Havering
LONDON BOROUGH

Highways Resurfacing Policy

"Improving Havering's highways with targeted resurfacing works"

1. Reason for Policy

1.1 The length of the highway network in Havering consists of 740km of carriageways (roads) and nearly 1,070km of footways, making it the second largest highway network in London. Havering, in its capacity as the Highway Authority, has a statutory duty to maintain the public highway (Highways Act 1980 s41) but fulfilling that statutory duty with such an extensive highway network can be challenging and expensive.

1.2 Havering Council is seeking to make a significant investment in the highways asset for the benefit of the borough's residents and make a step-change in the condition of its highway network.

1.3 With finite levels of capital funding available, it is critical that any funding is spent in the most effective way possible to get the maximum benefit to the highway network. This policy sets out an overtly objective method by which locations for any available resurfacing investment will be determined in tackling the roads and footways that need it most. This policy approach can be applied irrespective of levels of funding available but levels of improvement will depend on funding exceeding the rate of decline of the highways asset.

2. Background: *Prevention is better than cure*

2.1 The majority of carriageways and footways within Havering were built within the last 100 years. Many of these were either constructed at the same time as part of large estate developments or are evolved roads (i.e. of minimal construction). The network roads are now all aging / deteriorating together at comparable rates and the reactive maintenance budgets are increasingly stretched as the network continues to age.

2.2 A review report commissioned by DfT and published in April 2012[1] emphasised that;

> ***"local highway authorities should adopt the principle that 'prevention is better than cure' in determining the balance between structural, preventative and reactive maintenance activities in order to improve the resilience of the highway network and minimise the occurrence of potholes in the future".***

2.3 Preventative and reactive maintenance budgets are very much linked. If there is an investment made via capital funding to carry out major resurfacing works on the highways asset, the future spend from maintenance budgets on that proportion on the renewed asset would significantly decrease. This highlights the maintenance savings that can be made with an increased proportion of the highway network in good condition.

[1] 'Prevention better than cure; potholes review', HMEP, DfT, 2012

3. Approach to Managing the Highways Asset – using the 'Worst-first Strategy'

3.1 A strategy focussed on replacing the carriageways and footways in the worst condition first would entail targeting those carriageways and footways that are deemed to be at the end of their useful life cycle and help address the significant backlog. The steps are set out below but a summary diagram is included in the appendix to this report.

3.2 Figure 1 below is an illustrative example (based on real highways data but not Havering) to demonstrate the impact of a worst-first strategy on the condition of the highway assets over time. A worst-first strategy would reduce those assets identified within the 'very poor' and 'poor' categories and increase the proportion of the highway that is either 'good' or 'very good'.

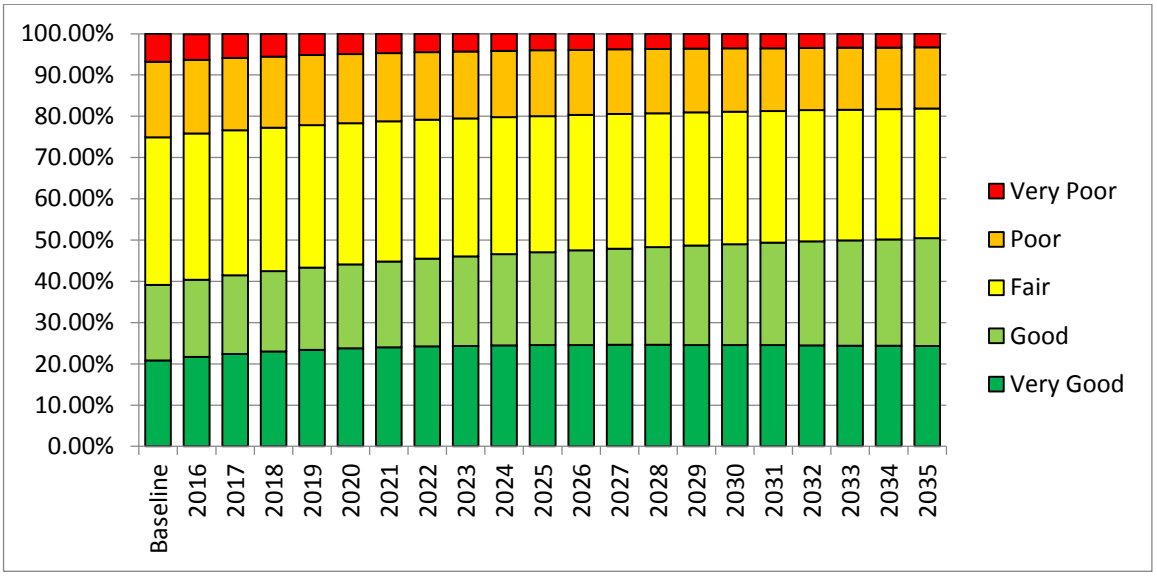

Figure 1: Worst-first Strategy

3.3 With annual borough-wide condition surveys planned, it will become increasingly realistic for the Council to map out and forecast the degradation and lifespan of its own highways network and review this policy approach in future years but the worst-first strategy is most appropriate for now.

4. Making use of 'Horizons' to objectively deliver the 'worst-first' Strategy

4.1 During Havering's Highways Asset Management planning a need was identified for a more overtly objective approach to identifying and prioritising capital spending. Horizons is a web based mapping application which allows users to visualise, manage and optimise asset management strategies. The software package is based on a combination of GIS, Pavement Management and Asset Management systems.

