DRAFT V4 10 Jan 14 - SUBJECT TO APPROVAL

Brent

Highway Asset Management Plan

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EXECUTIVE SUMMARY

Brent's Highway Asset

The highway infrastructure asset is the most visible, well-used and valuable physical asset owned by the Council. The funding for the management of this asset is under continuous scrutiny, with increasing pressure from government and the public for transparency, accountability and more efficient use of the limited resources available.

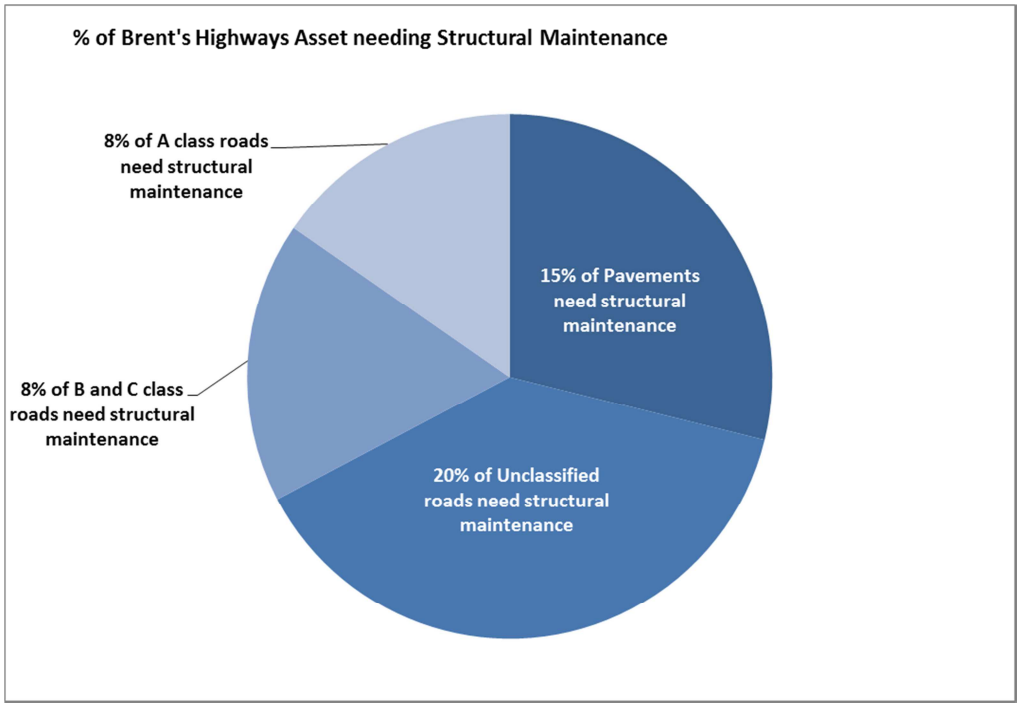
London Borough of Brent is responsible for:

- 504 km (315 miles) of roads;
- 847 km (529 miles) of pavements;
- 49 bridges and structures;
- 24,500 road gullies;
- 10,000 street trees; and
- 32,000 street lights and other illuminated street furniture.

The value of this asset is estimated at just over £1bn.

Current capital funding allows the resurfacing of approximately 8 miles of roads and 6 miles of footways every year; this means on average that we can expect roads to be resurfaced approximately every 38 yrs and footways every 84 yrs

With funding for highways maintenance being squeezed over many years, available resources have been insufficient to maintain the highway network to the level we would like. Currently the structural condition of Brent's roads is:



A fifth of Brent's residential roads and around a sixth of the most used pavements are in need of substantial maintenance.

Classified roads are in slightly better condition, but nearly one tenth of them still require structural maintenance.

As time goes on roads that are currently in good condition will deteriorate, just like any physical asset such as a house or a vehicle. To keep on top of the deterioration of our asset we must invest continually in maintenance.

We are unlikely to ever be in the position where we have enough money to maintain every road that needs work in a single year, so we have to make the best use of the resources we have to get the best results for our customers (our road users).

A New Approach for Brent

How we invest is critical to achieving the best outcome for our customers. Is the highway so poor that it might fail completely, or can it be repaired to extend its life before we have to do a full replacement? A good analogy would be to ask whether you should sand and re-paint window frames regularly, or wait until they rot and replace the whole window?

In a climate where budgets and resources are reducing, local authorities are facing significant challenges in deciding how to manage their assets effectively, including:

- Increasing public expectations for accessibility and availability of the highway network and for reliability of journey times;
- Increasing scrutiny, transparency, accountability and media exposure in delivering legal requirements, meeting stakeholder expectations and maintaining the engineering integrity of the network;
- Managing the impact of traffic growth;
- Severe financial constraints and clear messages of "more for less", "sweating the asset" and "make the most of what you have" that create a culture for making best use of existing assets; and
- A move away from new highway infrastructure and making better use of an ageing network that may require significant investment to extend its useful life.

A systematic process is therefore needed to manage the highway asset. Asset management principles deliver that systematic approach.

Asset Management is a strategic approach that enables us to make decisions over what service we want to provide and what we can achieve within our budget limits. It enables us to identify the best allocation of resources for the management, operation, preservation and enhancement of highway infrastructure to meet the needs of current

and future customers. Asset management therefore supports business decisions and provides longer term financial benefits.

Brent's Highways Asset Management Plan

Brent currently adopts the "worst-first" approach to asset management. We identify the worst condition roads and develop a one year programme of road resurfacing and reconstruction.

This is easily understood by the public and members who see a road in poor condition and will see it as the council's duty to repair it. However, years of underinvestment and "worst first" strategies have got us to the point where we have an approximately £38m backlog of maintenance.

Our current approach assumes that over 20% of our unclassified network and nearly 10% of our classified network will remain in need of repair; we are effectively treading water to maintain our current position. Our backlog of maintenance will only reduce very gradually, and may even increase if funding levels are reduced.

We propose to increase the life span of our roads and reduce the percentage of roads in need of repair by balancing the "worst first' approach with a parallel programme of preventative maintenance. This will form the basis of our Highways Asset Management Plan. It will mean our annual maintenance programme will be divided between two distinct programmes of work;

1. Major resurfacing schemes; and
2. Preventative maintenance schemes.

We will develop a 2 to 3 year work programme of both major resurfacing and preventative maintenance from 2014/15 onwards. This will be the first step towards long-term programme development. To maximise the benefits a 10 year programme period is recommended. This is an aspiration we will work towards.

During 2014/15 we will introduce and implement an extended multi-year programme, with a view to further extending that programme as we start to develop a more comprehensive and refined picture of our asset condition.

The key question is how we will decide which roads should have preventative maintenance treatment and which we need to undertake major resurfacing works on?

