

User guidance:

- The first section of this form guides users through considering major areas where emissions are likely to occur. If emissions are impacted in a way not covered by these categories, please identify this at the bottom of the section
- The first section should be filled as such:
 - **Impact:** identify, in relation to each area, whether the decision of the proposal does the following: *reduces emissions*, *increases emissions*, or has *no impact on emissions*. If it is uncertain this section can be labelled *impact unknown*
 - If **no impact on emissions** is identified: no further detail is needed for this area, but can be added if relevant (e.g. if efforts have been made to mitigate emissions in this area.)
 - **Describe impacts or potential impacts on emissions:** two sections deal respectively with emissions from the Council (including those of contractors), and emissions across Rotherham as a whole. In both sections please explain any factors that are likely to reduce or increase emissions. If **impact unknown** has been selected, then identify the area of uncertainty and outline known variables that may affect impacts.
 - In most cases there is no need to quantify the emission impact of an area after outlining the factors that may reduce or increase emissions. In some cases, however, this may be desirable if factors can be reduced to a small number of known variables (e.g. if an emission impact is attached to a known or estimated quantity of fuel consumed).
 - **Describe any measures to mitigate emission impact:** regardless of the emission impact, in many cases steps should be taken in order to reduce mitigate all emissions associated with each area as far as possible; these steps can be outlined here (For example: if a proposal is likely to increase emissions but practices or materials have been adopted in order to reduce this overall impact, this would be described here).
 - **Outline any monitoring of emission impacts that will be carried out:** in this section outline any steps taken to monitor emission levels, or steps taken to monitor the factors that are expected to increase or reduce emission levels (for example, if waste or transport levels are being monitored this would be described here)
- A **summary paragraph** outlining the likely overall impacts of the proposal/decision on emissions should then be completed - this is not required if the proposal/decision has no impact across all areas.
- The supporting information section should be filled as followed:
 - Author/completing officer
 - **Research, data, or information** may refer to datasets, background documents, literature, consultations, or other data-gathering exercise. These should also be added to the **supporting documents** section of the cabinet report

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- Carbon Impact Assessments are to be appended to the associated cabinet reports
 - Prior to publishing reports, Carbon Impact Assessments should be sent to climate@rotherham.gov.uk for feedback
 - Report authors may also use the above email address to direct any further queries or to access further support regarding completing the assessment

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?	<i>no impact on emissions</i>				

Emissions from transport?	<i>reduces emissions</i>	<p>Operation and maintenance of traffic signals can be expected to result in a small increase in carbon emissions. Power consumption associated with the signals is estimated 3,000 kWh p.a., resulting in 543 kg of CO₂ emissions p.a. at 2020 UK average carbon intensity of electricity generation of 181 gCO₂/kWh.</p> <p>The scheme includes improved pedestrian crossings, which may encourage mode shift from car to foot. However, given trips of up to 1 mile (i.e. those lending themselves to walking) account for just 1% of car mileage associated with Rotherham trip-ends, this saving is likely to be negligible.</p> <p>There will be savings associated with maintenance and lighting for the subways which are to be removed as a consequence of the scheme.</p>	<p>The scheme forms part of, and has been appraised as part of, the joint Sheffield Rotherham Clean Air Plan (i.e. interventions in both Sheffield and Rotherham), which is estimated to save circa 1.3 kt p.a. CO₂ in 2022, or about 0.2% of 2018 road transport emissions in Rotherham, compared against business as usual.</p> <p>This forecast saving is around 2,500 times greater than the estimated carbon footprint of powering the traffic signals.</p> <p>The most significant savings are seen on Sheffield Parkway – about 90% of the savings are seen here. This is likely an effect of reduced vehicle speeds consequential to the 50mph speed limit reducing emissions, but also of re-assignment of some traffic away from the Parkway to quicker routes given increased journey times (especially off peak) as consequence of the speed limit. This reassignment does not appear to be onto other roads in Rotherham; it may be the reassignment is on to roads into Lower Don Valley in Sheffield. As such a proportion of the apparent saving may not be a real saving of emissions, but instead an ‘off-shoring’ of emissions.</p>	Signals equipment will be of low voltage type as is now standard practice.	
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Emissions from waste, or the quantity of waste itself?	<i>increase emissions</i>	A one-off carbon footprint can be expected from disposals arising from site clearance and excavation. Emissions can be expected upon disposal of signals equipment at lifecycle maintenance.			
Emissions from housing and domestic buildings?	<i>no impact on emissions</i>				
Emissions from construction and/or development?	<i>increase emissions</i>	There will be some negative environmental impacts in relation to the extraction and transportation of materials for the scheme along the supply chain, and with the construction of the scheme locally. These impacts are considered to be typical for a scheme of this scale.			
Carbon capture (e.g. through trees)?	<i>Impact unknown</i>				

Identify any emission impacts associated with this decision that have not been covered by the above fields:

- CAZ scheme has been developed and is required in order to reduce NO₂ specifically but will have impacts on other pollutants as outlined in general above.

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

Construction of the signals can be expected to result in one-off increase in emissions, and a small increase in emissions can be expected as consequence of the operation and maintenance of the signals. These are estimated to be small compared to the 1.3kt p.a. saving forecast in Rotherham as a consequence of the Clean Air Zone package, although it should be noted almost all of this saving relates to the reduced speed limit on Sheffield Parkway and not measures at Bellows Road, and also that a proportion of this may be an 'off-shoring' of emissions associated with traffic redistribution, rather than a genuine saving.

Supporting information:

Reports to cabinet regarding air quality and requirements on RMBC to improve it in shortest time possible.

- The National Air Quality Plan, published by Department for Environment, Food and Rural Affairs (DEFRA) in July 2017
- Cabinet report 17/12/2018 – Item 83 [Improving Air Quality in Rotherham](#)
- Cabinet report 22/3/21 - Item 134 :[SCC/RMBC Clean Air Zone Programme-Approval to deliver Rotherham's Air Quality Measures Projects](#)

Completed by: (Name, title, and service area/directorate).	Nat Porter, Senior Transport Planner, Transportation Infrastructure Service, Regeneration & Environment
Please outline any research, data, or information used to complete this [form].	CAZ savings, and trip length distribution, derived from modelling using Sheffield City Region Transport Model 1. Estimates of power consumption at signals from UKERC 'Quick Hits – 3. Traffic Signals (2006), adjusted in light of local officer experience. UK Electricity Carbon Intensity from National Grid.
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.	Carbon intensity of Electricity taken to be 181 g / kWh. Carbon intensity of road traffic is modelled utilising SATURN and ENEVAL, and reflect forecast speeds and flows using industry standard curves.
Tracking [to be completed by Policy Support / Climate Champions]	