| Will the decision/proposal impact… | Impact | If an impact or potential impacts are identified: | | | |
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| | | Describe impacts or potential impacts on emissions from the Council and its contractors. | Describe impact or potential impacts on emissions across the Borough 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? | None | | | | |
| Emissions from transport? | Increase | 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? | Increase | • 95% of asphalt is produced from recycled steel slag that is a bi- product generated from steel production within 3 miles of the supplier.<br>• All surplus asphalt returned from customers and blended back in to | | Steelphalt - engaged with University of Sheffield and the Carbon Trust to baseline our current nett carbon per tonne of material. This in early stages and we 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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| | | base & binder products.<br>• Currently producing all machine lay base & binder products at 20-30 degrees lower temperatures to reduce energy use. | | | |
| Emissions from housing and domestic buildings? | None | | | | |
| Emissions from construction and/or development? | Increase | 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.<br><br>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. | | 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 $CO_2$ to deliver. | |

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| Carbon capture (e.g. through trees)? | None | | | | |

Identify any emissions impacts associated with this decision which 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.

Will the proposal affect Council services' resilience to climate change, or the capacity of people living in the Borough to adapt to climate change?

*The climate in Rotherham is already changing, with visible impacts throughout the Borough. Hotter summers are increasing the risk of extreme temperatures such as those experienced in July 2022, as wetter winters and more intense rainfall are increasing the risk of floods such as those in 2007, 2019 and 2023. More information on climate change impacts in Rotherham is available from: https://www.reports.esriuk.com/view-report/b8eb3cee8f764147a2cfcd69cf36238f/E08000018*

- *Do actions recommended in the report affect the ability of Council services to continue during, or recover after extreme heatwaves, flooding and other climate-related hazards?*
- *Will the proposal affect resident's capacity to adapt to climate change impacts?*
- *Will the proposal affect the risk of climate change impacts in the Borough of Rotherham?*

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 on two trials with what we believe to be the Worlds first Carbon Negative asphalt. This asphalt incorporates 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

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| 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. |

| Supporting information: | |
|---|---|
| Climate Impact Assessment Author | Andy Saxton<br>Highway Asset and Drainage Manager<br>Community Safety and Street Scene<br>Regeneration and Environment |
| Please outline any research, data or information used to complete this Climate Impact Assessment. | |
| 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. | |
| Validation | Tracking Reference: CIA 626<br><br>Matteo Martini<br>Principal Decarbonisation Officer |