

A38 Derby Junctions

TR010022

**8.122 Applicant's Responses to the
Secretary of State's Consultation letter
issued 7th January 2022**

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Introduction

This document sets out National Highways' (the Applicant's) response to the Secretary of State's Consultation letter of 7th January 2022 (the Letter) which contains requests for further information from the Applicant and others.

This response is laid out in 4 parts to correspond with the 4 parts of the Secretary of State's Letter. Section 1 is sub-divided into parts (a), (b)(i), (b)(ii) and (b)(iii)

1 Request for comments from the Applicant on other responses to the Statement of Matters

On 31 August 2021, the Applicant provided a response to the Secretary of State's (SoS) Statement of Matters dated 2 August 2021 (the SoM). A total of 12 other parties have since provided responses to the SoM.

Following this, the SoS requests that the Applicant provides:

- a. Any comments on the responses to the Statement of Matters. The Secretary of State in particular invites the Applicant to respond to comments regarding potential deficiencies or issues which other parties may have contended exist in respect of the Applicant's response to the Statement of Matters.**

Applicant's response

Appendix A provides the Applicant's comments on the responses made by Interested Parties to the SoM and the Applicant's response to the SoM.

It should be noted that (apart from the local authorities, statutory bodies and the Derby Climate Coalition) most of the responses do not relate directly to the SoM, instead they repeat points of objection that were made, and where relevant considered, during the DCO Examination.

Where an issue raised within a response has been dealt with previously by the Applicant and there is no change to that response, for instance in the Applicant's submissions to the Examination, a cross reference to that response or document is provided to avoid unnecessary duplication. The information provided in this document should, therefore, be read in conjunction with the material to which cross references are provided.

For the avoidance of doubt, where the Applicant has chosen not to comment on matters raised by an Interested Party, it is not an indication that the Applicant agrees with the point or comment raised or opinion expressed in that response.

Mair Bain and Dr Boswell (representing Derby Climate Coalition) written submissions

Mair Bain has provided a response to the SoM and the Applicant's response to the SoM, which is supported by a report submitted by Dr Boswell. As there is considerable crossover between these documents, the Applicant has addressed them together to avoid unnecessary duplication.

A response to the SoS in respect of the points raised by Mair Bain and Dr Andrew Boswell relating to the traffic model study area and assessment undertaken using traffic model data as well as inconsistencies in data between the Environmental Statement and the Applicant's response to the SoM are addressed in Section 1b below.

A number of further information requests raised by the SoS in Section 3 also cover subjects raised by Mair Bain and Dr Boswell in their written submissions. These include:

- The assessment of direct, indirect and cumulative emissions including consideration of the Road Investment Strategy (RIS)
- Selection of the study area for the Scheme greenhouse gas emissions assessment and the consideration of local, regional and national level carbon targets and budgets.
- The carbon impacts of the Scheme including the test against national carbon budgets and whether the Scheme will have a material effect on the UK meeting its carbon reduction targets
- Application of the requirements of the National Policy Statement for National Networks (NPS NN) with regard to carbon assessment
- The impact of the Scheme in the context of the UK's Nationally Determined Contribution (NDC), the Paris Agreement and The UK's Net Zero Strategy
- How the assessment complies with the Environmental Impact Assessment Regulations

The Applicant has responded to matters covering these areas in Section 3 below.

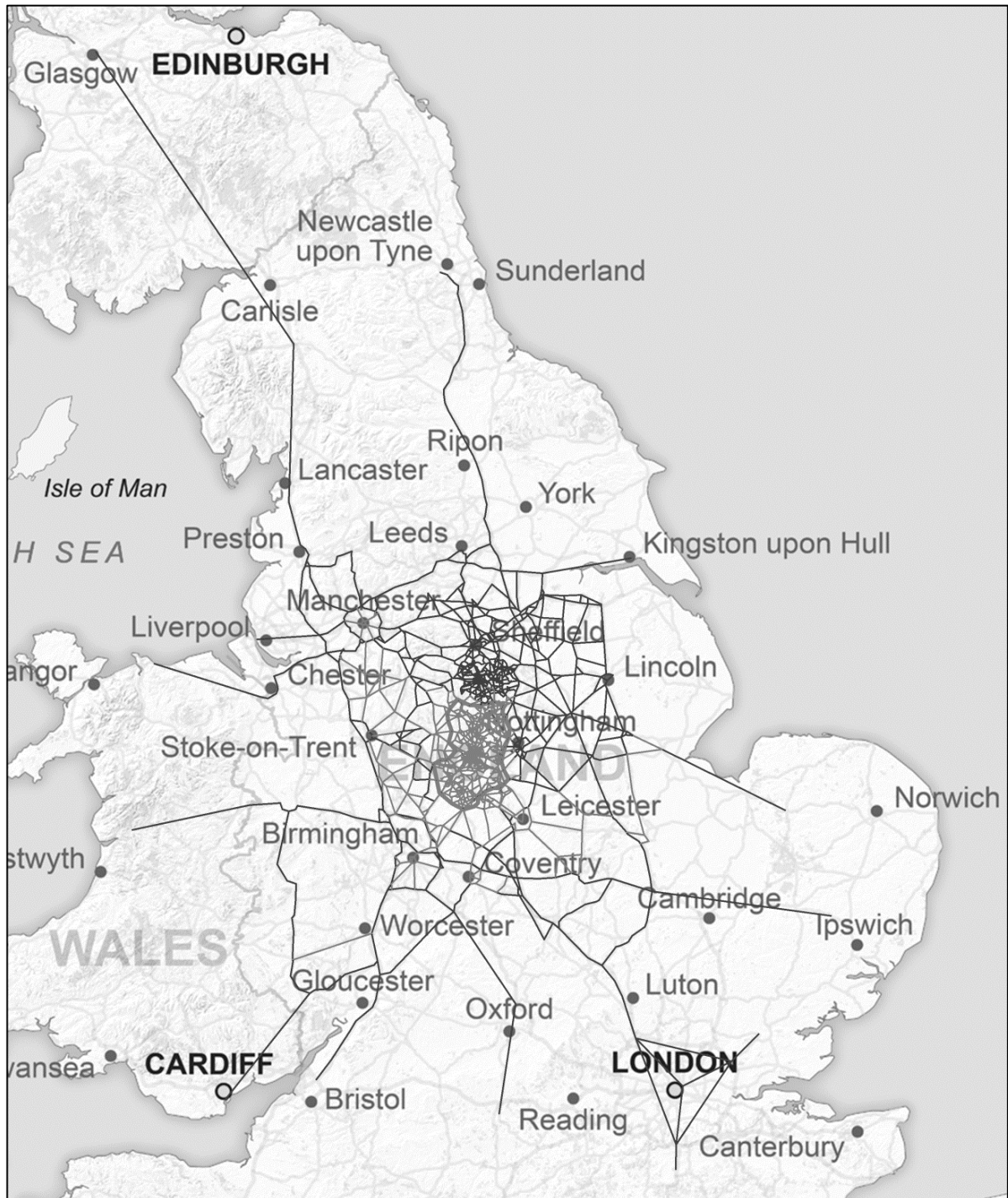
Points raised by Mair Bain and Dr Boswell that are not covered in the response provided to the Secretary of State are provided in Appendix A.

b. In so far as not specifically addressed in the comments provided under paragraph a) above:

(i) in response to section 9.1 of the Report from Dr Boswell submitted on behalf of Mair Bain and Derby Climate Coalition, the definition of the study areas referred to as the 'whole traffic model study area' referred to in Environmental Statement ('ES') sections 5.6.9 [APP-043] and 14.6.3 [APP-052], and the 'entire modelled road network' referred to in ES sections 5.10.63 to 5.10.65 [APP-043].

Applicant's response

The "whole traffic model study area" for the A38 Derby Junctions scheme and "the entire modelled road network" for the A38 Derby Junctions scheme are the same. These road links are indicated in the following Figure:



(ii) clarification as to what assessments have been carried out in relation to the 'affected road network', the 'area of detailed modelling', the 'whole traffic model study area' and the 'entire modelled road network' and how they interact,

Applicant's response

The “whole traffic model study area” and “entire modelled road network” are the same. The traffic data from the routes was used in the TAG transport economic efficiency appraisal and the road user greenhouse gas emission calculations (Tables 5.6-5.7 of [APP-043]). It covers a large area so that any changes by road users to route choices will be included in the modelling.

The “affected road network” for regional emissions is defined in section 5.6.8 [APP-043] and comprises the roads that are required to be assessed for regional emissions by the DMRB Air Quality guidance (Highways Agency, 2007), that is, have a sufficiently large change in flows, speed or position to be included in the assessment. It is smaller than the “entire modelled road network” and is used primarily to calculate the change in emissions of local air pollutants (NO_x and PM₁₀).