We will initially utilise condition surveys to determine which roads will be suitable for preventative maintenance. For the 2015/16 programme and beyond, we will take account of a range of factors other than road condition in our decision making, such as corporate priorities, road safety records, road usage levels, bus routes, proximity to schools & colleges and footfall.

We already use a suite of performance indicators to monitor whether we are meeting required levels of service and we will continue to use these indicators to identify the success of the HAMP process.

HAMP Investment Plan

It is proposed to invest around 30% of the carriageway resurfacing budget in preventative maintenance over the next two to three years. This translates to around £420k per annum. 70% (around £1m) would be spent on major resurfacing works.

This assumes that the 2014/15 and 2015/16 budgets are maintained at £3.5m per year, as in 2013/14. If there is any reduction or increase in funding over coming years, the percentage splits will be applied to revised budgets.

The draft 2015/2016 programme will be reviewed and amended at the end of 2015 in light of condition survey data available at that time, and following application of more detailed prioritisation criteria and life cycle planning for individual road sections.

Summary of Benefits

The HAMP will deliver better value for money through adoption of a sensible and forward thinking maintenance plan. Our customers will see more miles of road maintained each year and have greater visibility as to the relative status of their roads. We will deliver more on the ground and help to meet many of our corporate and strategic transport objectives by doing so.

Next Steps

This HAMP is a flexible document, which will change over time, to suit evolving budgets and policies, and to reflect our progress in implementing whole life planning principles. A phased approach towards the development of the HAMP is proposed. Initially it will focus on the core highway assets (road resurfacing) but will subsequently evolve to cover the full range of assets and activities.

During 2014/15 we will further develop our approach to highways asset management by applying detailed assessment criteria agreed by the Executive and by expanding the scope of the HAMP to consider how the above assets could be managed using a whole-life planning approach.

It is proposed to bring a revised HAMP and long term programme to the Executive in early 2015.

1.0 Highways Asset Management

1.1 What is an Asset?

Highway assets include:

- The road surface and underlying structure
- The pavements
- Street trees
- Lighting Columns
- Bollards
- Drainage Gullies
- Street furniture
- Other highway assets include bridges, culverts, and drainage pipes that aren't necessarily visible to the highway user

London Borough of Brent is responsible for highway assets worth over £1bn, including:

- 504 km (315 miles) of roads;
- 847 km (529 miles) of pavements;
- 49 bridges and structures;
- 24,500 road gullies;
- 10,000 street trees; and
- 32,000 street lights and other illuminated street furniture.

Brent's Highway Infrastructure is one of the boroughs most valuable assets and it's therefore crucial that it's managed efficiently.

1.2 Why use Asset Management?

Like most Highway authorities, Brent are continuing to face significant and increasing challenges of insufficient budgets to "keep up" with the deterioration of our roads. We therefore need to manage our highway assets as efficiently and effectively as possible, i.e. to get the best possible result with the funding we have available.

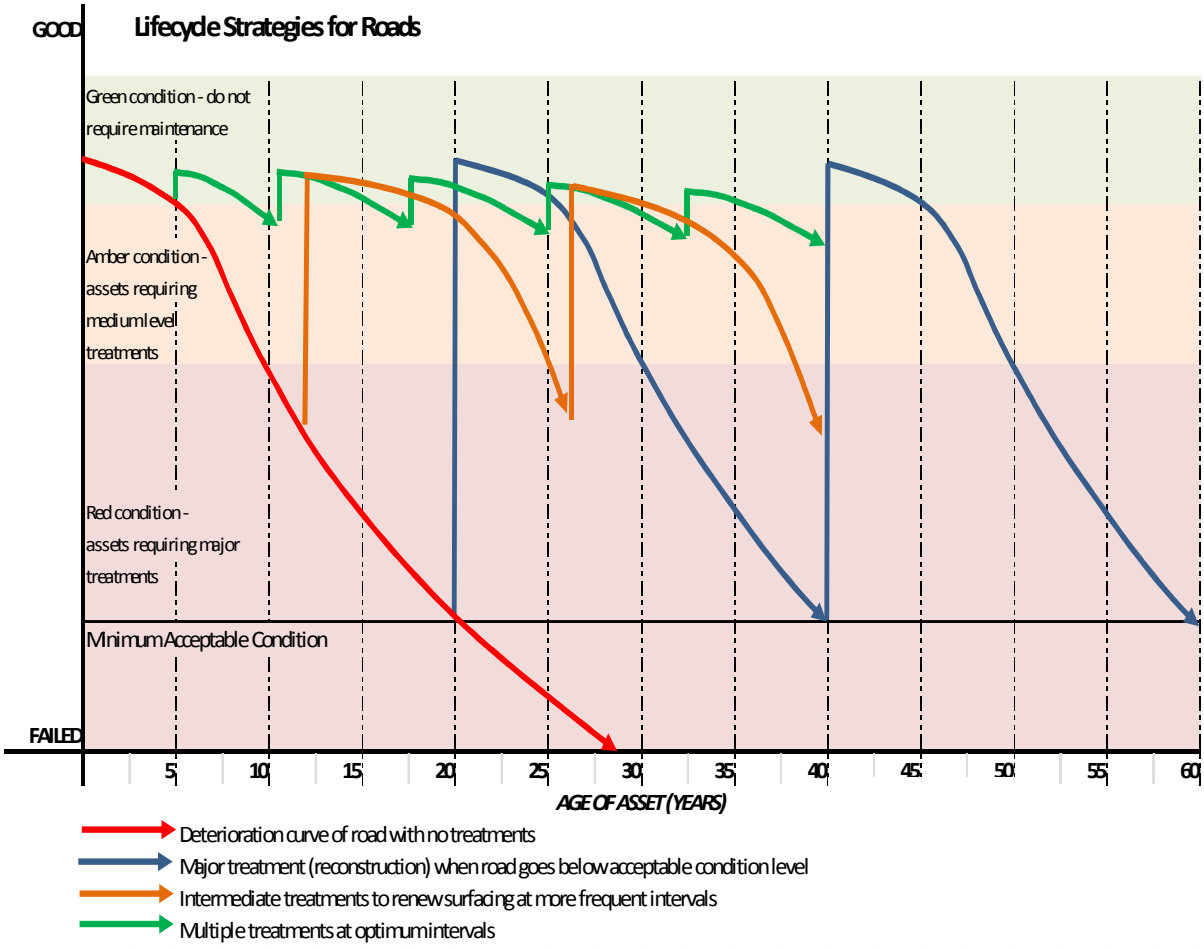
Brent's ageing highway network has an increasing backlog of required maintenance and renewal estimated at £38m. These challenges are exacerbated by increasing public expectations and growing volumes of users.

Asset management provides a structured and objective approach to the management and maintenance of Brent's assets. It is a performance-based approach to setting levels of service that takes account of what is important to customers, such as minimising disruption, improving the street scene and contributing to safety.

