

**To: THE INFRASTRUCTURE, LAND AND ENVIRONMENT POLICY BOARD**

**On: 29 AUGUST 2018**

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**Report by: DIRECTOR OF ENVIRONMENT & INFRASTRUCTURE**

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**Heading: INCORPORATING WASTE PLASTIC INTO ASPHALT, FOR ROAD REPAIRS**

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## **1. Summary**

- 1.1 This report takes forward a Notice of Motion to Council in December 2017 where it was agreed that the appropriate officers examine this innovative and new approach to road surfacing materials.
  - 1.2 This report informs members of the Council's intention to trial a new asphalt product, that contains recycled plastic waste. The waste plastic is designed to replace part of the bitumen in an asphalt mix.
  - 1.3 Environment & Infrastructure intends to trial the product in a suitable location in the Autumn 2018 as part of a resurfacing programme in Elm Drive, Johnstone.
  - 1.4 The use of the product and road surface will thereafter be monitored on a regular basis to assess its suitability as a product for future roads improvement programmes.
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## **2. Recommendations**

It is recommended that the Infrastructure, Land and Environment Policy Board:

- 2.1 Note that the Council will trial in Autumn 2018 this new asphalt product containing recycled plastic as part of a resurfacing programme.

### **3. Background**

- 3.1 Through 2018 discussions have been held with a specialist company who have developed a new product to be introduced and used as an additive to asphalt, which is currently used for road resurfacing works. The product is made from 100% waste plastic materials and is used to replace part of the bitumen in any asphalt mix. It uses between 3kg to 10kg of waste plastics in every tonne of asphalt, depending on the road design.
- 3.2 Bitumen is a fossil fuel, alternatives to bitumen should be considered to improve sustainability. This product replaces part of the bitumen in asphalt, giving a reduction in fossil fuel usage.
- 3.3 The use of plastics and its detrimental impact on the environment is widely acknowledged. The product uses 100% recycled plastic materials helping to reduce unwanted, discarded plastics from landfill and from oceans. The product comes in the form of pellets or flakes which are fully melted into the bitumen within the asphalt mix.
- 3.4 The company supplying the product is based in Scotland and is the only supplier of waste plastic bitumen replacing additives to the asphalt industry across the world. Their products are being used in asphalt for highways, airfields and other construction and transportation projects, as well as the utility sector and domestic markets. Their products have been used by asphalt manufacturers, local authorities, asphalt laying contractors, Highways England, Transport Scotland and major developers.
- 3.5 The manufacturer of this particular product believes this product has a number of benefits over traditional asphalt mix in that it provides:
- Increased tensile strength;
  - Increased fuel resistance;
  - Increased resistance to deformation;
  - Highly resistant to scuffing and tearing from tight turning vehicles;
  - Raises softening point of asphalt;
  - Reduction in air voids; and
  - Increased resistance to water sensitivity.

### **4. Potential Use On Renfrewshire's Roads Network**

- 4.1 This particular product has only been available for 2 years and is currently more expensive than the existing products used to resurface roads. It is not yet available through local suppliers and contractors at this time.
- 4.2 The service plan to trial this particular product in Elm Drive, Johnston, which will involve laying a patch of around 250 square metres in Autumn 2018.
- 4.3 When the Council trials new road material products, the time period for monitoring these new products must be considered over a number of years, to ensure the

product provides the longevity expected from a new road surface of 20 to 30 years. Local authorities in Ayrshire and Dumfries, along with ourselves, have agreed that we will collectively monitor and evaluate the quality of this particular product over the coming years to improve the evaluation of this product. From experience failures may happen in the first 10 years of a new product where life expectancy of a road is 30 years.

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### **Implications of the Report**

1. **Financial** – None.
2. **HR & Organisational Development** – None
3. **Community Planning** – None
4. **Legal** - None
5. **Property/Assets** – This new product will be trialled on the Council's road infrastructure asset.
6. **Information Technology** - None
7. **Equality & Human Rights** - The Recommendations contained within this report have been assessed in relation to their impact on equalities and human rights. No negative impacts on equality groups or potential for infringement of individuals' human rights have been identified arising from the recommendations contained in the report. If required following implementation, the actual impact of the recommendations and the mitigating actions will be reviewed and monitored, and the results of the assessment will be published on the Council's website
8. **Health & Safety** – None
9. **Procurement** – None at this stage.
10. **Risk** – This is a new product which should be trialled for a period of time with further assessment prior to more widespread use.
11. **Privacy Impact** – None
12. **Cosla Policy Position** – None

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### **List of Background Papers - None**

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