The “area of detailed modelling” for traffic is shown in Figure 3.1 of the Transport Assessment Report [REP3-005] and is discussed in that report. It is smaller than the “entire modelled road network”. This traffic data was used for the road safety appraisal.

(iii) in light of section 3.1 of [the Report from Dr Boswell submitted on behalf of Mair Bain and Derby Climate Coalition](#), the Secretary of State notes that the figures set out in Tables 14.15 and 14.16 of ES Chapter 14 [APP-052] regarding the impact of the Proposed Development on the carbon budgets are different to the figures set out in Table 2-2 of [the Applicant's response to the Statement of Matters](#), and requests that the Applicant provides an explanation for this difference in the figures, including which set of figures the Applicant considers that the Secretary of State should rely at the point of making his decision on the scheme.

Applicant's response

The variation in data reported in tables 14.15 and 14.16 of ES Chapter 14 [APP-052] and the data reported in Table 2-2 of the Applicant's response to the SoM has occurred due a refinement in the assessment methodology as well as an update to the Emissions Factor Toolkit (EFT), used to calculate road vehicle emission rates for a specified year based on road type, vehicle speed and vehicle fleet composition.

Emissions Factor Toolkit (EFT) update

For the 2018 ES, road user emissions were calculated for a 60-year period using National Highways' Interim Advice Note (IAN) 185/13: Speed Banded Emission Factors v3.1 based on EFTv8. This was the latest guidance and toolkit available at the time. The output from the assessment was reported in Tables 5.7-5.8 of ES chapter 5 [APP-043] and repeated in Table 14.15 of ES chapter 14 [APP-052] and was used to inform the climate assessment in [APP-052].

For the Applicant's response to the SoM in 2021, DMRB v.8 based on EFT v.10, the latest available at the time, was used for the assessment of road user emissions. This updated version allows for a greater uptake of low emission and electric vehicles.

Guidance

At the time the 2019 ES Chapter was produced, DMRB LA 114 Climate, providing guidance on undertaking and reporting assessment of greenhouse gas emissions, had not been published. As such, no specific guidance on the approach for assessing and reporting road user emissions was available.

Table 14.15 from the 2018 ES presents predicted annual emissions from the 2018 road user emissions assessment for do minimum and do something scenarios for the opening year (2024) and design year (2039) of the Scheme.

Operational emissions presented in Tables 14.16 of the ES, presenting the impact of the Scheme against the Fourth and Fifth Carbon Budgets is presented based on the average annual emissions during the 60-year period assessed.

Table 2-2, in the Applicant's response to the SoM, presents the predicted annual emissions for operation which includes road user emissions, lighting and maintenance. It also includes an assessment against the Sixth Carbon Budget Period.

Since the Applicant's response to the SoM in 2021, there have been further updates to the National Highways carbon tool, the EFT and the set of emissions factors published by the Department for Business Energy and Industrial Strategy (BEIS). Therefore, the calculations have now been updated again, using the National Highways carbon tool v2-4 to calculate embodied carbon associated with construction materials and replacement materials during operational maintenance. The latest EFT (v11) has also been used to update the road user emissions figures, and the latest BEIS emissions factors (2021) have been used to update the operational energy use figures. The outputs of this updated assessment are presented under the response to Question 3 below. It is recommended that the SoS use this updated assessment in making his decision on the Scheme.

2 Request for comments from the Applicant following the Environment Agency's response to the Statement of Matters

The Secretary of State notes the Environment Agency's response of 26 October 2021 to the Statement of Matters, which states that new climate change allowances for flood risk assessments were published on 20 July 2021. The Secretary of State

invites the Applicant to consider the Proposed Development against these new allowances and to confirm whether any updates are required in light of this.

Applicant's response

The Environment Agency's comments refer to the Little Eaton junction modelling of the River Derwent. Since the modelling of the River Derwent was undertaken using a fluvial model, and a +50% climate change allowance was applied for the 100-year event – this was appropriate at the time of the flood risk assessment for an 'upper end, 2080s epoch' climate change scenario, since this allowance corresponded with the expected lifetime and vulnerability classification of the Scheme, and was confirmed by the Environment Agency. The new climate change allowances indicate that for the same scenario, the allowance percentage should now be +63%.

In terms of relative change between the existing baseline and Scheme arrangements, it is considered that the application of a higher climate change allowance (+63%) would result in similar impacts on flood depth differences to those demonstrated using the previous climate change allowance (+50%) and no change to the conclusions of the ES, which were accepted by the Environment Agency.

In terms of absolute change, when running models of the Scheme arrangement for a +20% climate change scenario and a +50% climate change scenario, the 1D flood levels at the A38 Little Eaton junction bridge over the River Derwent were as follows:

- 100yr+20%CC = 51.11m AOD
- 100yr+50%CC = 51.25m AOD

By linear extrapolation, the flood level in the 100yr+63%CC scenario would be 51.31m AOD. This provides a reasonable indicator of the typical change in flood levels that would result from the increased climate change.

Note -

- *Relative change* refers to the difference in flood levels during a 1% Annual Exceedance Probability (AEP) +63%CC event between the baseline/pre-scheme scenario and the proposed/post-scheme scenario (or indeed any event where you compare results between the two scenarios)
- *Absolute change* refers to the difference in flood levels during a 1% AEP +50%CC event (which has been modelled) and a 1% AEP +63%CC event (which hasn't) for the same scenario.

Furthermore, based on Environmental Statement Appendix C2 in the Little Eaton Flood Risk Assessment, essentially the entirety of the Scheme footprint is not affected by flooding in the 100yr+50%CC event. It is therefore considered that the 63% climate change scenario would not increase flood depths/ levels sufficiently to significantly impact the Scheme.

In conclusion, whilst application of a 63% climate change allowance scenario will increase flood depths/ levels, the relative impacts of the Scheme in terms of flood risk would be similar to those accepted when applying a 50% climate change allowance, and the absolute impacts on the Scheme would not be significant, such that there would be no change to the ES conclusions nor any requirement for any Scheme design revisions or changes to the defined flood risk mitigation measures.

As such, the change in the climate change allowance from +50% to +63% would not result in a material change to the flood risk effects and conclusions as detailed in the Environmental Statement.

3 Request for additional information from the Applicant on the cumulative assessment of climate impacts

The Secretary of State invites the Applicant to update its response of 31 August 2021 to the Statement of Matters to provide (or, to the extent that it has already been provided, identify) its assessment of the cumulative effects of Greenhouse Gas emissions from the scheme with other existing and/or approved projects on a local, regional and national level on a consistent geographical scale (for example an assessment of the cumulative effects of the Road Investment Strategy ('RIS') 1 and RIS 2 at a national level).

This should: take account of both construction and operational effects; identify the baseline used at each local, regional and national level; and identify any relevant local, regional or national targets and/or budgets where they exist (including the carbon budgets, the 2050 net zero target under the Climate Change Act 2008, and the UK's Nationally Determined Contribution under the Paris Agreement). It should be accompanied by reasoning to explain the methodology adopted, any likely significant effects identified, any difficulties encountered in compiling the information, and how the assessment complies with the Environmental Impact Assessment Regulations.

The Secretary of State would also welcome confirmation that the response to all parts of this question has been prepared by a competent expert. Please can links be provided to any documents referenced and their relevance fully explained.

Applicant's Response

The Applicant's response to this request is broken down into the following constituent parts:

- National Highways' updated assessment of the cumulative effects of greenhouse gas emissions from the A38 Derby Junctions, (the Scheme) with other existing and/or approved projects;
- The updated assessment is at a national, regional and local scale accounting for construction and operational contributions;

- How the updated assessment identifies the baseline used at each local, regional and national level compares against any identified relevant local, regional or national carbon targets and/or budgets (including the carbon budgets, the 2050 net zero target under the Climate Change Act 2008 and the UK's Nationally Determined Contribution under the Paris Agreement);
- How the assessment was undertaken to evaluate the likely significant effects of the Scheme and any difficulties encountered in compiling the information;
- How the assessment presented for the Scheme complies with the Environmental Impact Assessment Regulations;
- A confirmation that this response has been prepared by competent experts.

Assessment of Cumulative Effects of Greenhouse Gas Emissions from the Scheme with other Existing and/or Approved Projects

National Highways follows the advice set out in the Design Manual for Roads and Bridges (DMRB) for the design and evaluation of the impact of any of its road schemes. This ensures consistency in how any scheme is progressed and how the outcomes are evaluated.

The environmental assessment work was completed before updates to the DMRB were made (i.e. cumulative effects covered in DMRB LA 104 and LA 114 for climate). However, the methodology used for the climate assessment in Chapter 14 of the ES [APP-052] is consistent with the EIA Regulations and substantially follows that set out in LA 114 and so National Highways does not consider that the results of the assessment would be materially different if it were undertaken using the LA 114 methodology. The LA 114 methodology is based on the legal requirements outlined in the Climate Change Act 2008 and uses the principles of PAS 2080:2016 – 'Carbon Management in Infrastructure' therefore, this assessment, which aligns to these, is in line with LA 114.