As time goes on, central government is increasingly stressing the need for objective asset management planning, and there are likely to be strong links to funding provision for authorities that adopt asset management planning principles.

1.3 Asset Management Principles

Essentially asset management is 'looking into the future' of the whole life of a particular asset. The following graph illustrates this principle:



The red line shows how a road deteriorates from when it is constructed.

- A road's total life span is around 25 to 30 years;
- It deteriorates to the point where it needs surface reconstruction after around 10 years; and
- It reaches an unacceptable condition and needs full reconstruction after around 20 years.

Costs for major resurfacing works range from £170,000 per km for replacement of the top 100mm of the road surface to £90,000 per km for replacement of the surface layer (wearing course). Costs for preventative maintenance range from £50,000 per km for thin surfacing to £35,000 per km for surface dressing.

If you wait and reconstruct the road in full after 20 years it returns to its "new" condition and begins to deteriorate again over the next 20 years – this is the **Blue Line** approach shown on the graph. This is known as the "worst first" method, where you invest all funding into roads that are in a poor state of repair and need full or partial reconstruction.

If you resurface the road at the point where it requires major treatment – the **Orange Line** approach - you would resurface and repair every 10 to 15 years at a lesser cost of around £90k per km.

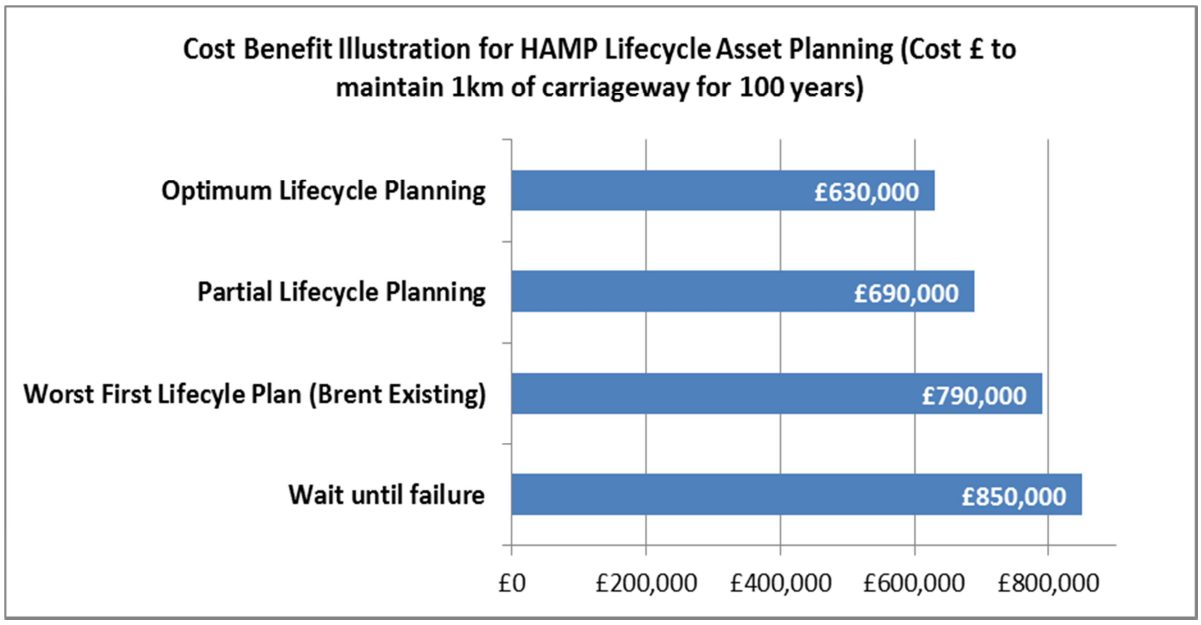
The **Green Line** approach shows how an optimum asset management strategy works. It involves a combination of regular thin surface repairs, which can range from around £35k per km for surface dressing to around £50k per km for thin surfacing.

A suitable analogy would be wooden window frame, which you can either leave to rot and replace after 5 to 10 years, or sand and repaint every 2 years or so, extending the life of the frame considerably.

This approach has cost benefits in terms of the whole life investment costs. The following example shows how the maintenance of a 1km section of road can be planned in different ways.

Lifecycle planning cost model examples		**Wait until failure**	**Worst First Lifecycle Plan (Brent Existing)**	**Partial Lifecycle Planning**	**Optimum Lifecycle Planning**
AGE OF ASSET (YEARS)	5				£35,000
	10		£90,000	£50,000	£35,000
	15				
	20	£170,000		£50,000	£90,000
	25		£90,000		
	30			£50,000	£35,000
	35				£35,000
	40	£170,000	£170,000	£170,000	
	45				£90,000
	50			£50,000	
	55		£90,000		£35,000
	60	£170,000		£50,000	
	65				£35,000
	70		£90,000		
	75			£170,000	£170,000
	80	£170,000	£170,000		
	85			£50,000	£35,000
	90				
	95		£90,000	£50,000	£35,000
	100	£170,000			
TOTAL COSTS		**£850,000**	**£790,000**	**£690,000**	**£630,000**

Costs therefore decrease notably when lifecycle planning methods are introduced:



Significant savings could therefore be realised over time by adopting lifecycle planning over the "worst first" method.

1.4 Lifecycle Planning for Brent's Assets

The lifecycle planning strategies shown in Section 1.2 are not fixed options. They do however illustrate how a variety of maintenance plans can be applied to the management of highway assets.

Before optimum lifecycle strategies can be developed for Brent it will be necessary to determine the baseline condition of all of our highway assets along with the likely deterioration of those assets given their age, usage and sub-structures (i.e. the surface they were built on).

It should be noted that the "worst-first" approach to asset management is easily understood by the public and members, who identify a road in poor condition and will see it as the council's duty to repair it. They understand that simply fixing individual potholes is not as good a solution both aesthetically and in terms of a cost effective strategy as carrying out a 'proper' repair. In the highways sector however, years of underinvestment and "worst first" strategies have got us to the point where we don't have the money to repair everything.

Roads are constructed in layers, with a sub-base, further asphalt "base" courses (layers) and a top "wearing course" layer, which is relatively thin and is of a higher quality. It is the wearing course that protects against skidding and prevents water getting into the sub-surface road layers and damaging them.

