Economic Prosperity, Environment and Highways Board

26 January 2016

Officer report to the Economic Prosperity, Environment and Highways Board, further to Councillor Watson's motion to council on 8th December 2015;

> *'Council notes that when roads are surface dressed in order to prolong the life of roads by sealing them and to save money before a full resurfacing, the road surface becomes noisier for residents living nearby.*
>
> *This Council requests the Cabinet to amend its policy to take into account not just cost but also the quality of life of residents, including noise levels of different road surfaces when deciding on different types of materials and processes for surface dressing or full road resurfacing.'*

Background – National Guidance and Best Practice

Surrey Highways and Transport Service follow an Asset Management strategy in order to develop effective maintenance strategies for Highway Assets. Asset management is a well established discipline, implemented in the UK and internationally for the management of physical assets. Many asset owning organisations have adopted the principles of asset management and as a result, can demonstrate benefits in terms of financial efficiencies, improved accountability and stewardship of the asset, better value for money and improved customer service.

In terms of determining appropriate treatments for roads, various recent publications have highlighted the need for local authorities to adopt a maintenance approach that includes an appropriate balance between structural treatments (e.g. major maintenance), preventative treatments (e.g. surface dressing) and reactive works (e.g. pothole filing).

The 2011 Audit Commission Report "**Going the Distance: Achieving better value for money in road maintenance**" highlighted that by considering an asset over a whole lifecycle it's possible to select the right time to intervene with the right treatment in order to preserve the asset in an economically viable way. The report also discussed the fact that this approach may not be a popular approach with residents because carrying out preventative maintenance can seem wasteful when other roads are more visibly in need of maintenance, however if asset management principles are followed, improved value for money and sustainability in the long term will be delivered.

The report also highlights the importance that roads make to the economic competitiveness of an area, further highlighting the need to follow an asset management strategy, "Councils *must use their road maintenance to support the economic competitiveness of their area. Roads play a critical role in public service delivery and economic growth – both through the increased mobility of citizens, goods and services, and through building and maintaining infrastructure*." The full report can be downloaded at; http://www.ciht.org.uk/en/media-centre/news/index.cfm/audot-commission-release-going-the-distance-report-on-road-maintenance

The 2012 Department for Transport report "**Prevention and a Better Cure: Potholes Review**" discussed the benefits of an asset management approach that includes preventative maintenance. The report states "*asset management has not been embraced consistently across all authorities, although it is clearly understood that a more preventative approach to maintenance and long term planning is likely to reduce the occurrence of potholes*".

One of the main themes highlighted in the review is that '*Prevention is better than cure – intervening at the right time will reduce the amount of potholes forming and prevent bigger problems later'*. The review recommends the following '*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*. The Full report can be downloaded at: https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/3995/pothole-review.pdf

In view of the above, the Department for Transport has recently changed how capital highway funds will be allocated to highway authorities. From 2016 onwards each authority will still receive a basic allocation based on empirical data, but a new "Incentive Fund" will be allocated according to how successfully an authority is implementing efficiency measures. This includes the need for a sound asset management based approach to highway maintenance. The national value of the fund is significant at £578m (spread from 2015 to 2020) and the County Council is keen to ensure we obtain the maximum share we can. The allocation process involves completing a detailed self assessment that has to be certified by the S151 Officer.

Surrey County Council's Approach to Asset Management

Surrey County Councils prioritisation policy and criteria for key highway assets including roads and pavements gives details on how Surrey Highways prioritises available funds

in the most cost effective way through asset management, It states '*It is necessary that whatever funds are available are spent on the right schemes at the right time and that schemes are prioritised using value management to maximise risk reduction and minimise whole life costs.'*.

As well as including priorities such as the condition of the road within the prioritisation matrix, other aspects that affect the quality of life of residents are also taken into account, for instance scores are also given for sections of roads;

- where there have been accidents
- where claims have been made
- where there have been potholes reported

The glossary of the prioritisation policy provides the following narrative to explain the importance of preventative maintenance;

> *Preventative Maintenance treatments are used in a similar way as varnish is used to preserve and prolong the life of a window frame. Unlike Major Maintenance they generally don't involve removing and replacing, but instead are applied on top of what is existing to preserve where the underlying structure is still intact. On roads treatments such as surface dressing are used to reinstate skid resistance and seal against the ingress of water to the lower layers of the road structure.*
>
> *Although it may not seem like an obviously sensible use of resources to treat a road that is still in fairly good condition when other worse roads are left untreated, spending money on preventative maintenance improves the resilience of the highway network and prolongs the life of highway assets in a cost efficient way, leading to an overall long term improvement.'*

The full policy and criteria can be found at:
http://www.surreycc.gov.uk/__data/assets/pdf_file/0016/45052/Prioritisation-Policy-and-Critieria.pdf

Officers are in the process of developing a long term 15 year asset management strategy which will be referred to this Board for comment and development before consideration by Cabinet.