In respect of the cumulative assessment for the Scheme, guidance provided in DMRB Volume 11, Section 2, Part 5: Assessment and Management of Environmental Effects' and the Planning Inspectorate 'Advice Note Seventeen: Cumulative Effects Assessment' (August 2019) was followed as these documents were considered to represent best practice for cumulative effects assessments at the time the scheme assessment was undertaken. The assessment is set out in Chapter 15 [APP-053] of the ES

For the climate assessment, construction related CO₂e emissions were quantified following PAS 2080:2016 – 'Carbon Management in Infrastructure' principles using Highways England Carbon Tool. DMRB, Volume 11, Section 3, Part 1 Air Quality: HA 207/07 was used to quantify the CO₂e operational emissions. This approach is set out in Chapter 14 [APP-052] of the environmental statement.

Updated DMRB guidance, LA 104, Environmental assessment and monitoring¹, provides the following overarching advice on the assessment and evaluation of cumulative impacts on pages 17-18:

“Paragraph 3.21 Environmental assessments shall assess cumulative effects which include those from:

- 1) a single project (e.g. numerous different effects impacting a single receptor); and*
- 2) different projects (together with the project being assessed).*

Paragraph 3.21.2 The assessment of cumulative effects should report on:

- 1) roads projects which have been confirmed for delivery over a similar timeframe;*
- 2) other development projects with valid planning permissions or consent orders, and for which EIA is a requirement; and*
- 3) proposals in adopted development plans with a clear identified programme for delivery.*

Paragraph 3.22 The assessment of cumulative effects shall:

- 1) establish the zone of influence of the project together with other projects;*
- 2) establish a list of projects which have the potential to result in cumulative impacts; and*
- 3) obtain further information and detail on the list of identified projects to support further assessment.”*

The assessment of carbon dioxide (CO₂) undertaken has assessed the construction and operational effects of the Scheme as follows:

- Construction – the materials and energy used in plant and vehicles required to construct the Scheme;
- Operational – emissions produced by vehicles using the completed Scheme and associated journeys from the wider road network that incorporate or have a change in their journey following opening of the scheme; emissions produced by operational maintenance activities and energy use over its design life (i.e. 60 years).

The traffic modelling for the Scheme has been undertaken in line with Transport Appraisal Guidance published² by the Department for Transport (DfT). The Transport Assessment Report for the Scheme was submitted to the DCO examination [APP-253]. The traffic model used for the Scheme has been developed in line with DfT requirements and is **inherently cumulative**. This is because, in brief, the traffic models used to support the Scheme assessment contain data about the following:

- 1) The proposed Scheme and adjoining Strategic Road Network and local road network;
- 2) Other schemes promoted by National Highways in the near vicinity of the proposed Scheme with high certainty that they are to be progressed i.e. progressed beyond preferred route announcement stage;

¹ <https://www.standardsforhighways.co.uk/prod/attachments/0f6e0b6a-d08e-4673-8691-cab564d4a60a?inline=true>

² <https://www.gov.uk/guidance/transport-analysis-guidance-tag>

- 3) Foreseeable developments promoted by third parties likely (based on discussions with the relevant planning authorities) to be developed in a similar timeline to the proposed National Highways' scheme. Knowing where the proposed third party development is to be sited, the extents and types of development, and the timescales of when it is to be constructed and completed are requirements to ensure that the third party developments can be reasonably described in the traffic model; and
- 4) National government regional growth rates which include a representation of likely growth rates excluding known planning developments already included in the traffic model. This is represented by DfT's NTEM/TEMPRO³ growth factors for car usage, and growth in freight is derived from DfT's National Transport Model⁴.

In terms of operational carbon, the Applicant has evaluated the changes in CO_{2e} emissions of the proposed Scheme by comparing changes in the road traffic on the Strategic Road Network and local road network between the 'without scheme scenario' and the 'with scheme scenario'. This takes into account the assessment of the proposed Scheme and all other developments likely to have an influence on the proposed road Scheme and on the area the proposed road Scheme is likely to influence.

In essence, as both with and without scheme scenarios already include all likely developments and traffic growth factors, the assessment is inherently cumulative as regards operational carbon emissions. This is recognised in general terms in paragraph 3.4.4 of the Planning Inspectorate's Advice Note 17 ("Cumulative effects assessment relevant to nationally significant infrastructure projects"), the first two sentences of which state that:

"Certain assessments, such as transport and associated operational assessments of vehicular emissions (including air and noise) may inherently be cumulative assessments. This is because they may incorporate modelled traffic data growth for future traffic flows. Where these assessments are comprehensive and include a worst case within the defined assessment parameters, no additional cumulative assessment of these aspects is required (separate consideration may be required of the accumulation or inter-relationship of these effects on an individual set of receptors e.g. as part of a socio economic assessment)."

The Appropriate Geographical Scale of Assessment of Greenhouse Gas Emissions,

In line with the requirements set out in Climate Change Act 2008⁵ (CCA 2008), Part 1, Section 4 (see below) parliament has set carbon budgets⁶ at the national scale.

"Carbon budgets

- 1) *It is the duty of the Secretary of State—*

³ <https://www.gov.uk/government/publications/tempo-downloads>

⁴ <https://www.gov.uk/government/publications/national-transport-model-ntmv2r-overview-of-model-structure-and-update>

⁵ https://www.legislation.gov.uk/ukpga/2008/27/pdfs/ukpga_20080027_en.pdf

⁶ <https://www.gov.uk/guidance/carbon-budgets>

(a) to set for each succeeding period of five years beginning with the period 2008-2012 ("budgetary periods") an amount for the net UK carbon account (the "carbon budget"), and

*(b) to ensure that the **net UK carbon** account for a budgetary period does not exceed the carbon budget" [our emphasis].*

Carbon budgets cover the following 11 sectors:

1. Surface Transport
2. Buildings
3. Manufacture and Construction
4. Electricity Generation
5. Fuel Supply
6. Agriculture and land use, land use change and forestry
7. Aviation
8. Shipping
9. Waste
10. Fluorinated gases (F-gases)
11. Greenhouse gas removals

The national carbon budgets are themselves cumulative i.e. the sum of carbon emissions from a range of sectors between now and the end of the 6th carbon budget (2037).

The CCA 2008 does not impose a legal duty to set carbon budgets at a smaller scale than those set out nationally i.e. regional or local budgets are not required. Specifically:

- a) In setting carbon budgets Parliament has not imposed any legal duty upon local authorities to attain any particular targets whether carbon budgets or for net zero 2050. i.e. there are no legal duties which require particular geographical areas within the UK to achieve particular reductions in carbon emissions by particular dates.
- b) Neither Parliament nor Government has identified any sectoral targets for carbon reductions related to transport, or any other sector. There is no requirement in the CCA 2008, or in Government policy, for carbon emissions for all road transport to become net zero. This was explained in the ***R(Transport Action Network) v Secretary of State for Transport*** [2021] EWHC 2095 (Admin) ("the TAN case") in which Holgate J held that:

"...there is no sectoral target for transport, or any other sector, and that emissions in one sector, or in part of one sector, may be balanced against better performance in others. A net increase in emissions from a particular policy or project is managed within the government's overall strategy for meeting carbon budgets and the net zero target as part of "an economy-wide transition."

- c) A net increase in emissions from a particular policy or project is thus managed within the Government's overall strategy for meeting carbon budgets and the net zero target as part of an economy-wide transition.

There is, therefore, no legal requirement to assess the impact of an individual project against the total carbon emissions from RIS 1 and RIS 2.

To conduct an impact assessment at a local or regional scale some form of baseline would need to be identified, and that baseline would need to comprise:

- a) A forecast of carbon emissions from all cumulative sources relevant to the geographic / sectoral scale being adopted;
- b) A forecast which addresses the time frame relevant to the proposed road scheme;
- c) A forecast which reflects existing government policy to attain the 6th carbon budget and net zero 2050; and
- d) A forecast which does not include carbon emissions from the proposed road scheme (to avoid double counting).

The Government sets carbon budgets at a national level in accordance with the CCA 2008. Carbon budgets are not produced at a local or regional level.

National Highways is therefore unable to produce a baseline at a local or regional scale itself. Such a baseline would have to be consistent with the Government's understanding of the likely implications of its policies over time in a particular geographic area. In relation to carbon reductions, those policies are myriad and extend to matters beyond the planning system and into issues relating to the use of fiscal incentives / disincentives to manage carbon emissions across the country as a whole.