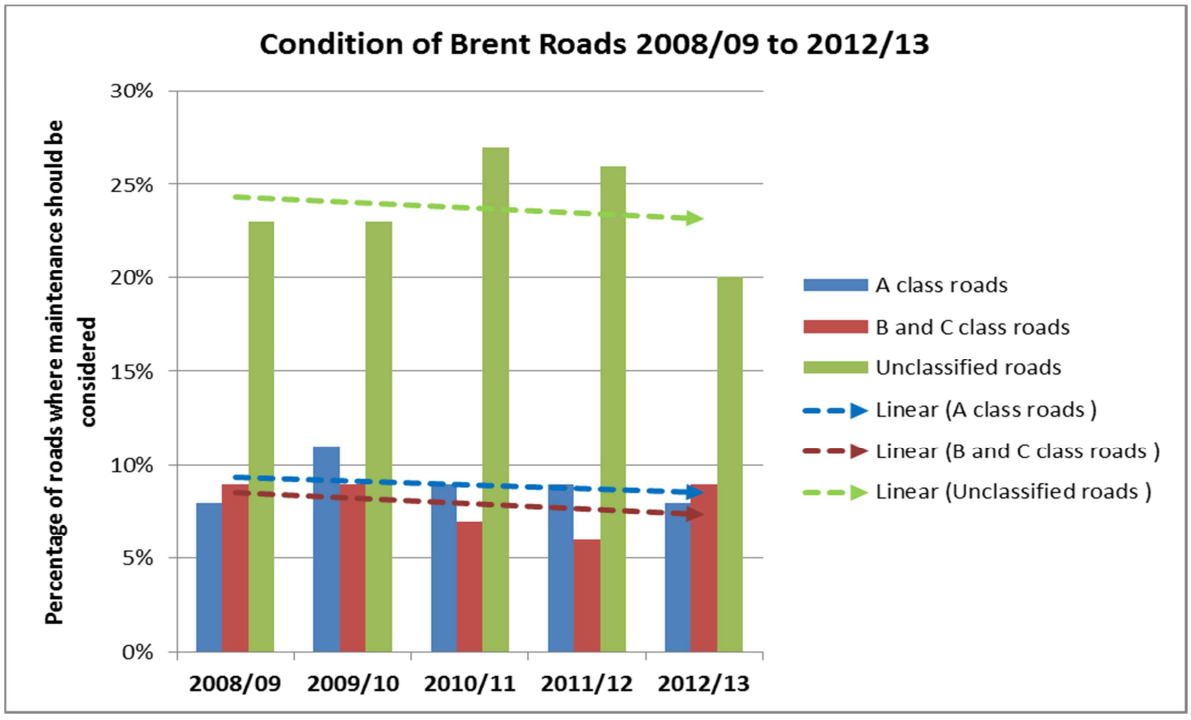
The structure of the road is therefore all of the layers that make up that road, but particularly the lower layers, which must be in good condition to keep the road level and safe. There are therefore two broad categories of road that need repair:

A. Those that are structurally unsound, i.e. where the sub-surface is collapsing causing major slumps and tell-tale surface cracking – these need major resurfacing works at a cost of around £90 to £170k per km, depending on the level of damage; or
B. Those where the surface is aging and brittle and needs to be water sealed and/or needs improved skid resistance – these can be given a preventative treatment at a cost of around £35 to £50k per km by using surface dressing or thin surfacing.

In the latter case, the road condition beneath the surface may actually be good, but to the road user's perspective these are often considered to be the poorest roads.

We currently assess the condition of our roads through annual condition surveys. These surveys indicate where the road is structurally unsound as well as where the surface quality is poor.

Despite the general squeeze on funding in recent years, current funding appears to be sufficient to maintain roads and footways in a relatively steady state, with the trend showing a very gradual improvement in road condition over the past 5 years:



Although we can maintain road condition in a relatively stable state, we are unable to significantly reduce the estimated £38m backlog in asset maintenance. Our current approach therefore assumes that over 20% of our unclassified network and nearly 10% of our classified network will remain in need of repair; a backlog of maintenance that will only reduce very gradually and which may even increase if funding levels are further cut.

We propose to increase the life span of our roads and reduce the percentage of roads in need of repair by moving away from the “worst first’ approach currently adopted and implementing a programme of preventative maintenance. This will form the basis of our Highways Asset Management Plan.

2.0 Brent's Highway Asset Management Plan

2.1 Supporting Corporate Objectives and Aims

This Highway Asset Management Plan (HAMP) takes the strategic aims and objectives from Corporate and Community Strategies, the Local Implementation Plan (LIP) and departmental plans and links them with legal requirements and best practice. **Appendix B** illustrates how the plan will support and assist to deliver those strategic objectives.

2.2 Proposed Approach

We will move away from our historic method of delivering reactive "worst first" highway maintenance programmes so that we can begin to apply whole-life planning principles. This will mean that:

1. We will identify roads that are currently in very poor condition and are in need of structural repair for full resurfacing / reconstruction; and
2. We will identify roads that have poor surface / ride quality but which are structurally sound and which can therefore be treated with lower-cost thin surfacing to extend their working lives.

Initially we propose to implement Partial Lifecycle Planning, involving development of a programme of thin surfacing treatments on roads that are not necessarily in the worst condition, but where investment now will extend their lifecycles and reduce costs in the long-term. There are other advantages in adopting this approach:

- It will enable us to deliver longer term planning for budgetary purposes and for planning of works programmes; and
- It will deliver a more efficient and cost effective highways service with managed and intelligent stewardship of the highways asset.

We will increase the life span of our roads by identifying the point at which we can refresh the road surface to prevent more serious defects developing. On these roads we will replace the thin surface layer and fix areas where the road structure is damaged.

This means that our annual maintenance programme will be divided between two distinct programmes of work;

1. Reconstruction schemes and
2. Preventative maintenance schemes.

The method by which we will select road reconstruction or preventative maintenance schemes is described in Section 2.2, along with our proposed method of dividing our current capital maintenance budget.

We initially propose to develop a 2 to 3 year work programme of both structural and preventative maintenance from 2014/15 onwards. This will be the first step towards long-term programme development, as to maximise the benefits of highways asset management the programme should cover the maximum period possible. At least a 10 year period is recommended; and this is an aspiration we will work towards. Only by projecting forward the anticipated need over a long period of time can the best whole life options be identified.

During 2014/15 we will therefore introduce and implement an extended multi-year programme, with a view to further extending that programme as we start to develop a more comprehensive and refined picture of our asset condition through assessment of each road in terms of its age, condition, usage and hence its "whole-life" cycle.

As thin surface treatments are cheaper than full resurfacing, we estimate that up to 2 more miles of roads can be treated each year. It should therefore be noted that customers will see more miles of road maintained each year as a result of the adoption of whole life planning principles, although many of our worst performing roads may not be maintained whilst we begin to invest in preventative treatments.

Our footway programme (pavement resurfacing) will not be impacted by this approach as Brent's footway asset is largely constructed in paving slabs. Preventative maintenance for footway repairs is therefore limited to reactive defect repairs until such time as a footway deteriorates so badly, and requires ongoing and continuous repair, that it must be fully replaced. Thin surfacing treatments cannot be used unless we move away from the use of paving slabs to introduce asphalt surfacing.

