
Contractor carry out late survey	Mid August to end of September	
Survey data supplied to ATKINS	End of October	
Process data and supply NRMCS figures	End of November	ATKINS
Display overlay plans for PCC	December	
Identification		
Identify all sections • **Those that are at or below, IL with three or more, wet skid accidents in the previous three years**	January	PCC Engineer (Asset Management)/ ATKINS
Identify all sections already addresses in the next season's programme	Feb -March	
Consult Safety & Traffic Management Team as necessary to determine other minor safety improvements required	Feb -March	
Assess risk based on type and frequency of incident on any section or series of sections	Feb -March	
Include in **Forward Works Programme**	March - April	
Works		
Carry out temporary signing works	April – July	PCC/ATKINS
Carry out High Friction surfacing / surface treatment works if funding permits	May - Oct	
Carry out surfacing works if funding permits	April - March	

APPENDIX 3