

Appendix 2: Description of Maintenance Schemes

Highways Maintenance

The maintenance treatment programmes, as shown in Appendix 3, are aimed at providing the most appropriate treatments to the classified and unclassified road network. The opportunity will also be taken to link the implementation of road maintenance, integrated transport projects and public realm projects together to lower costs and minimise disruption.

It is important to note that exact limits for the extended pavement programme are not provided in this report, due to volume of extra preparation work.

As shown in the report there is also an extra £1.4m provided by Citizen Housing Group for pavements and highway network improvements this year, which is provided from the Right to Buy Infrastructure Fund.

Pavement Treatments

Pavement Reconstruction: A scheme of work which will often include excavation of kerb lines, relaying or renewing of kerbs, replacement of slabs or tarmac and supporting layers. This restores the treated area to 'as new' condition. Some tarmac pavements can be 'overlaid', this is where a further layer of tarmac is laid over the top of the existing surface, adding strength to the pavement.

Pavement Slurry Seal (tarmac pavements): A process where a 'slurry' containing bitumen is spread across the existing tarmac. The process is thin, up to 10mm, so there are no problems meeting existing levels. This process is used on sites where early signs of deterioration are evident and hence is an excellent preventative maintenance treatment.

Pavement treatments vary in cost from around £13 per square metre for slurry seal up to £140 per square metre for full reconstruction. Reconstruction is very labour intensive which results in higher costs relative to road resurfacing work.

Road Treatments

Road Planing and Patching: This method of repair is best suited to those roads where there are larger (greater than 10 square metres) areas of deterioration, often at junctions and turning heads or where there are problems with old utility reinstatements. The process entails removing the top 40mm (or whatever is appropriate) and inlaying new material. Typical cost is £52 per square metre. This treatment has the added advantage of forming part of the preparation process for future preventative maintenance surface treatment schemes. Roads which have been planed and patched are very suitable for surface dressing or micro asphalt the following year. The Plane and Patch operation offers the flexibility to carry out large permanent repairs to roads which deteriorate quickly for any reason.

Road Resurfacing: This treatment is split into two types, inlay and overlay. Best value is achieved with overlay and, where possible, this is the preferred approach.

Inlay: This is an inherently expensive approach and will be used only where absolutely necessary, usually where there has been a structural failure in the base layers. It is recognised that there are a few locations where a deeper repair is essential. The costs of this approach can be over £75 per square metre.

Overlay: For roads where the deterioration is confined to the upper layers of the carriageway, a good solution is to overlay. Similarly to pavement overlay, an extra layer of tarmac is laid over the existing surface. To maintain kerb height, it is usually necessary to plane out adjacent to the carriageway edges. The advantage of this approach is that it increases the thickness of tarmac, thereby strengthening the carriageway and reducing the amount of material that has to be taken away. For roads in poor repair, pre-patching is necessary. Typical costs are £57 per square metre.

Surface Treatments: All of the above processes extend the life of a road by a number of years and this life can be extended further by the application of surface dressing or other surface layer systems such as a Micro Asphalt. The importance of surface treatments is that they provide waterproofing to the road surface and prevent the ingress of water. In winter, water significantly contributes to deterioration and can cause weaker surfaces to break up. Surface treatments help to prevent this process occurring.

This year continues the successful programme of preventative maintenance. The value of this approach can be seen from the fact that surface dressing costs around £15 per square metre and Micro Asphalt is typically £20 per square metre, compared to over £57 per square metre for resurfacing.

Drainage Surveys/Maintenance

Capital maintenance schemes for drainage includes the repair, renewal of piped systems, new gullies and connections to the main sewer and often can involve the laying of new highway drains. These works address capacity or damage issues which are usually evidenced by flooding on or adjacent to the Highway. The Council's annual CCTV programme surveys the Highway drainage network and highway culverts and helps to build the asset register.

Flood Relief Schemes

The purpose of these schemes is to reduce the risk of flooding in known high risk areas. Such works are usually carried out in conjunction with the Environmental Agency (EA). To reduce risk at source, flood reduction measures can entail construction of storage areas on the Highway or private land, e.g. ponds, swales and ditches for slow release. Other measures include naturally slowing flows using a technique known as Natural Flood Management (NFM), using tree and hedge planting together with other natural obstacles. Other measures such as Property Flood Resilience (PFR) planned for rollout provide resilience to internal flooding during extreme events.

Verges

This programme allows for the protection of verges, typically through the use of bollards in accordance with the adopted verge policy. It may also include provision of lay-bys or simply re-soiling existing verges, where new protective measures are in place. Use of grass-grid type materials continues to be successful. These systems allow vehicle over-run whilst maintaining a green verge like appearance to the street scene.

Vehicle Safety Fences

This allocation is used to maintain existing safety fences (Vehicle Restraint Systems) on the network and can include bridge parapets. The budget allows for the testing and replacement of lengths of fencing to meet modern standards.

Structures

We continue to provide a programme of capital maintenance across over 300 structures which comprise road bridges, culverts, footbridges, retaining walls, sign gantries and subways. Schemes cover a wide range of maintenance works, including strengthening, waterproofing, repair of structural elements, and replacement of movement joints. The programme also includes detailed structural inspections and assessments of substandard structures. It should be noted that all locations are subject to detailed investigation and possible delays caused by engineering difficulties/consultation issues.