2.3 Prioritisation of Works Programmes

The key question is how we will decide which roads should have preventative maintenance treatment and which we need to undertake full structural repairs on.

We have a backlog of around £38m of highway maintenance works; therefore we need to get the balance right between investment in replacement and investment in preventative works.

At present, using the "worst first" approach, our maintenance budgets are prioritised and allocated based on condition surveys for the following road hierarchies:

1) **A-Road (Principal Road)** maintenance is prioritised on the basis of London-wide condition surveys commissioned by TfL (note that Principal Road maintenance is funded by Transport for London. It is not proposed to apply preventative maintenance principles to the principal road network as the programmes need to be developed and agreed with TfL, who do not currently adopt whole life planning principles).

2) **B & C Roads –** Roads in need of maintenance are identified and prioritised from the results of an annual independent network condition survey along with a process of engineering inspections and assessments.

3) **Unclassified Roads –** Brent undertakes network condition surveys annually for a proportion of the network, with full coverage obtained every 3 to 4 years. This process identifies sections of the unclassified road network requiring improvement.

The annual network condition surveys undertaken for the above road hierarchies generate condition scores for the road surface, structure and edge defects. These scores are combined into an overall structural condition score.

Under the HAMP process, we will initially utilise condition surveys to determine which roads will be suitable for preventative maintenance.

Roads with high structural scores will be prioritised for the major resurfacing scheme programme. We will then list roads with low structural defect scores, i.e. with few underlying structural problems but high levels of surface defects. These roads will form a first draft preventative maintenance programme for "Thin Surfacing" treatments.

For 2014/15 we will therefore develop a draft programme through ranking road condition surveys and application of local knowledge of key corridors, usage levels and road functions.

For the 2015/16 programme and beyond, as part of the HAMP programme development process, we will take account of a range of factors other than road condition in our decision making, such as corporate priorities, road safety records, road usage levels, bus routes, proximity to schools and colleges, footfall etc.

2.3.1 Prioritising Major Resurfacing / Preventative Maintenance

From 2015/16 onwards we will adopt the maintenance programme prioritisation criteria described in **Appendix A**, where priority is determined by allocating scores under various headings. In summary, this process will involve assessment of the following:

- ✓ **Carriageway Condition** – we will allocate the highest scores based on condition survey data obtained historically and part-refreshed annually.
- ✓ **Network Hierarchy** - rather than using classifications we will adopt use of a network hierarchy based on highways maintenance needs; which will give us the opportunity to take account of the actual highway maintenance needs of roads, which can be greater (or less) than their road classification would otherwise indicate.
- ✓ **Risk** – we will prioritise potential risk to public and take account of varying rates of deterioration between safety inspection visits. We will also assess collision history, in particular information regarding numbers of collisions involving loss of control or skids.
- ✓ **Value for Money** - we will aim to split the budget between preventative maintenance schemes and structural based schemes in order to achieve a cost

effective balance of preserving roads that have not yet fully deteriorated and fixing those that have.

We may deviate from the absolute priority order where, for instance, a section of road in relatively good condition may be resurfaced if it is on a street where the rest of the road needs maintenance and it would be illogical, or impractical, not to resurface the whole street.

We will also take into account any roads that are nominated for inclusion i by Councillors and/or maintenance engineers.

2.3.2 Prioritising Footway Resurfacing

It has been noted that our footway programme (pavement resurfacing) will not use preventative maintenance techniques as these cannot be applied to slab surfacing, which is predominant within Brent. However, our current practice when we replace footways is to maximise their lifespan by strengthening footway edges to reduce the likelihood of vehicle overrun damage.

We wish to ensure that our footway maintenance programme is developed in a transparent and objective manner therefore prioritisation for 2014/15 will be carried out using the results of condition surveys of the high usage network plus survey results for those footways which have been nominated for inclusion in the survey programme by Councillors and/or maintenance engineers.

From 2015/16 we therefore propose to adopt a prioritisation process for footway schemes as set out in Appendix A and as summarised below:

This process will involve assessment of the following:

- ✓ **Footway Condition** – we will allocate the highest scores based on footway network surveys and engineers visual assessment surveys.
- ✓ **Network Hierarchy –** this will be defined by footfall, location and function and will fall into one of four categories – Cat 1 to Cat 4, with Cat 1 being a very busy town centre area.
- ✓ **Risk** – we will assess risk by taking account of rates of deterioration through numbers of defects recorded and repaired.
- ✓ **Value for Money -** the budget will not be split between preventative maintenance and (structural) needs based schemes as the overwhelming majority of Brent's footways are concrete slabbed and do not deteriorate in the same way as bituminous surfaces do

2.3.3 Prioritising Drainage and Flood Schemes

Brent is developing a detailed Flood Risk Strategy for publication in 2015. This document will set out the key issues and a long term plan for Brent to manage surface drainage and

address flooding / wet-spot issues. In the interim a prioritisation process will be adopted for drainage and flood alleviation schemes as shown in Appendix A.

There are approximately 24,500 road gullies in the borough. These are being cleaned as part of a cyclic maintenance programme procured through the new London Highways Alliance Contract (LoHAC). The cleaning cycle includes:

- 3,300 high-priority (regularly blocking) gullies cleaned every six months;
- 1,300 medium-priority gullies cleaned each year; and
- 14,100 gullies cleaned every eighteen months as part of a rolling programme.

There are occasions where cleaning will not resolve surface water flooding problems and gullies and drainage pipes will require replacement. To determine relative priorities for flood alleviation schemes scores will be allocated based on the hierarchy of the impacted road along with a variety of other factors, including:

- ✓ **Risk** – whether there have been any collisions or injuries as a result of flooding events;
- ✓ **Property Impacts** – whether a property has suffered internal flooding; one off events or recurring.
- ✓ **Social and Economic Impacts** – whether flooding impacts on critical services or infrastructure, including key footways; and
- ✓ **Miscellaneous Factors** – such as foul sewage discharge, emergency services concerns, claims costs, exceptional frequency levels.

2.3.4 Prioritising Structural Maintenance

The Council are responsible for 53 highway structures, including 38 bridges and; 15 culverts. The majority of Brent highway structures are small features spanning brooks.

Prioritisation for maintenance of structures is administered through the London Bridge Engineering Group (LoBEG). Funding for bridge maintenance is allocated by TfL through LoBEG, and they are currently reviewing the pan-London programme prior to confirming funding in early 2014.

Brent will undertake regular inspections of all highway structures and report the outcomes of those surveys to LoBEG for assessment against all other structural assessments within the Region and wider London area.

2.4 Managing and Monitoring HAMP Performance

Performance Measures will be used to monitor whether we are meeting required levels of service through the HAMP process.