Relevant to this request for information is that an environmental statement is required to include such information as is reasonably required to assess the environmental effects of the development and which the applicant can reasonably be required to compile having regard to current knowledge (see *R. (Khan) v London Borough of Sutton* [2014] EWHC 3663 (Admin) and *Preston New Road Action Group v Secretary of State for Communities and Local Government* [2018] Env. L.R. 18).

There is no reasonable basis upon which National Highways can assess the carbon emissions impact of the Scheme at a local or regional level and it is not required to do so by law or by the National Policy Statement for National Networks (NPS NN)⁷

Accordingly, National Highways is not in a position to provide an assessment of the cumulative effects of the greenhouse gas emissions for the Scheme for anything other than at the national level carbon budgets.

How the Assessment Complies with Various Carbon Budgets and Wider Carbon Policies

Overall compliance with, or attainment of, 'carbon budgets' and 'the 2050 zero target' under CCA 2008, and the 'UK's Nationally Determined Contribution' under the Paris Agreement are the responsibility of Government to manage as they are matters of national policy and not policies set at an individual scheme level.

⁷ https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/387223/npsnn-web.pdf

The NPS NN sets the national policy framework against which decision makers can evaluate the outcomes of proposed road infrastructure project. The NPS NN sets policy advice across a range of topics such as air quality, noise, biodiversity and carbon (see paragraphs 5.16 to 5.29 pages 49 and 50).

The specific advice on the evaluation of carbon impacts from a proposed scheme and decision making considerations is set out in paragraphs 5.17 and 5.18 respectively.

“Applicant’s assessment

5.17 *Carbon impacts will be considered as part of the appraisal of scheme options (in the business case), prior to the submission of an application for DCO. Where the development is subject to EIA, any Environmental Statement will need to describe an assessment of any likely significant climate factors in accordance with the requirements in the EIA Directive. It is very unlikely that the impact of a road project will, in isolation, affect the ability of Government to meet its carbon reduction plan targets. However, **for road projects applicants should provide evidence of the carbon impact of the project and an assessment against the Government’s carbon budgets.** [our emphasis].*

“Decision making

5.18 *The Government has an overarching national carbon reduction strategy (as set out in the Carbon Plan 2011) which is a credible plan for meeting carbon budgets. It includes a range of non-planning policies which will, subject to the occurrence of the very unlikely event described above, ensure that any carbon increases from road development do not compromise its overall carbon reduction commitments. The Government is legally required to meet this plan. Therefore, any increase in carbon emissions is not a reason to refuse development consent, unless the increase in carbon emissions resulting from the proposed scheme are so significant that it would have a material impact on the ability of Government to meet **its carbon reduction targets.**” [our emphasis].*

The NPS NN requires assessment against the Government’s climate reduction targets i.e. the carbon budgets which are set at a national geographical scale. It does not require assessment against any local or regional targets. This is because the Government has not identified or adopted any carbon reduction targets at a scale smaller than the UK as a whole i.e. National Carbon Budgets.

How an Assessment was Undertaken to Evaluate the Impacts of the Scheme Including Consideration of Likely Significance Effects

National Highways’ approach to assessing and evaluating the CO_{2e} impacts associated with the Scheme is set out in Section 14.3 of Chapter 14 of the ES (APP-052) which notes that construction related CO_{2e} emissions were quantified following PAS 2080:2016 – ‘Carbon Management in Infrastructure’ principles using the latest Highways England Carbon Tool available at the time of the assessment). DMRB, Volume 11, Section 3, Part 1 Air Quality: HA 207/07 was used to quantify the CO_{2e} operational emissions.

As explained earlier, the environmental assessment work was completed before updates to DMRB LA 114 Climate were made. However, the methodology used for the climate assessment in Chapter 14 of the ES (APP-052) substantially follows that set out in LA 114 and so National Highways does not consider that the results of the assessment would be materially different if it were undertaken using the LA 114 methodology.

Within Section 3 (Methodology) of DMRB LA 114, paragraphs 3.18 to 3.20 define the reporting requirements for comparison against the relevant carbon budgets (*in existence at the time of the assessment*) and the evaluation criteria for significance, which is consistent with the decision making requirements set out in paragraphs 5.17 and 5.18 of the NPS NN.

Chapter 14 of the ES sets out the climate assessment completed for this Scheme. Chapter 14 presents projected emissions from the Scheme in the context of the 3rd, 4th and 5th carbon budgets (as shown in Table 14.16). The projected emissions compared to all current and future legislated carbon budget periods, including the 3rd, 4th, 5th and 6th carbon budgets, is presented in National Highways' response to the SoM. The response concluded that the Scheme does not cause a significant effect for changes in CO_{2e} emissions when compared to carbon budgets. However, since the submission of the environment statement, and the DCO examination, the Department for Environment, Food and Rural Affairs (Defra) has released (on the 19th November 2021) a new version of the Emission Factor Toolkit (EFT) (version 11) (EFT v11). This update is notable because, for the first time, the EFT now includes data relating to the UK vehicle fleet and associated emissions for the period between 2031 and 2050 inclusive. EFT v11 also now includes a greater uptake rates of electric vehicles, aligned to electric vehicle penetration rates described in worksheet labelled 'A1.3.9' of DfT's Databook⁸ for all road types (motorways, urban and rural) listed in EFT.

Previous versions of EFT, including EFT v8 and v10 which was used to calculate CO_{2e} emissions from road traffic for the Scheme, stopped at 2030. In the absence of CO_{2e} emission factors after 2030 in earlier versions of the EFT, 2030 emissions were used as the last available set of factors to represent CO_{2e} emissions into the future. This clearly over estimated the CO_{2e} emissions in future years because it did not take into account the higher uptake rates of electric vehicles post 2030 as described by the DfT Databook.

The DfT published its Transport Decarbonisation Plan (TDP)⁹ on the 14th July 2021, which sets out the Government's aspirations to decarbonise transport to support the wider approach to achieving Net Zero by 2050. The TDP represents a series of policy measures Government is considering to decarbonise transport. "Figure 2: Decarbonising Transport domestic transport GHG emission projections, versus the baseline", page 45 of the TDP, illustrates the anticipated reduction in CO_{2e} emissions from transport, including road traffic between 2020 and 2050.

⁸ <https://www.gov.uk/government/publications/tag-data-book>

⁹ https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/1009448/decarbonising-transport-a-better-greener-britain.pdf

The DfT has advised National Highways that a sensitivity test based on the impact of the policy measures set out in TDP can now be undertaken for schemes. The DfT has approved a sensitivity test based on the rate of improvement shown in Figure 2 of the TDP which can be applied to CO₂e emissions calculated for the Scheme assessment.

For the purposes of this exercise, the construction and non-road user operational emissions calculations have also been updated using the latest National Highways Carbon Tool (v2-4), the latest set of BEIS carbon factors (2021), and accounting for decarbonisation of the national grid using the latest BEIS projected grid factors.

Table 1 presents the change in CO₂e emissions between the 'with scheme scenario' (*also referred to as the Do-something scenario*) and 'without scheme scenario' (*also referred to as the Do-minimum scenario*), split by carbon budgets, for the CO₂e emissions previously reported in the environmental statement, the updated CO₂e emissions based on EFTv11 and TDP sensitivity test (upper and lower bounds).

As explained in the response to Question 1b(iii) above, the data presented in Table 1 represents the latest assessment outputs for the Scheme and should therefore be relied on by the SoS at the point of making his decision on the Scheme.

Table 1: Change in CO₂e Emissions (*With Scheme Scenario – Without Scheme Scenario*)

	CO₂e (Million tonnes)			
Carbon Budget Period	3 (2018-2022) (e)	4 (2023-2027) (e)	5 (2028-2032)	6 (2033-2037)
Carbon Budget	2,544	1,950	1,725	965
Previously Reported in the Environmental Statement				
Construction (a)	0.0561	0.0748	0	- (f)
Operation (b)	0	0.0123	0.0206	-
Total	0.0561	0.0871	0.0206	-
Updated Government Guidance Since the Publication of the Environmental Statement				
Construction (c)	0.0390	0.0520	0	0
Operation (d)	0	0.0072	0.0119	0.0122
Total	0.0390	0.0592	0.0119	0.0122
Sensitivity Test for Operational Emissions (g)				
TDP (upper bound)		0.0065	0.0071	0.0051
TDP (lower bound)		0.0050	0.0042	0.0024
	Notes:			