Surface Dressing and Noise

Surrey County Council does not generally test for volume of road noise, as there is no set figure defining acceptable levels of road noise. However, noise is considered in the first instance when the site to be surfaced is reviewed by highway engineers. Surface dressing is rarely used on residential roads, for instance housing estates or other roads with houses adjacent to the road where the traffic speed is usually 30mph or below, as it is acknowledged that it is noisier than other surfacing options, however it is a commonly used treatment in Surrey and the rest of the country which is used on various road types of road including A class roads that have high speed and large volumes of traffic as well as more rural roads with lower traffic levels.

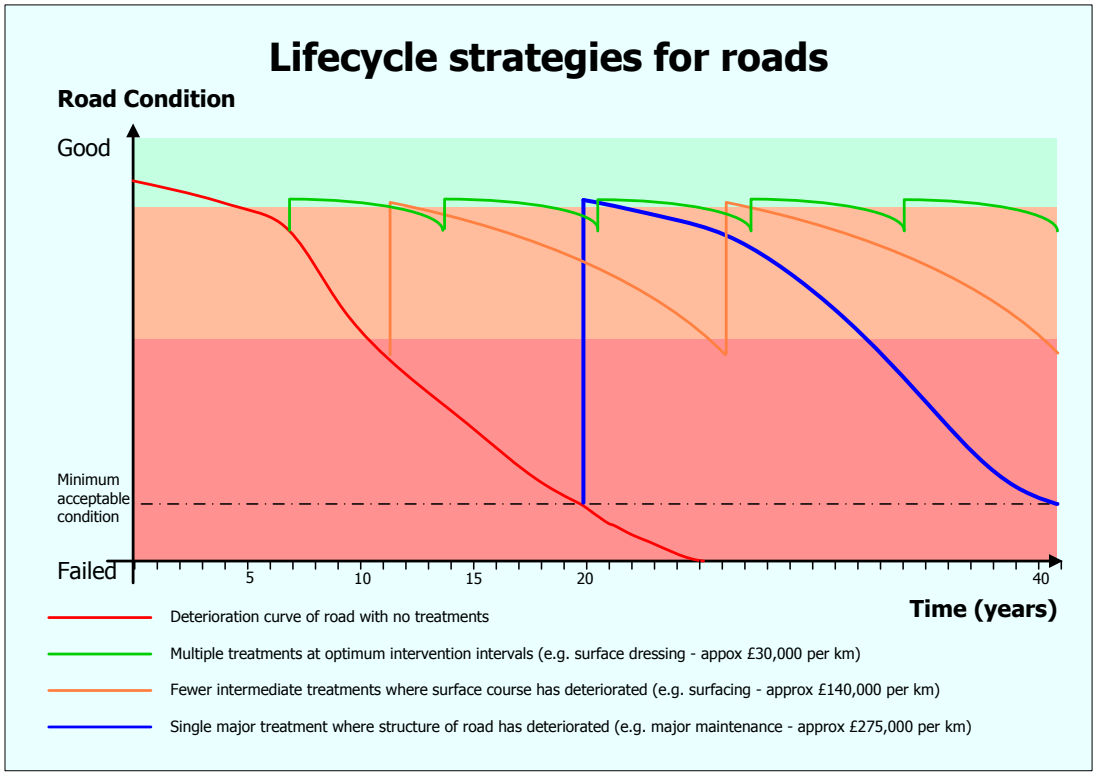
Some of the materials which are considered quieter than others are thin surface course systems which were originally developed in mainland Europe over 20 years ago. They have since been developed to meet UK safety requirements and have been in widespread use on English roads since the mid nineties. The life span for this type of surfacing is typically between 7 – 15 years. While there are benefits to using thin surface course systems including the fact that they produce lower noise levels, they tend to be open-textured and potentially more susceptible to the ingress of water leading to deterioration of the road surface. For this reason Surrey and many other local authorities apply a preventative maintenance treatment, such as Surface Dressing, between 7 and 10 years after the initial treatment in order to prolong the life of the surface. As well as prolonging the life of the road, surface dressing also restores skid resistance properties and therefore is a useful material in terms of safety.