Performance Indicators (PI) have already been defined and are reported upon both monthly and quarterly, as shown in **Appendix C**. These PIs comprise a mixture of corporate and national targets.

Previously used national indicators for highway condition allow comparisons with other highway authorities as well as identifying trends. Therefore, even though many of the PI are no longer reported, they form a good measurement tool.

3.0 HAMP Financial Plans 2014/15 onwards and Next Steps

3.1 2014/15 Budget Split

The 2014/15 to 2016/17 capital programme will apply asset management principles by introducing a programme of preventative maintenance alongside a major resurfacing scheme programme.

It is proposed to adopt the following funding split between major resurfacing and preventative maintenance over the next two to three years:

Percentage Allocation of Highways Capital Maintenance Budget	**% of Brent capital Budget**		
	2013/14	**2014/15 to 2016/17 provisional**	**Value (£m)**
Footways			
Major footway improvements	44%	44%	1,525
Other footway improvements	4%	4%	150
Public realm improvements	3%	3%	125
Sub-total	**51%**	**51%**	**1,800**
Carriageways			
Major resurfacing unclassified roads	38%	28%[1]	980
Preventative maintenance works	0	12%[2]	420
Major resurfacing of B & C Class roads	4%	4%	150
Major resurfacing of short sections	4%	4%	150
Sub-total	**46%**	**48%**	**1,700**
Contingencies for TfL schemes	3%	0[3]	
Total	**100%**	**100%**	**3,500**

This assumes that the 2014/15 and 2015/16 budgets are maintained at £3.5m pa, as 2013/14. If there is any reduction or increase in funding over coming years, the percentage splits shown will be applied to revised budgets.

[1] Represents c70% of 1.7m carriageway resurfacing budget
[2] Represents c30% of 1.7m carriageway resurfacing budget
[3] Contingencies to be managed within given budgets from 14/15 onwards

The draft 2015/2016 programme will be reviewed and amended at the end of 2015 in light of condition survey data available at that time, and following application of prioritisation criteria described below.

Initially preventative maintenance investment will represent 30% of the total annual budget for carriageway resurfacing, which will be in the region of £400k assuming a £3.5m pa capital maintenance budget. Approximately £1m will be invested in full resurfacing of the worst roads identified by condition surveys.

This 70/30 split has been calculated be assessing the proportion of the roads network requiring preventative maintenance against that proportion requiring major resurfacing works.

It will be adopted for the 2014/15 financial year and is subject to review as the HAMP process if refined and expanded to incorporate prioritisation processes described in Section 2.0 and Appendix A.

3.2 Next Steps - Future HAMP Development

This HAMP is a flexible document, which will change over time, to suit evolving budgets and policies, and to reflect our progress in implementing whole life planning principles.

A phased approach towards the development of the HAMP is proposed. Initially the HAMP will focus on the core highway assets (road resurfacing) but will subsequently evolve to cover the full range of assets and activities, such as car parks, public transport infrastructure, travel awareness & utility. Assets to be incorporated within a comprehensive HAMP will include:

- Roads;
- Carriageways, Edge of carriageway (kerbs, channels etc) Paved central reserves & islands;
- Safety Fences, Road markings/studs, Traffic Calming and Road Humps, Pedestrian Crossings (Zebra), Roundabouts, Crossovers, Anti-skid surface;
- Footways & Cycle Routes;
- Footway Surface, Cycleway Surface;
- Bridges, Culverts >1.5m, Cuttings & Embankments, Footbridges;
- Drainage - Gullies, Culverts, Piped Highway Drainage, Surface boxes & ironwork;
- Public Right of Way;
- Footpaths, PROW Structures, Signs, Gates;
- Street Lighting;
- Lamp Columns, Illuminated signs;
- Grass Verges/Trees;
- Signs & Other Street Furniture;
- Non-illuminated signs & parking signs, Pedestrian guardrails, Bollards & removable bollards; and
- Benches, Street nameplates.

During 2014/15 we will further develop our approach to highways asset management by applying detailed assessment criteria agreed by the Executive and by expanding the scope of the HAMP to consider how the above assets could be managed using a whole-life planning approach.

The following table describes the actions that will be taken to further develop and refine Brent's asset management strategy:

Next Steps	Timescale	Comments
Develop detailed maintenance programme for 14/15 onwards	Feb 14	Report to Executive in February 14
Identify data gaps and agree performance framework	Mar 14	Identify what we need to fully understand our highway asset condition and refine process by which we identify the split between preventative and structural maintenance in the long term.
Identify other asset types that could benefit from whole life planning	Jul 14	Set up working groups with asset owners. Review and extend scope of HAMP as required.
Draw up" Lifecycle Management Plans"	Oct 14	Prepare lifecycle plans for the network to ensure that the asset delivers the requisite level of service over its full expected life at the minimum cost
Develop and apply detailed prioritisation criteria	Oct 14	Develop long list of all roads and road sections in Brent and apply prioritisation matrix and criteria as described in Appendix A.
Update HAMP	Nov 14	Update HAMP document to incorporate analyses undertaken during 2014 along with details of other assets to be included within Plan.
Develop long-term maintenance programme	Nov 14	Prepare long-term HAMP maintenance programme
Annual review	Feb 15	Prepare progress report for Executive and report proposals for long-term programme development.

Appendix A – Maintenance Programme Prioritisation

The following illustrates how we will decide which roads we will prioritise for our long term works programmes:

Carriageway Resurfacing

Highway Maintenance/Improvement Issues

Condition	Score
Road Condition Index (RCI) [A,B,C Network]	Max 200
Coarse Visual Inspection (CVI) [Unclassified Network]	Max 200
Engineers Visual Assessment	Max 278

Network Hierarchy

Hierarchy of road - Highway Maintenance Network	Score
HMN 1	100
HMN2	100
HMN3	50
HMN4a	25
HMN4b	10

Currently road hierarchy is taken into account in capital prioritisation by using the road classification of A, B, C roads (the classified road network) and U roads (the unclassified road network). "Well Maintained Highways" advocates the use of a network hierarchy based on highways maintenance needs; in practice, often the hierarchies mirror each other but the Highway Maintenance Network hierarchy gives us the opportunity to reflect the actual highway maintenance needs of roads which can be greater (or less) than their road classification would otherwise indicate.

Risk

Prioritise potential risk to public and take account of varying rates of deterioration between safety inspection visits

Risk	Score
SCRIM (surface skid resistance surveys)	100
Skid Accidents	40
Claims history	100
Number of reactive gang visits to repair pothole defects	Max 100*

Value for Money

We will aim to split the budget will ideally be split between preventative maintenance schemes and structural based schemes in order to achieve a cost effective balance of preserving roads that have not yet fully deteriorated and fixing those that have.