	<ul style="list-style-type: none">(a) National Highways Carbon Emissions Calculation Tool v1.03 (2018)(b) Road user emissions (Emission Factor Toolkit v8), and emissions from maintenance activities and the use of grid electricity. NB maintenance and grid electricity are based on 2018 BEIS carbon factors and are therefore a worst-case scenario. As grid electricity decarbonises and the UK transitions towards net zero these emissions are anticipated to decrease.(c) National Highways Carbon Emissions Calculation Tool v2.4 (2021)(d) Road user emissions (Emission Factor Toolkit v11), and emissions from maintenance activities and the use of grid electricity. NB maintenance and energy use calculations have also been updated using the National Highways Carbon Emissions Calculation Tool v2.4 (2021) for embodied carbon, the latest set of BEIS carbon factors (2021) for transportation, and electricity use accounts for decarbonisation of the national grid using the latest BEIS projected grid factors.(e) The assessment of construction emissions assumes 18 months of the 3.5-year construction period falls within the 3rd carbon budget, with the remaining 24 months falling within the 4th carbon budget. Operational emissions are accounted for from the first full year of operation (2025), accounting for the remaining three years of the 4th carbon budget.(f) The 6th Carbon Budget was not published at the time the ES was produced. Therefore, emissions were not presented against the 6th carbon budget in the ES.(g) Road user emissions only.(h) TDP values
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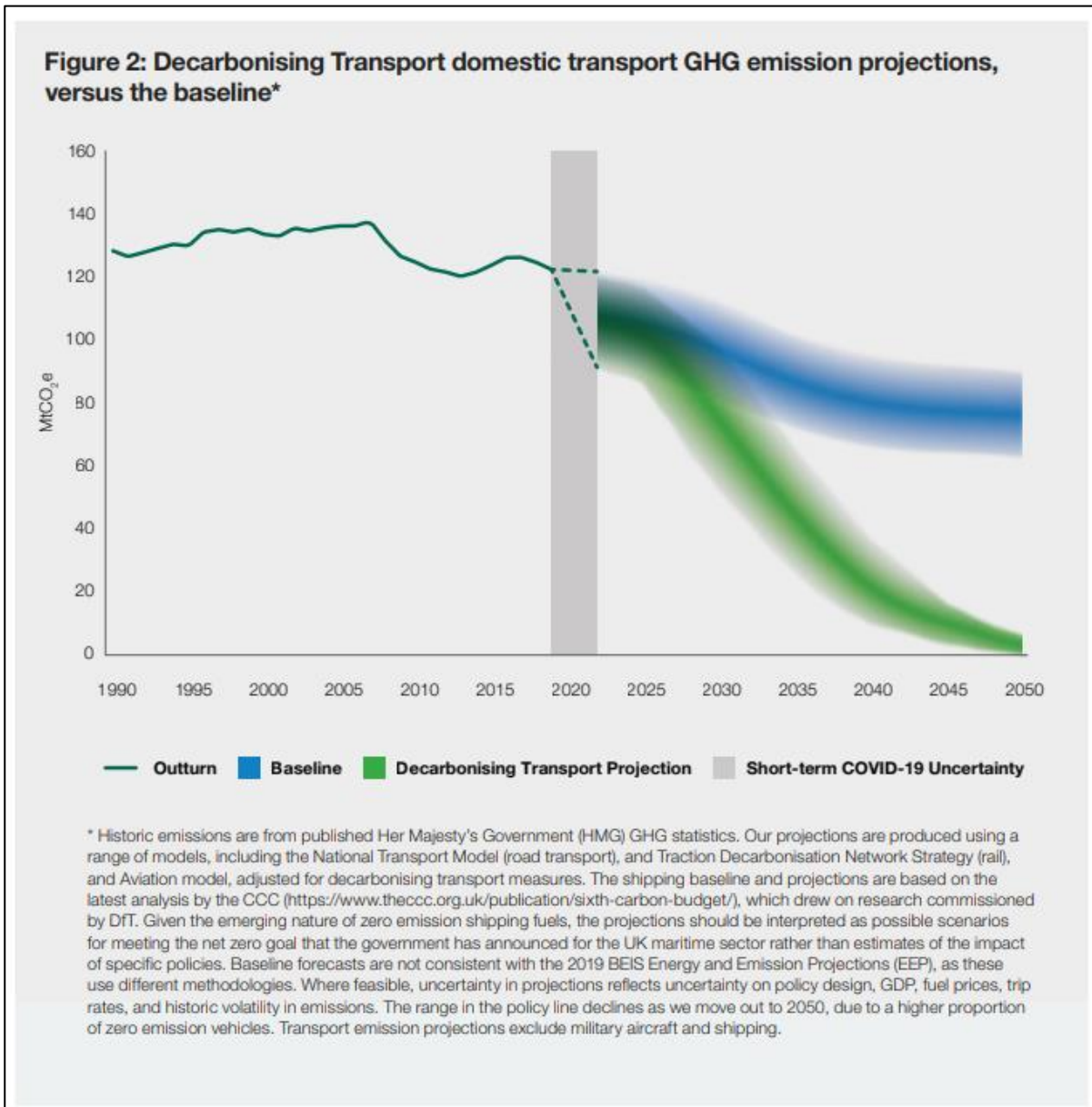


Figure copied verbatim from Transport Decarbonisation Plan

How the Assessment Presented for the Scheme Complies with the Environmental Impact Assessment Regulations

An environmental statement is required to describe the likely significant effects of a proposed development on the environment (Regulation 14 of the Infrastructure Planning (Environmental Impact Assessment) Regulations 2017¹⁰). This includes a description of the likely significant effects on the environment from, inter alia, the impact of the project on climate (for example the nature and magnitude of greenhouse gas emissions) and the vulnerability of the project to climate change. An environmental statement is also required to describe the likely significant cumulative impacts of the development proposed together with those from other "existing and/or approved projects" (see paragraph 5 (e) of Schedule 4 to the 2017 Regulations).

To undertake this work and come to an informed judgement an environmental statement is required to include such information as is reasonably required to describe the environmental effects of the development and which the applicant can reasonably be required to compile having regard to current knowledge¹¹. In the context of assessing cumulative carbon impacts, the only assessment National Highways can be reasonably required to undertake is one having regard to current knowledge.

Accordingly, the environmental statement produced for the Scheme complies with the 2017 Regulations.

As regards the additional material now requested by the Secretary of State, this amounts to a request by the Secretary of State for "any other information" within the meaning of regulation 3(1) of the 2017 Regulations.

However, there is no reasonable basis upon which National Highways can assess the carbon emissions impact of the Scheme at a local or regional level and it is not required to do so by law or pursuant to the NPS NN.

National Highways can only assess the change in CO₂e emissions from the Scheme in absolute terms and against the national carbon budgets.

The procedures and evaluation criteria set out in DMRB LA 114 Climate, are appropriate and sufficient to ensure that the cumulative effects of proposed road schemes upon climate change are assessed in accordance with the 2017 Regulations and to provide sufficient evidence for the decision making requirements set out in paragraph 5.18 of the NPS NN.

¹⁰ <https://www.legislation.gov.uk/ukxi/2017/572/contents/made>

¹¹ (see R. (Khan) v London Borough of Sutton [2014] EWHC 3663 (Admin) and Preston New Road Action Group v Secretary of State for Communities and Local Government [2018] Env. L.R. 18)

The Assessment was Prepared by a Competent Experts

This response to the information requested by the Secretary of State on climate have been prepared by competent experts with relevant and appropriate experience.

The technical lead for air quality and vehicle emissions is the Principal Air Quality Advisor for National Highways with more than 25 years of relevant experience with appropriate professional qualifications. The technical lead for carbon from construction activities is the Senior Technical Advisor for Sustainable Development and Climate Change for National Highways with more than 16 years of relevant experience with appropriate professional qualifications.

National Highways confirm that the assessment work set out in Table 1 has been carried out by suitably competent experts from a Professional Infrastructure Consultancy. The Technical Lead for climate assessment is a Technical Director who holds a BA (Hons) in Environmental Studies and has 20 years' experience working on climate assessment. The Technical Lead on Air quality Assessment is a Regional Director who holds a MSc in Atmospheric Sciences and BSc (Hons) in Environmental Chemistry and is a Chartered Scientist (CSci) who holds full professional membership with the Institution of Environmental Sciences and Institute of Air Quality Management, is a Fellow of the Royal Meteorological Society (FRMetS), has 33 years of experience in air quality assessment and has used that knowledge and professional judgement to undertake this assessment. The Technical Lead for Traffic Modelling is an Associate Director who holds a BSc (Hons), is a Chartered Member of the Institute of Logistics and Transportation and a Member of the Institution of Highways & Transportation and has almost 40 years' experience in their field.

4 Request for an update on the Framework Agreement between the Applicant and Network Rail

The Secretary of State notes that the Applicant, in [paragraph 8.2.7 of its response to the Statement of Matters](#), sets out that the Framework Agreement between the Applicant and Network Rail was still being progressed. The Secretary of State invites **the Applicant and Network Rail** to provide an update on this agreement.

Applicant's response

National Highways and Network Rail confirm:

The Framework agreement is agreed by both parties and is expected to be executed in March 2022. Liaison between the parties has been productive and engagement is ongoing regarding the design and works programme.

