Nottinghamshire County Council

Submission for The ADEPT President's Annual Awards 2019

Nottinghamshire County Council's Strategy for Dealing with Tar bound Materials

Category 1: Delivering Clean Growth

Synopsis:

This submission describes the evolution and application of Nottinghamshire County Council's strategy for dealing with the tar-bound waste arising from its highways capital maintenance programme.

Tar-bound materials are potentially carcinogenic and must be disposed of at specialist tips at considerable cost (circa £110 per tonne), these costs impact adversely upon the County Council's ability to maintain its highway network.

The application of Nottinghamshire's strategy provides three significant benefits:

- **The costs of disposal are eliminated**
- **Tar-bound materials represent an opportunity as well as a cost, their re-use on the highway network reduces the demand for expensive virgin aggregate.**
- **Significant Carbon Dioxide reductions are achieved from the reduced demand for new surfacing materials and vehicle movements.**

Word Count: 494 Words

Nottinghamshire County Council's Strategy for

Dealing with Tar bound Materials

Introduction

Tar bound materials first became a significant problem for the delivery Nottinghamshire's road maintenance programme in 2017/18, this resulted from changes to the County Council's maintenance priorities which placed a greater emphasis on unclassified residential roads constructed prior to the 1980's which used tar bound surfacing materials which are now classified as carcinogenic and can only be disposed of at specialist tips at cons iderable cost (circa £110/tonne).

In 2017/18 Nottinghamshire's road maintenance programme included over 300 individual maintenance sites that generated 6,500 tonnes of tar bound waste. In 2018/19 a further 400 sites identified generating 9,500 tonnes of tar-bound waste.

The volume of arisings and the cost and the environmental impact of disposing them at a specialist facility made it imperative that an alternative solution be found.

Figure 1. Example of tar bound material

Solutions adopted for the 2017/18 programme

The first part of the solution was to undertake coring to identify locations where tar bound materials would be encountered.

Once testing was completed Nottinghamshire's term maintenance contractor – *Via East Midlands Ltd*. – and its delivery partner - *Tarmac Ltd* – developed a programme to minimize the cost and environmental effects of the presence of tar bound material.

The technique adopted involved the crushing and re-mixing of waste materials to produce a product called Ultifoam which can be used in the lower construction layers of the carriageway. This material was then used on roads at several rural locations around the County and overlaid with a surface course.

One limitation with Ultifoam is that when it's laid it is sensitive to extremes of weather so its use is restricted from spring until late autumn.

Figure 2. Mobile recycling facility

Solutions adopted for the 2019/20 programme

The successes achieved in the previous programmes resulted in the County Council and Via EM Ltd jointly developing a strategy for dealing with tar bound materials with a goal of achieving a "waste neutral" programme.

The development of the 2019/20 programme has been accelerated to allow site surveys, coring, waste volumes and local factors to be identified early, this was facilitated by the inclusion of a coring programme into the overall capital maintenance programme approved by Members. Early identification of sites means that the maximum use can be made of the window available for the use of Ultifoam and to date more than 500 sites have been identified generating and estimated 13,000 tonnes.

Figure 3. Ultifoam being laid

Another part of the strategy is to assess the impact of highway classification on the generation and reuse of tar bound material. The unclassified road network programme generally consists of urban residential roads and, given the nature of these sites, there is less opportunity to recycle material because these streets have minimal construction and as such Ultifoam cannot be used within the associated thinner layers. In these circumstance “waste neutrality” can be achieved by using Ultifoam on roads in rural locations, without edge restraint, these roads can then be treated with a final surface course with minor associated work.

Current estimates indicate that the application of Nottinghamshire’s strategy over the 3 years will generate cost, transportation and quarried aggregates savings nearing £1,700,000, carbon reductions of 700 tonnes.