As is the case now, we will deviate from the absolute priority order where for instance, a section of road in relatively good condition may be resurfaced if it is on a street where the

rest of the road needs doing and it would look odd, or be impractical, not to resurface the whole street.

Footway Resurfacing

Maintenance/Improvement Issues

Condition	Score
Footway Network Survey (FNS)	Max 200
Engineers Visual Assessment	Max 200

Network Hierarchy

Hierarchy of footway- Highway Maintenance Network	Score
Footway Cat 1	100
Footway Cat 2	50
Footway Cat 3	25
Footway Cat 4	10

Risk
Prioritise potential risk to public and take account of varying rates of deterioration between HSI visits

Risk	Score
Claims history	100
Footway construction defects recorded 1-5	10
Footway construction defects recorded 6-20	25
Footway construction defects recorded 21-50	50
Footway construction defects recorded 51-100	100

Value for Money
Budget will not be split between preventative maintenance and (structural) needs based schemes. The overwhelming majority of Brent's footways are concrete slabbed. They do not deteriorate in the same way as bituminous surfaces do

Drainage Scheme Prioritisation

Highways Maintenance/Improvement Issues
N/A for Wetspots – Drainage Assets often unknown

Network Hierarchy (Only applies to Highway wetspots with a status of "Current")

Hierarchy of Road	Points	Score Type
HMN 1	40	S
HMN 2	20	S
HMN 3	10	S
HMN 4a	5	S
HMN 4b	5	S

S = Single: one time score per Wetspot
C = Cumulative: multiple scores allowed per wetspot
Estimated Max score = 200

Risk (Applies to all wetspots)

Safety	Points	Score Type
Confirmed injury due to/exacerbated by wetspot	150	S
Confirmed accident due to/exacerbated by wetspot	30	S
High Risk of Accident	15	S
Property flood	**Points**	**Score Type**
Internal Property Flood	35	C
Recurring Internal Property Flood	50	C
Single External Property Flood	5	S
Multiple External Property Floods	10	S
Involvement of vulnerable person(s) with internal property flood	30	S
Social & Economic impact	**Points**	**Score Type**
Affects Access to/Functionality of Critical Services or Infrastructure	50	S
Major Economic or Social Impact (State Reason)	30	S
Causes major congestion and/or restricts access to schools	15	S
Complete flooding of footways	5	S

Miscellaneous	Points	Score Type
Foul Sewage Surcharge	30	S
Report of Safety Issue from Emergency Services	30	S
Flooding persists for a significant time after rainfall has stopped (Y/N)	20/1	S
Claims/Excessive cost on callouts	20	S
Exceptionally Frequent Flooding (To be agreed at annual meetings)	Total score X 1.5	Multiplier

Value for Money

The budget will used prioritised needs based schemes and more minor schemes that could prevent more significant work being required later on.

Appendix B – Links to Corporate Strategy and Objectives

Brent Council's Corporate Strategy 2010-2014 is designed to drive forward service excellence, urban regeneration and community cohesion. Through the priorities detailed below LBB is focused on enhancing the quality of life for everyone who lives or works in Brent.

The council's corporate strategy has been developed in line with the community strategy commitments and is designed to support its values by improving service excellence, urban regeneration and community cohesion. It is focused on enhancing the quality of life for everyone who lives or works in Brent.

Brent's Corporate Priorities have been developed following detailed discussions with local communities, service users and partners in the public, private and voluntary sectors. They reflect the issues that are of most concern to local residents and regularly feature in consultation findings and Area Consultative Forums.

The Corporate Strategy Report, "Brent – Our Future 2010 – 2014". The report details those issues and are summarised the following:

One Borough - Creating a sustainable built environment that drives economic regeneration and reduces poverty, inequality & exclusion

One Community - Providing excellent public services which enable people to achieve their full potential, promote community cohesion and improve our quality of life

One Council - Improving services for residents by working with our partners to deliver local priorities more effectively and achieve greater value for money from public resources

Brent's Corporate Priorities have been endorsed by the borough-wide partnership – the Brent Local Strategic Partnership. This partnership has adopted the Brent Our Future 2010-2014 as the framework for our collaborative work over the next four years. These three priorities underpin our recently signed Local Area Agreement (LAA). The LAA is an agreement between the council, local partners and the government on the local priorities for joint-working within the borough. The council will play an important role in leading the Brent Local Strategic Partnership, delivering real improvements with our partners for our residents.

Step 2 – Identify Service Objectives

The following step is to identify a set of meaningful service objectives for Brent.

For this HAMP, service objectives were identified during a workshop with the Asset Management Steering Group, Key Stake holders and Members.

Service Objectives identified for Brent are:

- Provide a safe street environment
- Quality of service & Value for Money
- Availability & Accessibility of the Street Network
- Quality of Street Scene
- Sustainability
- Improve Customer Service/Customer Charter

A proposed definition or coverage of these service objectives is presented below:

Provide a safe street environment

This Level of Service will ensure and improve the safety of all users, reduce the number and risk of accidents and ensure new schemes contribute to crime reduction.

This service level promotes street environment that is safe for all users in terms of both minimising the likelihood of being involved in an accident and personal safety and security.

Quality of service & Value for Money

This Level of Service measures our responsiveness and our overall performance in delivering our services.

This Level of Service will aim to improve the economy and efficiency of service delivery by adopting an Asset Management approach that provides Value for Money.

Availability & Accessibility of the Street Network

This level of service reflects the effectiveness of the street network in as a means of transport for all users, and the effectiveness by which alternative means of transport are promoted.

This Level of Service reflects the commitment to provide fair access for all customers to the services provided by LB Brent (Highway & Transport Delivery and Safer Streets Units for example) through the provision of facilities for disabled people at pedestrian crossings.

This Level of Service will ensure and improve network availability for all users, including the need for servicing and delivery and availability of space for essential users. Ensure and improve accessibility to services for all users.

Quality of Street Scene

This Level of Service will aim to improve the quality of the streetscape and physical environment and maintain in a good state of repair

This service level is a reflection of the overall appearance and quality of the street environment to users and residents and to local businesses.

Sustainability

This Level of Service represents the ability to meet the needs of the present without compromising the ability of future generations to meet their needs by adopting a whole life approach that considers and compares alternative strategies, e.g. recycling materials, energy reduction, proactive maintenance and distribution of goods and services

This Level of Service will promote and encourage more sustainable forms of transport, e. g. walking, cycling and buses, and promote developments that reduce the need to travel.

Improve customer service

This Level of Service will improve customer satisfaction with the service and improve consultations and feedback with customers, respond more effectively to enquiries and complaints and involve customers in decisions where appropriate

This service level recognises that the provision of information to the public is an important part of our role.

Brent is committed to providing quality public services and seeks to ensure that it provides value for money and efficiency in all areas. Brent has implemented a Customer Charter for Brent Planning Service.