APPENDIX A

Comments of National Highways (the Applicant) on the responses made by Interested Parties in response to the SoM and the Applicant's response to the SoM

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Comment	Applicant's Response
1 Anne Morgan	
<p>National Highways response puts forward figures and tables without any explanation or justification of the numbers.</p> <p>The proposals to move the entrance of McDonalds, Eurogarages and the entrance to Markeaton Park to the A52 Ashbourne Road will lead to an increase in queueing there. That will lead to an increase in Carbon emissions and in NO2 and in particulate pollution.</p> <p>At present traffic can enter the park from the North and South and East without waiting and blocking the progress from the East of Derby along Ashbourne Road.</p> <p>National Highways never answered my question "What are vehicles that need to enter Markeaton Park supposed to do when the find that the Right turn Lane is already full?"</p> <p>I suspect that if the scheme is allowed to proceed there will be a lot of accidents there.</p>	<p>These issues were raised and addressed during the Examination. Ref Examination Document TR010022/APP/8.103 [REP13-006], Section 3</p>
2 Friends of Markeaton Park	
<p>The response of National Highways to the Secretary of State's Statement of Matters neither attempts to address the unlawful aspects of the TR10022 proposals, nor does it suggest ways to lessen the Carbon impact of the construction and ongoing operation of the scheme. Major earthworks and tree clearances are needed to bring about a reconfiguration and realignment of the A38; Examination Library APP 020 Statement of Reasons Volume 4.section 2.3 lists 87 authorised works; additional works can be found described in other application documents.</p>	<p>Noted</p>
<p>11.38ha will be cleared of trees; a few of them are hundreds of years old, others planted by children less than five years ago. The majority of the trees along Kingsway were planted as mitigation for the dualling of the road forty years ago. Voluntary groups, schools, "Plant a Tree" campaigns have added to those. The</p>	<p>These issues were raised and addressed during the Examination [REP15-007].</p>

Comment	Applicant's Response
<p>trees have been removing Carbon dioxide and particulates from the atmosphere as they grow, about 1.25kg each per annum, of course varying by weather and age and variety of tree, but those stores will be released when they are killed and they decay. The people living in Derby, including some children, who have been proudly watching the sapling they planted themselves, are very concerned about losing them.</p>	<p>The carbon assessment for the construction of the scheme has been subject to close scrutiny and continues to be – this is further addressed in the response to the SoS in Section 3 of this document.</p>
<p>It is not possible to accurately calculate the Carbon footprint of the trees and hedges and soils disturbed by the proposed scheme, because the documents published in the Examination Library about the excavations, regrading, building of diverted drains and diverted Utility Corridors, re-contouring for mitigation of flood storage, flood storage tanks and pumping stations do not put forward the numbers that are necessary to make the calculations. The relevant Documents have qualifying descriptions such as “Confidential information withheld” or “numbers to be determined at Detail Design stage”. However it seems reasonable to assume that every cubic metre of the 96 hectares within the DCO boundary land under compulsory acquisition, temporary acquisition or carrying “permanent Rights of Access” will be disturbed and suffer loss of the Carbon it, and the plants growing on it, stored. Where not much work is going to be done will average with the places where underpasses 7.5 metres down need to be excavated. The excavation must be below the eventual road surface for foundations, and even deeper for flood storage tanks and pumps.</p>	<p>These issues were raised and addressed during the Examination [REP15-007]. The carbon assessment for the construction of the scheme has been subject to close scrutiny and continues to be – this is further addressed in the response to the SoS in Section 3 of this document.</p>
<p>The major earthworks and tree clearances would lead to an ongoing loss of the storage services that all the plants on the 96 hectares of land would have done, and the release of all the Carbon that they have built up over forty years. That will result in an increase in carbon emissions so significant that it could have a material impact on the ability of the Government to meet its carbon reduction targets.</p>	<p>These issues were raised and addressed during the Examination [REP15-007]. The carbon assessment for the construction of the scheme has been subject to close scrutiny and continues to be – this is further addressed in the response to the SoS in Section 3 of this document.</p>
<p>Throughout the Application documents National Highways admits that planting tree saplings will not provide any mitigation for years, let alone result in “net gain” for</p>	<p>These issues were raised and addressed during the Examination [REP15-007].</p>

Comment	Applicant's Response
<p>Biodiversity. Natural England recommends that maintaining and restoring biodiverse native habitats is preferable to (re)creating them. As Friends of Markeaton Park detailed in footnotes in a previous submission (REP15-011), the scheme as proposed breaches the National Policy National Network Strategy Law regarding Biodiversity.</p>	<p>Reference should be made to the Planning Statement and National Policy Statement Accordance Table [APP-252] which sets out Highway England's position with regard to the Scheme's alignment with national policy.</p>
<p>The scheme as proposed also breaches the Natural Environment Rural Community Bill's provisions for endangered species: Since the Public Inquiry closed additional surveys found evidence of NERC listed protected species</p> <ul style="list-style-type: none"> • Great Crested Newts at Alfreton Road Rough Grassland Local Wildlife Site • more bats with potential roosts around Markeaton Park. 	<p>These issues were raised and addressed during the Examination and will be managed in accordance with appropriate legislation and licencing requirements.</p>
<p>The Derby and Derbyshire Bat Group has now formally expressed concerns. <i>"To whom it concerns, Derbyshire Bat Conservation group have concerns about this proposed work. 10 of the 12 species of bats known to be in Derbyshire have been recorded in Markeaton Park, and in the area specifically impacted by the work. Some of the mature trees along the carriageway are known bat roosts, which would usually be protected under the Wildlife and Countryside Act and other wildlife legislation. Although some mitigation is planned, nothing can replace the suitability of these veteran trees. We would also have concerns about the impact of increased pollution and emissions on the remaining trees and wildlife."</i></p>	<p>Natural England was fully consulted on bats during the ecology assessment work. Mitigation measures for bats will be reaffirmed with Natural England through the formal licensing process prior to works and upon consent of the Scheme.</p> <p>Since the end of the Examination, surveying has been ongoing and this will feed into the detailed design measures to be submitted to and approved by the Secretary of State as part of the detailed environmental management plan secured by requirement 3 of the draft DCO prior to the commencement of construction. Mitigation measures for bats will be reviewed, based on the ongoing survey data, and agreed with Natural England.</p>
<p>On the 19th October 2021 the government announced it wants a Greenhouse Gas Removal programme using afforestation, forest management, and soil carbon sequestration. The A38 3 junctions scheme TR10022 features the destruction of all three of those existing types of Carbon stores.</p> <p>If the means - i.e. trees, hedges, diverse areas of plants and wet soil stores - of reducing Carbon dioxide in the atmosphere are destroyed, there will be no achievable method to reach the targets for Net Zero.</p>	<p>These issues were raised and addressed during the Examination. The carbon assessment for the construction of the scheme has been subject to close scrutiny and continues to be – this is further addressed in the response to the SoS in Section 3 of this document.</p>

Comment	Applicant's Response
<p>Conflict of requirements</p> <p>TRO10022 A38 3 junction scheme encompasses an irreconcilable conflict between two different requirements:</p> <ul style="list-style-type: none"> • National Highways has a remit to provide a free flowing Strategic National Network carrying traffic going at 50mph (or greater) speed, than that on local traffic networks. • Derby City Council is under a government Air Quality Mandate to prepare a Roadside NO2 Scheme to reduce harmful pollution. <p><u>The proposed underpasses will not address this issue, this is a single focus on a solution that will exacerbate the problem.</u></p> <p>The air pollution in Derby has reached those levels because there is more traffic than can be accommodated on the road space available, resulting in long queues and gridlock. The City Council is anxious to deter local traffic from driving into the city centre. From the 1940s the Derby Borough Council built the ring road to enable the people of Derby to get to work without criss-crossing the town centre. The Royal Hospital regularly experiences that “outside the hospital roads become car parks after the smallest incident elsewhere”, ambulances are delayed, patients who have been delayed miss their slots for diagnostic tests and the hospital staff who have been delayed cannot keep to their Shift Timetables.</p> <p>So that the Air Pollution levels in Stafford Street remain compliant, the Traffic Management Plan prepared for use during the roadworks aims to maintain the traffic on the A38, in preference to drivers choosing a variety of alternative routes through the city. The Traffic Movement Surveys reveal that 42% of the traffic to the North of Little Eaton is still there at Kingsway roundabout. In other words 58% of the traffic using the A38 is local traffic that is avoiding the City Centre. Once the underpasses are constructed, local traffic will have 16 new slip roads to merge into the A38 so local traffic will still be interacting with the Strategic Network road. The new Climate Change strategy to reach Net Zero by 2050. could stimulate lateral thinking on alternative solutions, such as subsidised local electric public trains, trams or buses, more cycleways or alternative routes to the east of the Derby city.</p>	<p>These issues were raised and addressed during the Examination.</p> <p>Derby City Council has implemented its own local scheme to address their specific air quality issues. The proposed A38 scheme will not impact this.</p> <p>The assessments of air quality carried out to date show the Scheme will not result in any exceedances of thresholds.</p>

