Highway Maintenance Plan

2012/13

Carriageways and Footways

Routine and Reactive Maintenance

Planned Maintenance

Highway Services
Asset Management

March 2012
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Introduction

This Highway Maintenance Plan (HMP) contains the key elements of the Council’s highway maintenance practices in relation to reactive, routine and planned capital maintenance. It sets out the strategy and targets and describes the processes and procedures that will be utilised to maintain carriageway and footways in 2012/13.

Enfield’s Highway Management

The HMP is a supporting document to the Highway Asset Management Plan and part of the following suite of documents which together form the basis of highway asset and service management in Enfield:

Highway Asset Management Plan

Highway Maintenance Plan

Network Management Plan

Streetscape Policy and Guidance

Winter Service Plan

All information and data relating to carriageway and footway maintenance is held within the Exor Highways Management System and other local data bases.

Throughout 2012/13, under ongoing work to upgrade the Exor Highways Management System, where appropriate, information held in local data basis will be brought into the Exor system.

Sustainability

The practices contained in this Highway Maintenance Plan are based, as far as is reasonably practicable, on the most sustainable whole life approach to design, specification of materials and construction methods. Such examples include the specification of durable materials and designs, recycling and re-using materials where possible, prioritising repairs and maintenance, undertaking treatments in a timely manner and using innovative techniques often developed through early contractor involvement. A sustained approach to maintaining Enfield’s roads and pavements will assist in reducing whole life costs and ensure continued levels of serviceability of the highway network.

Safety Inspections

Full details of safety inspections are set out in the Highway Asset Management Plan. Inspector’s reports will feed into reactive maintenance responses in accordance with current intervention levels and into the prioritisation model for planned maintenance of both carriageways and footways.
The frequency of carriageway safety inspections is as follows:

<table>
<thead>
<tr>
<th>Road Category</th>
<th>Frequency of safety Inspection</th>
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<tbody>
<tr>
<td>Principal Roads</td>
<td>Monthly</td>
</tr>
<tr>
<td>Busy and higher risk locations such as outside schools and old people’s homes</td>
<td>Monthly</td>
</tr>
<tr>
<td>Local Roads</td>
<td>6 Monthly</td>
</tr>
</tbody>
</table>

The frequency of footway safety inspections is as follows:

<table>
<thead>
<tr>
<th>Footway Category</th>
<th>Frequency of safety Inspection</th>
</tr>
</thead>
<tbody>
<tr>
<td>Footways adjacent to Principal roads and other footways around shops, schools and old peoples homes</td>
<td>Monthly</td>
</tr>
<tr>
<td>All other footways</td>
<td>6 Monthly</td>
</tr>
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</table>

During 2012/13 a review of carriageway and footway inspections will be undertaken to align appropriate inspection frequencies with carriageway and footway hierarchy, in accordance with practices laid down in the Code of Practice for Highway Maintenance.

**Condition Surveys**

**Principal and Classified Roads Condition Surveys:**

Hammersmith and Fulham, in 2010/11, undertook Scanner and DVI surveys of Enfield’s Principal and Classified Road carriageways and Scrim surveys of its Principal Roads. The results were reported in November 2011.

**Borough Roads Condition Surveys:**

As part of Highways Management System upgrade, the former MARCH licence held with DCL for processing data within UKPMS was cancelled from 1st April 2011, pending the use of UKPMS with the upgraded Exor programme.

In order to undertake further condition surveys a new highway network needs to be established and loaded onto Exor. The work to review and correct the network is substantial and therefore it has not been possible to undertake any new condition surveys without reinstating the MARCH licence since 2009/10. For 2011/12 a decision has been taken not to undertake condition survey work, but defer until 2012/13.
Therefore condition data for the planned carriageway and footway prioritisation model for 2012/13 will be based on 2009/10 and previous data, augmented by input from safety inspections and other sources.

A network will be established and a network condition survey will be undertaken in 2012.

Customer Satisfaction Surveys

From the results of the Residents’ Survey 2010, conducted between September and December 2010, it was identified that customer satisfaction with respect to highway maintenance needed to be improved. A further telephone survey was undertaken in September / October 2011 and these results enabled Highway Services to analyse and understand why its customers were dissatisfied. From these findings, alongside other existing forms of intelligence such as performance and condition, an action plan has been created that will endeavour to improve customer satisfaction. Many of the outcomes of this action plan have been incorporated into this Highway Maintenance Plan.