Step 3 – The link between corporate priorities and customer expectations with service objectives

The next step is to link the Corporate Priorities and Customer Expectations with the Service Objectives identified.

Link with Corporate Priorities

Corporate priorities were defined following extensive consultation and local needs analysis. Brent is committed to ensuring that the wishes of the people of Brent are delivered. Services and initiatives are delivered ever more in partnership with other public agencies and private and voluntary sector organisations.

Discussions and opinions were challenged by interactive exercises during a workshop seeking Officers views on how strongly service objectives contribute to Corporate Priorities. Key levels of contribution were described as High, Medium, Low or Not Applicable.

Table 5.1: Contribution of Levels of Service to London Borough of Brent Executive Priorities shows the level of contribution that each service objective makes to the Community Strategy Priorities.

Officers focus their priorities in promoting a road environment that is safe for all users in terms of both minimising the likelihood of being involved in an accident, personal safety and security and providing a service based on good condition and structural integrity of the different elements of the highway network infrastructure, showing commitment to provide fair access for all customers to the services provided by LB Brent.

The top three service objectives are:

- Provide a safe street environment
- Quality of Service & Value for Money
- Availability & Accessibility of the Street Network

Link with Customer Expectations

The council has conducted a residents' attitude survey at least once every three years since 1990 and it has been our key mechanism for measuring resident perception of the council and services it provides. Brent residents have given a very public vote of confidence to Brent Council in the 2009 Brent Residents Attitude Survey. In an independent survey conducted by Ipsos MORI, more than 2240 local people were asked for their views about the council and its services. The findings provided Brent with an accurate picture of the priorities and satisfaction of residents to inform our development of the new Corporate Strategy 2010-2014. .

The services that residents said were priorities for improvement, in order of importance, are listed below:

- Providing more activities for teenagers
- Road & Footway Repairs
- Street Cleanliness
- Reducing traffic congestion
- Reducing levels of crime
- Improving Road and pavement repairs

Step 4 – Define desired Levels of Service

Levels of Service are composite indicators that reflect the social, environmental and economic goals of the community and therefore describe the quality of services provided by the highway asset for the benefit of the customers.

Determining desired levels can be seen as determining 'outputs'. It is essential that they accurately reflect the service needs and aspirations of stakeholders rather than only perceived needs or best practice in an engineering sense. It is important to remember that the outputs must reflect the needs and priorities of customers and will not replace engineering judgement, when required.

Levels of Service have been identified to deliver high customer satisfaction, grouped in order of priority for service objectives:

Provide a Safe Street Environment

- Brent will make travel easier and safer for motorists, pedestrians, cyclists and people with disability and will seek to minimise accidents.
- Brent will provide good street lighting for safety, navigation, security and walking, by means of improving street lighting and CCTV. Where it may present a risk, we will repair faulty street lights as a matter of urgency.
- Brent will target for a road network with low crash and injury rates.
- Brent will manage road works safely while minimising disruptions to road users.
- Brent will maintain the network in optimum condition
- Brent will support enforcement and education programmes that target unsafe, unacceptable behaviour

Quality of Service / Value for Money

- Brent will optimise resources with regard to costs by using appropriate materials for asset preservation
- Brent will ensure traffic signs and marking are easy to see and understand.
- Brent will minimise disruption to road users when carrying out work on the highway.
- Brent will determine its investment by optimal decision processes in terms of when and how much money is spent on highway maintenance.

Availability and Accessibility of the Street Network

- Brent will provide a street network that offers choices for travel and is available to the whole community.
- Brent will prioritise the needs of disabled people and those with mobility difficulties.
- Brent will manage disruptions to ensure traffic flows are not affected.
- Brent will ensure that the transport system is reliable and travel times are predictable and that traffic control systems are designed to improve traffic flow.

Quality of Street Scene / Appearance of Street

- Brent will maintain roads, footways, pedestrian crossings and any public space in a good condition.
- Brent will repair, as a matter of urgency, any defect likely to cause personal injury or damage to property.
- Brent will maintain a tidy and safe clean street network by removing litter, graffiti, fly-posts and abandoned vehicles
- Brent will implement an optimum maintenance strategy.
- Brent will improve the urban environment through a selected programme road enhancement and urban aesthetic projects.

Sustainability

- Brent will manage all assets with respect for current and future generations.
- Brent will implement a campaign for school travel plans.
- Brent will maximise the use of recycled aggregates in highway works.
- Brent will make sure highway drains are clean and are operating efficiently.
- Brent is investigating the possibility of introducing a dimming and/or trimming regime for street lighting apparatus.
- Green energy supplies are utilised for powered apparatus

Improve Customer Service

- Brent will keep its customers well informed about its activities.
- Brent will respond promptly to customer queries and complaints.
- Brent will seek to ensure that people are satisfied with the quality of the highway service.
- Brent will carry out a public consultation surveys to define appropriate levels of service. The community will be involved during this process.

Appendix C – Performance Monitoring

The Transportation Service measures its performance against a series of indicators, which are measured either monthly, quarterly or annually. The following extract lists those indicators that would be directly impacted by the adoption of highways asset management principles, and which would be used to measure performance against the Plans objectives.

Transportation Performance Indicators 2013-14

Indicators Reported Monthly

Reactive maintenance	**PPI 13**	Urgent road defects repaired
Reactive maintenance	**PPI 14**	Urgent footway repairs completed
Reactive maintenance	**SPI 15**	Footway repairs completed
Reactive maintenance	**SPI 16**	Carriageway repairs
Reactive maintenance	**SPI 18**	Gulleys regularly cleared
Traffic Manager	**SPI 24**	Personal injury claims received and processed
Traffic Manager	**PPI 25**	Personal injury claims successfully refuted
Reactive maintenance	**SPI 27**	Maintenance expenditure

Indicators Reported Quarterly

Planned maintenance	**PPI 28**	Principal and non-principal classified network resurfaced
Planned maintenance	**PPI 29**	Unclassified road network resurfaced

Planned maintenance	**PPI 30**	Footway upgrade programme completed
Planned maintenance	**PPI 31**	Progress against all programmed road resurfacing

Indicators Reported Annually

Service Level	**PPI 36**	Road Safety - All Casualties
Service Level	**PPI 37**	Road Safety - All Killed or Seriously Injured
Service Level	**PPI 38**	Road safety - Child KSI

Asset Management	**SPI 39**	**Principal** classified road network requiring structural maintenance
Asset Management	**SPI 40**	**Non-principal** classified road network requiring structural maintenance
Asset Management	**SPI 41**	**Unclassified** road network requiring structural maintenance
Asset Management	**SPI 42**	**Footway** network where structural maintenance required

Planned maintenance	**SPI 43**	**Cost control of projects**