Comment	Applicant's Response
<p>Electric buses can carry 70 passengers. For the £250 million allocated for this work, 75 buses could be taking thousands of cars off the roads.</p>	
<p>3 Derby and South Derbyshire Friends of the Earth</p>	
<p>As the inquiry has been re-opened, we reserve the right to send further objections. The Secretary of States' Statement of Matters asks what has changed, since the inquiry ended. The change of Highways Englands name, to National Highways (NH), has done nothing to change NH, still set on increasing traffic and air pollution, to the detriment of our environment, communities and carbon emissions targets. The Paris Agreement is now National Policy, but this still remains unrecognised by NH</p>	<p>The Examination has not been re-opened – other points are opinion and are factually incorrect.</p>
<p>It is impossible to carry out a detailed expose of NH evidence, without the missing floodmap. Pg 25 of their submission shows Birmingham's flood map instead. While helpful to many people in Birmingham it does nothing for the people of Derby, who are at imminent floodrisk, from the River Derwent, which now floods every year. NH has also consistently refused to answer questions about the total carbon emissions of over 100 RIS2 England road schemes.</p>	<p>Nothing in the Applicant's submission made reference to the flood map that was erroneously included with the Applicant's response to the SoM. Flood risk was not an issue raised in the SoM and no other flood map should have been included.</p>
<p>Flooding guidance, from the Government, has changed the latest – regarding peak river flow allowances and dominant sources of flooding from catchments - was on 6th October 2021. Derbys flood defences, though welcome in some quarters, are inadequate and merely allow floodwaters to affect communities in other areas, up and downstream of Derby. The release of floodwaters usually occurs at night, from the Derwent Dam. We have seen this year, what excessive rainfall and the subsequent release of floodwaters can do, across the world. Some of the worst effects were felt in Germany this summer, where over 150 people were killed, because of flooding. In September 2021 ONE METRE of rain fell, in NW Italy, in 24 hours. Henan province in China also suffered the same amount of rainfall, that month. Today, New York and New Jersey have declared a state of emergency as severe weather threatens, 70 million people are under threat of a powerful storm</p>	<p>Flood risk was considered during the Examination [REP12-006] and is not an issue raised in the SoM. It can therefore be assumed that the Secretary of State is content with the consideration of these matters. The Scheme's flood risk has been assessed in accordance with current Government guidance (including appropriate climate change allowance) – please also refer to the Applicant's response to the Environment Agency in Section 2 of this consultation response.</p>

Comment	Applicant's Response
<p>system, in Northeastern USA. The highest flash flooding alert has been made for Southern Italy. Floodwaters have forced 5000 from their homes in Central Vietnam. Winds expected to exceed 100km/ph in Argentina</p> <p>Every country in the world has experienced changes and the worsening of rainfall and flooding events, this year. Yet NH's latest submission reveals that NH believes England to be somehow immune from such climatic disasters.</p>	
<p>National Highways do not address any aspects of the correlating human rights issues re the Paris Agreement effects on vulnerable communities, dispossessed, women, children, migrants. Applied to Derby, the communities who also most utilise the park, from the poorer, most polluted wards of Derby, have been totally ignored. NH dismisses the intent of the Paris Agreement, entirely.</p>	<p>It is not clear what point is being made here.</p> <p>The impact on people and communities is addressed in Chapter 12 of the Environmental Statement [APP-050]</p>
<p>At Raynesway Rolls Royce nuclear reactor, 200 workers had to be evacuated in November 2019, when the River Derwent threatened the works factory. National Highways have admitted that floodrisk will be increased, in REP4;10 pg 4 2.4.3 Both Markeaton Brook and Mackworth Brook (see SFRA Allestree flood risk map) 2.5.4 'forming an important source of base flow to rivers' 3.1.2 pg6 "that the Secretary of State be satisfied that flood risk will not be increased elsewhere..." 3.1.3 "Consider risk of all forms of flooding"... "Take impacts of climate change into account..."</p>	<p>Flood risk was considered during the Examination [REP12-006] and is not an issue raised in the SoM. It can therefore be assumed that the Secretary of State is content with the consideration of these matters. The Scheme's flood risk has been assessed in accordance with current Government guidance (including appropriate climate change allowance)</p>
<p>Yet pg27 Vol 6 Chapter 14 Climate, states" The ICCI assessment has not identified the potential for significant combined impacts of future climate change and the Scheme on identified receptors in the surrounding environment." Despite this admission, HE response to our Q37, was that 'most climate change has been taken into account.</p>	<p>An In Combination Climate Change Impact (ICCI) Assessment was undertaken for the ES [REP-052] however it did not identify any significant impacts as a result of the Scheme and Future climate Change.</p> <p>Flood risk was considered during the Examination [REP12-006] and is not an issue raised in the SoM. It can therefore be assumed that the Secretary of State is content with the consideration of these matters. The Scheme's flood risk has been assessed in accordance</p>

Comment	Applicant's Response
	with current Government guidance (including appropriate climate change allowance)
Pg 9 3.8.4 Environment Agency (EA) emphasised that "surface water run-off should be controlled to existing rates or less" The 'existing rate' has gone up considerably since November 2019. February 2020 rainfall levels were 141% of the average rainfall for February	Flood risk was considered during the Examination [REP12-006] and is not an issue raised in the SoM. It can therefore be assumed that the Secretary of State is content with the consideration of these matters. The Scheme's flood risk has been assessed in accordance with current Government guidance (including appropriate climate change allowance)
4.5.1 Groundwater is known to flood in areas underlain by major aquifers and 4.5.2, 4.5.3 the 'underlying geology is permeable' Markeaton Park groundwater flooding occurred 20/2/20	Flood risk was considered during the Examination [REP12-006] and is not an issue raised in the SoM. It can therefore be assumed that the Secretary of State is content with the consideration of these matters. The Scheme's flood risk has been assessed in accordance with current Government guidance (including appropriate climate change allowance)
4.5.6 "The risk of groundwater flooding is considered to be high." A 40% climate change event is mentioned, yet 141% rainfall event already occurred throughout February 2020 4.10 "The risk of increased surface water run-off, from the scheme, to surrounding areas, is considered to be high"	Flood risk was considered during the Examination [REP12-006] and is not an issue raised in the SoM. It can therefore be assumed that the Secretary of State is content with the consideration of these matters. The Scheme's flood risk has been assessed in accordance with current Government guidance (including appropriate climate change allowance)
Exception Test 2B "The development must demonstrate that it provides wider sustainability benefits to the community, that outweigh flood risk.	The evidence for this is presented as part of the DCO submission (refer to the Planning Statement and NNNPS Accordance Table [APP-252]).
Regarding air pollution NH has already admitted the worsening of air pollution and we include again the relevant sections of our evidence In responses to EXA questions, re air quality (3 Schedule 10) HE clearly states "The compliance risk assessment [REP6-020] and [REP7-009] concluded that all areas would be	These issues were addressed during the Examination [REP12-006], and, as noted, all areas would be compliant in the Scheme opening year (2024) both with and without operation of the Scheme..."

Comment	Applicant's Response
<p>compliant in the Scheme opening year (2024) both with and without operation of the Scheme..."</p> <p>yet in responses to Derby FoE, HE states (REP 6-035 Vol 8.84) that "Emissions overall would increase..." , "increased emissions from increased traffic on the A38..." The A38 Junctions schemes would not assist the council in achieving compliance, especially as DciC outline the additional and numerous city streets that would be impacted, by increased, or 're-assigned' traffic from the A38 schemes. (REP6-037) There is no indication of how much air pollution would be increased on these streets and the materially worse environmental effects.</p>	
<p>Derby is a Government designated Clean Air Zone, in which Derby people are breathing substandard air. A worsened change this year, is that the city council has removed a cycle/bus lane in Friargate, in June 2021, impacting on nearby Stafford St, by increasing traffic/air pollution and sending a contrary message to youth/children, increasing emissions, pollution and road traffic dangers, to pedestrians and cyclists.</p> <p>Other changes are that lorry numbers on the roads are decreasing, because of supply/driver shortages. Supermarkets such as Tesco, are already changing to railfreight.</p> <p>People are also still working from home, the latest estimate is 15% of the workforce (down from nearly 50% in 2020) According to the Office for National Statistics 'When asked why they intend to use increased homeworking in the future, 80% of businesses cited improved wellbeing as the reason. Reduced overheads and increased productivity were also commonly reported reasons.'</p> <p>New car sales are also still dropping</p> <p>National Highways do not recognise the need to 'move away from the motorway'</p>	<p>As considered during the Examination the Derby Junctions scheme will not affect Derby City's efforts to address local air quality issues.</p> <p>This point seems to be saying air quality will not be as bad as assessed for the reasons stated. However, these theoretical factors have not been taken into consideration meaning we have assessed the worst case. However, the latest Government figures suggest that, whilst public transport usage is still depressed, all other road traffic was almost back to pre-pandemic levels in early December 2021. This fell back a little following the 'omicron' outbreak but the likelihood is that it will recover again back to pre-pandemic levels in the near future. (https://www.gov.uk/government/statistics/transport-use-during-the-coronavirus-covid-19-pandemic).</p>
<p>Another major change today is the United Nations report that the world will not meet the emissions reductions necessary, to keep global temperatures below</p>	<p>These issues are recognised.</p>