4.2 The software identifies and prioritises highway maintenance schemes, and determines the cost implications of various treatments. It allows Havering to use locally defined remedial treatments and also allows users to specify additional criteria and triggers at which these treatments would be invoked should it so wish.

4.3 UKPMS (United Kingdom Pavement Management System) survey data - collected by Havering in accordance with industry best practice - is entered into Horizons.

4.4 Condition is the primary driver when determining a programme of remedial works. However, Horizons is able to take account of additional local factors when managing the local highway network (e.g. proximity to shops, schools, bus routes etc.) which can be considered whenever this policy is reviewed and refined.

5. Footway and carriageway treatment groups / approximate costs / treatment life spans.

5.1 To enable Horizons to be able to come up with meaningful works plans all current resurfacing treatment types that are currently carried out in Havering have been included. These treatments are:

Footway treatments;

- Renew existing asphalt footway.
- Renew existing block work footway.
- Slurry seal exiting asphalt footway.
- Convert existing ASP to asphalt.
- Convert existing concrete footways to asphalt.

Carriageway treatments;

- Resurface existing carriageway to a depth of 100mm.
- Resurface existing carriageway to a depth of 50mm and install glass grid over high stressed areas to prevent joint failures.
- Resurface existing carriageway to a depth of 40mm.
- Surface treat existing carriageway with micro asphalt.
- Surface treat existing carriageway with surface dressing.

5.2 Not all treatments are suitable for all classifications of roads and footways, so a set of rules has been written within Horizons to make the treatment selection process more accurate (e.g. it would only consider surface dressing within the rural network). The current rule set can be further developed year upon year as the selected treatment sets suggested by Horizons are validated.

5.3 The approximate cost of each treatment (per square metre) has been uploaded into Horizons to enable an annual works programme to be produced based on the budgets available.

6. Horizons Outputs - Draft Works Programmes

6.1 Delivery of the works programme is the tangible outcome of the asset management planning process. The process to develop a works programme for maintenance and renewal of highway infrastructure assets comprises the identification, prioritisation, optimisation, programming and delivery of individual schemes.

7. On-site Validation: Finalisation of Works Programmes

7.1 Although the aforementioned process creates a works programme, individual locations still need to be validated on site by suitably qualified and experienced engineers as other local factors that cannot be inputted into Horizons may necessitate change to the suggested treatment and hence the cost.

- On site factors not available for Horizons to consider, such as insufficient kerb height in a road to allow micro-surfacing to be applied, or there are high stress junctions where joints would require glass grid application to prevent a shortened life span of the treatment.
- Cost efficiencies on getting works into a higher banding within the schedule of rates
- Specialist contractor's e.g. surface dressing, may be more cost effective to surface dress more roads than suggested within a certain programme as this would reduce future set-up costs.
- Ability to test new methods / materials as they become available to solve specific issues
- High level of statutory undertakers within Havering can affect the programme of works.
- Regeneration works / future planned developments may affect the programme of works.

7.2 As more condition surveys are undertaken and more asset information is inputted into Horizons, the level of validation required to draft works programmes will decrease. Any such changes made to the works programmes produced by Horizons will be well documented and made available for scrutiny.

8. Undertaking the works

8.1 With a works programme agreed, the Council will work with contractors to deliver the agreed resurfacing on time and to budget within the planned year. Engineers will closely supervise contractors to ensure high quality and value for money.

9. Policy Review

9.1 This policy will be in place until such time as it is deemed necessary to amend, but the input options and priorities will be reviewed after three years, which will be sufficient time to measure success of the approach.

Appendix – Summary of policy approach

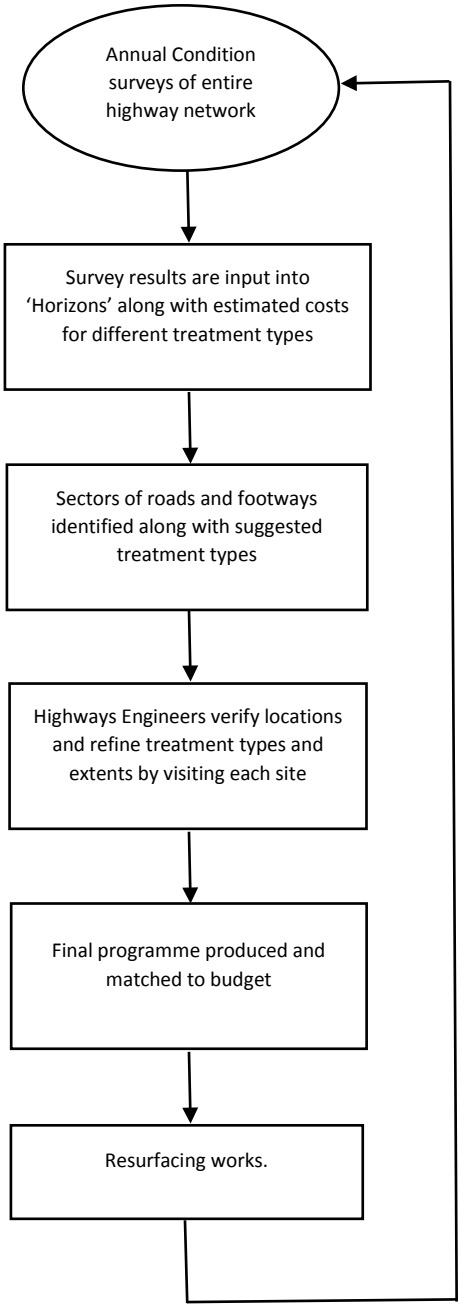

Figure 2: Summary of approach to identifying annual works programme