

Appendix 3 – Carbon Impact Form – Indicative Highway Repair Programme for 2023/2024

| Will the decision/proposal impact... | Impact. | If an impact or potential impacts are identified | | | |
|---|---------------------|--|--|---|---|
| | | Describe impacts or potential impacts on emissions from the Council and its contractors. | Describe impact or potential impacts on emissions across Rotherham as a whole. | Describe any measures to mitigate emission impacts. | Outline any monitoring of emission impacts that will be carried out. |
| Emissions from non-domestic buildings? | no impact | - | - | - | - |
| Emissions from transport? | increases emissions | Increased transport through delivery of tarmacadam and construction products from supplier to site. | - | The Council purchase the majority of its tarmacadam products from Steelphalt, a Rotherham based company to minimise the movement of material and minimise the impact of emissions from the transport / delivery of millions of pounds worth of materials. | - |
| Emissions from waste, or the quantity of waste itself? | increases emissions | <ul style="list-style-type: none"> 95% of asphalt is produced from recycled steel slag that is a bi-product generated from steel production within 3 miles of the supplier. All surplus asphalt returned from customers and blended back in to base & binder products. | - | Steelphalt have recently engaged with University of Sheffield and the Carbon Trust to baseline the current nett carbon per tonne of material but unfortunately are in the very early stages so I don't have any carbon specific data to share | Monitoring and reporting will improve once Steelphalt have completed the emission data work and it is available to use. |

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| | | <ul style="list-style-type: none"> Currently producing all machine lay base & binder products at 20-30 degrees lower temperatures to reduce energy use. | | | |
| Emissions from housing and domestic buildings? | no impact | - | - | - | - |
| Emissions from construction and/or development? | increases emissions | <p>The Council has a statutory duty under Section 41 of the Highways Act 1980 to maintain the adopted highway. The repair of the roads and footways is required to keep the highway safe for all users.</p> <p>Highway maintenance does have an impact on carbon emissions through material use, construction and delivery but these emissions are mitigated where possible as stated previously.</p> | | <p>The Council's approach is to move away from traditional maintenance options, not concentrating on repairing worst first, and more towards treatments that extend the life of a road. It is therefore important to have a wide range of treatment options available so as to allow the most appropriate treatment to be used on the appropriate site. Therefore the most efficient method of maintenance is used that avoids deep dig repairs that require greater levels of CO₂ to deliver.</p> | |

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| Carbon capture (e.g. through trees)? | no impact | - | - | - | - |
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Identify any emission impacts associated with this decision that have not been covered by the above fields:

Steelphalt are a Rotherham based company who fabricate the majority of tarmacadam material used to repair the Council’s roads and footways. Steelphalt is collaborating with the University of Sheffield and the Carbon Trust to baseline their current net carbon per tonne of material.

Please provide a summary of all impacts and mitigation/monitoring measures:

Steelphalt have confirmed their Steel Slag Asphalt is 95% recycled per tonne. They offer low temperature asphalt and inclusion of recycled plastic to further reduce embodied carbon by up to 40% in comparison with asphalt produced from quarried aggregates.

The Council has worked with Steelphalt to trial what is believed to be the Worlds first Carbon Negative tarmac with asphalt incorporating a natural binder that can part replace fossil based bitumen. This binder is Kraft Lignin, a plant derived polymer found in almost all dry land plants, in this case trees. This is achieved by using steel slag aggregate (zero quarrying), a reduced mix temperature of 30-40c reducing CO2 emissions, and the Lignin having a Biomass carbon equivalent to 2,336 kg/t.

Street Lighting have two main suppliers, ASD (lanterns) and Fabrikat (columns and poles) and the Council has asked the companies to provide information regarding their commitments and improvements in manufacturing, packaging and transport with regards the Carbon Impact Assessment

The Street Lighting Service has over the last 8 years made huge inroads into energy reduction with the installation of LED lanterns and the replacement of all illuminated bollards with reflective units. The other effect of LED units is the reduction in faults and the reduction in the need for Council staff to need to travel around the borough to effect street lighting repairs.

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| Supporting information: | |
| Completed by: (Name, title, and service area/directorate). | Richard Jackson, Head of Highways and Flood Risk |
| Please outline any research, data, or information used to complete this [form]. | Nil, at this time |

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| If quantities of emissions are relevant to and have been used in this form please identify which conversion factors have been used to quantify impacts. | Nil, at this time. |
| Tracking [to be completed by Policy Support / Climate Champions] | David Rhodes, Environment, Energy and Data Manager |