Routine and Reactive Maintenance

Reactive Maintenance - Intervention Levels

Enfield’s intervention levels for response under reactive maintenance are as follows: -

Within the carriageway –

- a step > or = to 40 mm in the carriageway generally
- a step > or = to 25 mm at pedestrian crossings
- a step > or = to 25 mm at any natural pedestrian crossing point where due to circumstances of the road layout pedestrians might be “channelled” across the carriageway

Within the footway –

- a step > or = to 25 mm

Highway Officers will make an on-site professional judgement on the degree of risk, taking into account a number of site specific parameters when they decide whether a defect requires treatment and how quickly is needs to be rectified. These parameters include the following:

- the depth, surface area or other extent of the defect;
- the location of a defect relative to other features, such as junctions or bends;
- the location of the defect relative to vulnerable users.
Reactive Maintenance - Response Times

The response time for rectifying a defect will depend on the defect categorisation which will be ascertained at the time of inspection and be dependant on the risk the defect poses to road users.

Enfield classes highway defects into three categories as follows:

Category 1 – defects that that will require urgent attention i.e. within 24 hours;

Category 2 (H) – defects where, following a risk assessment, are deemed not to represent an immediate or imminent hazard or risk of short term structural deterioration. Such defects may have safety implications, although of a far lesser significance than Category 1 defects, but are more likely to have serviceability or sustainability implications i.e. within 7 days;

Category 2 (L) – defects where, based on an assessment of the risks involved taking into account the nature and location, a longer response time would be acceptable i.e. within 28 days.

Routine Maintenance

Routine maintenance generally applies to the cyclic maintenance of other aspects of the highway infrastructure. A high proportion of routine work applicable to carriageways and footways will be determined from category 2 defects reported during safety inspections resulting in minor works and patching.

Treatments (Routine and Reactive Maintenance)

Carriageways:

Standard carriageway defect treatment (typically potholes) – defect treatments in carriageways will consist of cutting back the defect to sound construction and infilling with 10mm bituminous macadam.

Patching – Where a number of potholes exist within a small area or the area includes other surfacing defects, larger patch repairs may be considered.

Quick Fix – following a period of adverse weather, which results in higher than normal carriageway defects, a strategy of quick fix operations may be instructed under which ‘find and fix’ teams will operate across the borough in which potholes are made safe by infilling with a quick fix repair compound. This is to ensure the network is in a safe condition and to be able to deal with the increased number of reactive repairs within reasonable timescales. This will only be continued as long as is necessary to make the network safe and standard maintenance practices will be resumed as soon as possible.
Footways:

Bituminous Macadam - treatments in bituminous macadam footways will consist of cutting back the defect to sound construction and infilling with 6mm or 10mm bituminous macadam.

Paving – broken artificial stone paving (asp) that exceeds the intervention criteria will be taken up and disposed of and new asp laid to match existing.

Planned Maintenance

Scheme Prioritisation

Schemes for inclusion within the 2012/13 carriageway and footway renewal programme will be prepared using information from the following sources:

- Condition survey data;
- Visual condition assessments from the highway inspectors and engineers, based on local knowledge; and
- Complaints and requests from residents and Members.

Condition (surface and structure), future life expectancy and network importance will be the key factors in prioritising both carriageways and footways for treatment.

Planned maintenance priorities need to ensure the most effective use of budgets and the most cost effective treatment at the right time for whole life asset management and improved customer satisfaction. Planned intervention can lead to savings in the long term by treating deterioration early. Enfield’s road network has generally not deteriorated due to a sustained capital investment over the last six years, but it still has a number of carriageways which are life expired and in need of treatment. Therefore until such backlog can be treated, the principle of worst first will form a significant element of the Council’s scheme prioritisation.

Adverse weather in the winter of 2012/13 could result in some roads deteriorating to a greater extent than others and it may be necessary to substitute other roads in the programme throughout the year.

In addition to identified full carriageway schemes, partial resurfacing of carriageways will also be undertaken in order to treat specific areas of carriageway, where treatment of the whole length of a longer road cannot be justified.

Footways will be assessed and treated on an individual section basis, not a whole road basis, in order to maximise the value from limited funding by targeting section of footways which are in the worst condition.

The Olympics in the summer of 2012 may affect the prioritisation of some schemes for 2012/13, as key routes considered sensitive in a London wide context will be subject to an embargo on planned works between 1st July 2012 and 9th September 2012.
The continued high level of statutory utility works within Enfield also affects the programme of works. In particular, extensive water mains renewal works in the Edmonton area by Thames Water will affect the ability to treat roads in that area during 2012/13.