While surface dressing is acknowledged to be a noisier surface than some structural treatments, evidence from the Road Surface Treatments Association (RSTA) and from the Transport Research Laboratory (TRL) suggest that the noise levels will reduce over time. The RSTA point out that loss of texture tends to reduce noise and therefore "*surface dressing will become less noisy over time*" (http://www.rsta-uk.org/downloads/RSTA-ADEPT-Code-of-Practice-for-Surface-Dressing-Pt8-Quieter-Surface-Dressing-2014.pdf). This is borne out by research carried out by TRL which measured noise levels of different road surfaces two years apart. The noise levels of all surfaces measured were quieter after two years and those which had shown higher noise levels initially showed greater levels of noise reduction; "*the fact that the largest reductions in noise tended to occur on the surfaces that were the noisiest in 2002 will mean that over time the range between noisiest and quietest surface will tend to reduce*". (http://www.trl.co.uk/reports-publications/trl-reports/report/?reportid=4927).

Benefits of Preventative Maintenance

The illustration at figure 1 shows the different high level treatment options available to a highway engineer during the different points of a roads lifecycle and illustrates the benefits of intervening at the right time. If a road is not showing much sign of deterioration, a surface treatment can be used which will restore the road to a 'nearly new' condition and will considerably prolong the life of the road. If the initial intervention point is missed a more expensive treatment will be required to restore the road to nearly new condition and when a road has reached the point where it has significantly deteriorated, multiple layers of the road may need to be replaced at a considerable cost.

Figure 1



The tables in figure 2 provide a financial illustration of the benefits of intervening at the right time with the right treatment. They demonstrate that a maintenance strategy that is based on structural treatments only could be nearly twice as expensive in the long term than an asset management strategy that includes an appropriate mix of structural and preventative maintenance.

Figure 2

Treatment Year	Reconstruction Only	Cost
20	RC	£275,000
40	RC	£275,000
60	RC	£275,000
80	RC	£275,000
100	RC	£275,000

Treatment Year	Reconstruction & Resurfacing only	Cost
14	RS	£140,000
28	RS	£140,000
42	RC	£275,000
56	RS	£140,000
70	RS	£140,000
84	RC	£275,000
98	RS	£140,000

Treatment Year	Full Asset Management	Cost
7	SD	£30,000
17	SD	£30,000
27	RS	£140,000
34	SD	£30,000
44	SD	£30,000
54	RS	£140,000
61	SD	£30,000
71	SD	£30,000
81	RC	£275,000
88	SD	£30,000
98	SD	£30,000

Total cost to treat 1km of road over 100 years

£1,375,000 **£1,250,000** **£795,000**

Conclusion

The Council has a duty under the Highways Act (1980) to maintain the highway. The Council's policy on how to fulfil this duty in terms of planned capital maintenance is set out in the Capital Prioritisation Policy which was developed by an Environment and Transport Select Committee member/officer task group and approved by cabinet on 27/05/14. This policy ensures that the limited funds available to the Council are spent on the right schemes at the right time to minimise risks to highways users and whole life costs of an asset. It is the Council's policy to use preventative maintenance such as surface dressing on roads that have previously undergone a reconstruction. This is in order to extend the service life of that road by restoring skid resistance and preventing the ingress of water into underlying layers which could lead to deterioration. The asset management approach of including preventative maintenance as part of an effective asset management strategy is backed up by guidance from the Department for

Transport and the Audit Commission who recommend intervening at the right time with preventative measures such as surface dressing. The Department for Transport is now directly linking the value of capital maintenance grants to those authorities which have comprehensive asset and efficiency procedures in place.

Officers are in the process of preparing a new 15 year asset strategy to take the service to 2030. As part of this process comments from Members will be taken into consideration.

While there are no specific standards, noise is a consideration to the highway engineer and for this reason surface dressing is infrequently used where there are multiple properties which are in very close proximity to the highway. On most of the network it is a cost effective and necessary treatment that is used nationwide.

This page is intentionally left blank