

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?	No impact on emissions				
Emissions from transport?	No impact on emissions		The decision to adopt the strategy will not impact emissions in and of itself, but a reduction in transport emissions could be expected upon implementation of actions arising from it. Further detail below.		
Emissions from waste, or the quantity of waste itself?	No impact on emissions				
Emissions from housing and domestic buildings?	No impact on emissions				
Emissions from construction and/or development?	No impact on emissions		The decision to adopt the strategy will not impact emissions in and of itself, but an increase in construction emissions might be expected upon implementation of actions arising from it. Further detail below.		

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

The decision to adopt the strategy will, in and of itself, have negligible impact on carbon emissions. Subsequent delivery of schemes, and realisation of outcomes, can be expected to deliver carbon impacts as set out below, but these are noninherent consequential from adoption of a strategy in and of itself.

Were the strategy hypothetically deliver in full immediately, the Propensity to Cycle Tool[1] forecasts a saving of 2.9 kt CO₂ p.a. from all commutes into, out of or within the Borough, in a scenario where cycling were as common as in the world leading cycling nation (the Netherlands), accounting for commute trips lengths and topography in Rotherham.

Applying factors to account for non-commuting trips based on proportions of cycle miles travelled for differing purposes in England [2] and the Netherlands [3], and assuming this additional cycle travel abstracts from car use at the same proportion as for commutes, gives an estimated saving for all trip purposes of 8.8 – 12.0 kt CO₂ p.a.

This amounts to approximately 1.4-1.9% of transport emissions in Rotherham [4], or an estimated 2.5-3.4% of car emissions in the Borough [5].

A number of caveats should be applied to these numbers –

- There is uncertainty around non-commuting travel patterns, as well as any sustained impacts on travel following the COVID-19 pandemic;
- The commute carbon savings include for carbon saved in adjacent districts on cross boundary trips, including that outside of Rotherham;
- Fixed travel demand is assumed, however in there may be second order effects that might impact on demand for travel or use of cars - for example –
 - Reductions in congestion resulting from mode shift to car to cycle may encourage new or longer car trips in the same way provision of new road capacity can be expected to induced demand; and,
 - Mode shift from public transport to cycle may undermine commercial viability of bus services and may result in reduced services; this may result in reduced bus mileage (and a carbon saving) and increased car mileage (and so additional carbon emissions).

- Savings will be eroded over time if / where alternative decarbonisation policies (e.g. shift to electric vehicles, travel demand management) reduce carbon emissions in the counterfactual 'no cycling uplift' scenario (i.e. carbon can only be saved once);
- Uptake of e-bikes and/or e-scooters may enable more and/or longer trips to shift from car to cycle than forecast. The Propensity to Cycle Tool scenario quoted considers e-bike usage as it stood in the Netherlands in 2010-2016. Future impacts of e-bikes are uncertain – the Propensity to Cycle tool includes an 'e-bikes' scenario based on behaviours in the Netherlands in the period 2013-2016. This is thought to overstate likely potential amongst the general population as this is likely to reflect enthusiastic behaviour of early adopters, however, the estimate of approximately a doubling of carbon savings might give a useful if likely optimistic estimation of the additional potential saving;
- Delivery of the strategy will be heavily dependent on Government funding. The national Transport Decarbonisation Plan [6] estimates just 0.1 – 0.5% of surface transport emissions saved by the plan in the period 2020-2050 to result from active travel activity (walking and cycling). Whilst this in part will reflect savings achieved in the 'no active travel policy' counterfactual by (in particular in the context of that plan) electric car deployment, it also appears to relate to a lesser ambition / less of commitment to delivery than would be required to achieve the savings estimated above.

Additional carbon emissions can be expected by construction of cycling infrastructure. No local figure sare available for this, but the International Energy Authority estimates, for a scenario in which approximately 5% of car emissions are saved globally by shifts to walking and cycling by 2030, these additional emissions would amount to less than 5% of the emissions savings in the period to 2050 [7].

These impacts will be subject to Carbon Impact Assessment as individual schemes and programmes come forward for approval.

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

Adoption of the strategy will have negligible impact on emissions. Impacts of schemes bought forward in support of the strategy will be subject to their own Carbon Impact Assessments.

Supporting information:	
Completed by: (Name, title, and service area/directorate).	Nat Porter Senior Transport Planner Transportation Infrastructure Service Regeneration and Environment
Please outline any research, data, or information used to complete this [form].	<p>[1] Propensity to Cycle Tool https://www.pct.bike/ (accessed Dec 2019)</p> <p>[2] A factor of 3.06 is applied based on National Travel Survey table NTS0409 (2019).</p> <p>[3] A factor of 4.17 is applied based on <i>Fietsfeiten</i> (<i>Kennisinstituut voor Mobiliteitsbelied</i>, 2018) (Figure for 2016).</p> <p>[4] Total territorial transport emissions of 645.7 kt CO₂ in 2019 per BEIS UK local and regional CO₂ emissions: statistical release 2021</p> <p>[5] Based on RMBC and SYSTRA analysis of Sheffield City Region Transport Model 1, with reference to the 2020 BEIS estimation of 2018 emissions.</p> <p>[6] Decarbonising Transport - A Better, Greener Britain (DfT, 2021)</p> <p>[7] Net Zero by 2050 (International Energy Agency, 2021)</p>
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.	Refer to meta data for sources quoted above.
Tracking [to be completed by Policy Support / Climate Champions]	Sam Blakeborough, Policy Officer, PPI, ACEX