Carriageway Treatments

Reconstruction:

Full depth reconstruction is expensive and because of the duration of the work can have network management implications. A significant number of Enfield’s unclassified roads require reconstruction with modern bound material to replace original fill material and water bound aggregates previously used as a sub base. This however, would have a significant cost implication and would concentrate the capital programme on a small number of roads to the detriment of maintaining the wider network. Reconstruction will therefore only be undertaken where serious foundation issues exist and on the greater trafficked roads.

Resurfacing:

The depth of resurfacing will depend on the condition and substructure of the road. Where possible plane off and resurface to 40mm will be undertaken, but because of the generally poor base layers on Enfield’s borough road network, 100mm is the norm.

Thin Surfacing:

Proprietary thin surfacing systems laid up to 40mm thick will be considered where their use achieves greater strength and the need to reduce surfacing thickness is required. However, on many local roads, due to poor base material, its use has not proved durable.

Surface Applied Road Surfacing Systems:

Slurry sealing / micro-asphalt treatments will be considered where failure is identified early and this form of intervention (assessed within the prioritisation model) is appropriate.

Materials:

The use of Stone Mastic Asphalt (SMA) on some local roads, particularly where base layers are poor, has not proved to be durable and there has been early failure of some material in some instances. Following a successful switch to Hot Rolled Asphalt (HRA) in the 2011/12 programme, this will be continued in 2012/13.
Strategy for Dealing with Tar:

Coal tar was widely used as a binder in carriageway construction up until the mid 1980s and exists within the lower layers of some of Enfield’s roads. Tar is classified as carcinogenic due to its concentration of Polycyclic Aromatic Hydrocarbons and where it is found in high concentrations its removal and disposal has a significant environmental impact and is consequently expensive to undertake.

A review was undertaken into treatment methods for deep resurfacing and reconstruction. Following successful use in the 2011/12 programme, a system of partial reconstruction by recycling and strengthening the existing sub base will continue to be used rotavating the lower carriageway layers in situ and reusing it as carriageway sub base. This method will also be considered for reconstruction schemes even where tar is not present and it is a cheaper and more sustainable option to traditional reconstruction methods.

In January / February 2012 a series of cores was undertaken of potential roads within the 2012/13 programme to determine tar presence and concentration and inform decisions on action to be taken, including design of cement additives for the in-situ reconstruction treatment.

Joint Maintenance:

In 2012/13 a programme of joint repairs to concrete roads will be continued in order to maintain and reduce the rate of further deterioration of the extensive network of concrete roads in residential areas.

Footway Treatments

Recognising the need to look for greater efficiencies in material choices and ensuring more appropriate materials are used given the vulnerability to vehicle damage in many areas, the previous policy of extensive new artificial stone paving on concrete foundations is no longer continued and greater use of bituminous macadam surfacing as the first choice material is now adopted as part of the Council’s streetscape strategies.

A revised streetscape guidance policy for footways is as follows:

‘Generally bituminous macadam will be used on footway renewal projects in both urban and rural areas, unless the footway is part of a shopping parade or centre, is a key pedestrian route, forms a key route through the borough, there are architectural / streetscene reasons for retaining paving, reflecting the style and period of frontage properties or the footway is part of a wider regeneration scheme requiring its upgrade.

Where artificial stone paving is used in areas where vehicle overrun is anticipated, consideration will given to an appropriate kerb edge treatment.’

Where artificial stone paving is chosen, appropriate type and foundations will be adopted based on the circumstances of each individual scheme and in accordance
with the streetscape guidance. Fibre reinforced paving slabs will continue to be used in appropriate locations.

Opportunity will also be taken to explore improvements to the footway and streetscape when undertaking such works, such as incorporation of grass verges and tree planting.

Footway Crossings

Opportunity will continue to be taken during footway schemes to invite applications for the construction of footway crossings at a discounted construction cost as part of a borough wide programme to deal with situations where residents drive across the footway illegally. Bollards may be erected, where footway crossovers are not installed, to prevent further illegal activity and to protect new footway schemes from damage.

Programme Approval and Forward Plan

A programme of planned maintenance schemes for 2012/13 will be presented to the Cabinet Member for Environment in April 2012, following approval of the capital allocation by for 2012/13 by Full Council.

Work on the programme will commence in May 2012 and be subject to s58 notices and any other notice and coordination issues.

Asset Depreciation, Asset Improvement and Whole of Government Accounts Reporting for 2012/13

The treatments and the revised life expectancy of each asset treated will be included against deterioration modelling and asset valuation for the Whole of Government Accounts (WGA) return in 2013.