Comment	Applicant's Response
<p>1.50C, unless immediate cuts are made NOW, by half. It is up to developed countries such as ours, England, to cut our own emissions, to allow other less developed countries more time to save energy/switch to energy-efficient travel/energy/evacuate their countries ie Maldives, other low-lying island states.</p> <p>The 4th and 5th UK Carbon Budgets will not be met.</p> <p>The 6th UK Carbon Budget for aviation alone, will not be met. Add shipping and transport and our budget is completely overdrawn. We are a G20 country and we are, all together, responsible for 78% of total world emissions</p>	<p>To put the last statement into context, the G20 countries may be responsible for 78% of total world emissions, however, the UK is responsible for just around 1%.</p> <p>https://commonslibrary.parliament.uk/uk-and-global-emissions-and-temperature-trends/</p>
<p>We ask when the missing Derby floodrisk map will be made available and thus a further extension of the inquiry. Copies of previous evidence submitted to the A38 Junctions inquiry and referred to above, are also on We support Markeaton Action Groups and other objections to the destruction of our environment, trees and nature/biodiversity, the UK being the most nature-depleted country in the world. In 2021 the UK COP26 year, we are supposed to be setting an adult example to the world, of the restraint necessary, to save resources - for the young and future generations especially- in this, a developed country.</p> <p>We ask the Secretary of State to act, on behalf of those who are not able to</p>	<p>There was no Flood risk map missing in the Applicant's response to the SoM – there was a map included erroneously.</p>
<p>4 Derbyshire Bat Conservation Group</p>	
<p>Derbyshire Bat Conservation group have concerns about this proposed work. 10 of the 12 species of bats known to be in Derbyshire have been recorded in Markeaton Park, and in the area specifically impacted by the work. Some of the mature trees along the carriageway are known bat roosts, which would usually be protected under the Wildlife and Countryside Act and other wildlife legislation. Although some mitigation is planned, nothing can replace the suitability of these veteran trees. We would also have concerns about the impact of increased pollution and emissions on the remaining trees and wildlife.</p>	<p>Natural England was fully consulted during the ecology assessment work and appropriate licencing and mitigation for bats will be agreed prior to the start of works.</p> <p>Since the end of the Examination, surveying has been ongoing and this will feed into the detailed design measures to be submitted to and approved by the Secretary of State as part of the detailed environmental management plan secured by requirement 3 of the draft DCO prior to the commencement of construction. Enhanced mitigation measures are being developed including the provision of</p>

Comment	Applicant's Response
	<p>a bat house in a location to be agreed with Derby City Council and Natural England..</p> <p>There are no internationally or nationally designated ecological sites that could be affected by changes in air quality due to the Scheme as discussed in para 5.6 of APP-043. Significant impacts on air quality due to the Scheme are not expected in Local Wildlife sites and Local Natures reserves (as discussed in Q5.10 part b and Q8.8 in REP1-005) or on veteran trees (as discussed in Q3.1 of REP4--024).</p>
5 Derbyshire Wildlife Trust	
<p>With respect to Section 6 of the applicant's response DWT wishes to highlight that the ecological assessment did not include the use of a biodiversity metric to quantify the biodiversity losses that will occur and the proposals for habitat creation and enhancement that the applicant proposes.</p> <p>DWT has raised concerns with and through Derby City Council and Erewash Borough Council in relation to the absence of biodiversity metrics and this question was discussed during the public enquiry. As we understand it the applicant has indicated that a biodiversity metric will be applied at the detailed design stage. However, the lack of metric information to date means that the magnitude of the impacts on habitats remains largely unquantified and it is therefore difficult for individuals and organisations reviewing the application to gain an understanding of whether the current proposals for mitigation and enhancement will be adequate to fully address the biodiversity losses. The lack of metrics is particularly concerning when habitats such as historic parkland are being directly affected as these are treated as unacceptable loss requiring bespoke compensation measures in Defra's metric</p>	<p>There is no requirement on NH to provide a biodiversity metric in the Scheme assessment, however, it was agreed during the Examination with Erewash Borough Council in relation to the local wildlife site that biodiversity metrics would be applied during the detailed design stage in respect of ecological mitigation proposals.</p>
<p>With regard to section 8 and the potential impact on the veteran oak tree there remains uncertainty on Highways England's part as to whether or not this tree will</p>	<p>These issues were addressed during the Examination and updated in NH's response to the SoM</p>

Comment	Applicant's Response
<p>be retained. We consider that the tree should be retained in situ. Veteran trees are irreplaceable habitats and impacts should in the first instance be avoided.</p>	
<p>6 Environment Agency</p>	
<p>Question Any change in whether the Development would be consistent with the requirements and provisions of relevant local or national policies, given the length of time since the examination closed. This will include those policies included in the Applicant's Planning Statement and National Policy Statement Accordance table and any updated versions thereof (including the updated Derwent Valley Mills World Heritage Site Management Plan 2020-25), as well as any wholly new policy that may be applicable;</p> <p>Environment Agency Response Since the initial consultation for the A38 DCO, the following changes have taken place. Climate Change Allowances New climate change allowances have been published on 20th July 2021 on gov.uk. The A38 is situated within the Derbyshire Derwent river catchment and the 2080 allowances should be looked at to understand any changes that may be applicable. H allowances for peak river flows are no longer applicable, however Gov.uk gives further advice for NSIPs under the section 'Assessing Credible Maximum Scenarios'. The upper end allowance can be used to sensitivity test the development proposal against future climate change scenarios, which in this case can be done to help show any future impacts on the operation of the road. Whilst the relevant National Policy Statement does not highlight the requirement to do this we would encourage the developer to look into this to give them a fuller understanding of any impacts from the upper end allowance.</p>	<p>The Environment Agency's comments refer to the Little Eaton junction modelling of the River Derwent. Since the modelling of the River Derwent was undertaken using a fluvial model, and a +50% climate change allowance was applied for the 100-year event – this was appropriate at the time of the flood risk assessment for an 'upper end, 2080s epoch' climate change scenario, since this allowance corresponded with the expected lifetime and vulnerability classification of the Scheme, and was confirmed by the Environment Agency. The new climate change allowances indicate that for the same scenario, the allowance percentage is should now be +63%.</p> <p>In terms of relative change between the existing baseline and Scheme arrangements, it is considered that the application of a higher climate change allowance (+63%) would result in similar impacts on flood depth differences to those demonstrated using the previous climate change allowance (+50%) and no change to the conclusions of the ES, which were accepted by the Environment Agency.</p> <p>In terms of absolute change, when running models of the Scheme arrangement for a +20% climate change scenario and a +50% climate change scenario, the 1D flood levels at the A38 Little Eaton junction bridge over the River Derwent were as follows:</p> <ul style="list-style-type: none"> • 100yr+20%CC = 51.11m AOD
<p>Question Other than the matters set out above, the adequacy of the environmental information produced in support of the application for the Development1 and</p>	

Comment	Applicant's Response
<p>whether further or updated environmental information is now necessary given the length of time since the examination closed;</p> <p>Environment Agency Response</p> <p>The Environment Agency updated our guidance on the use of climate change allowances for development planning in July 2021. We recommend that the applicant reviews the new guidance to ensure that their proposals take account of any changes since the original Flood Risk Assessment was produced. Specifically we would highlight the guidance on the assessment of climate change for Nationally Significant Infrastructure projects, and recommend that the applicant undertakes additional sensitivity testing in line with the published guidance to support understanding of the impacts of a credible maximum climate change scenario on the proposed development.</p>	<ul style="list-style-type: none"> • 100yr+50%CC = 51.25m AOD <p>By linear extrapolation, the flood level in the 100yr+63%CC scenario would be 51.31m AOD. This provides a reasonable indicator of the typical change in flood levels that would result from the increased climate change.</p> <p>Note -</p> <ul style="list-style-type: none"> • Relative change refers to the difference in flood levels during a 1% Annual Exceedance Probability (AEP) +63%CC event between the baseline/pre-scheme scenario and the proposed/post-scheme scenario (or indeed any event where you compare results between the two scenarios) • Absolute change refers to the difference in flood levels during a 1% AEP +50%CC event (which has been modelled) and a 1% AEP +63%CC event (which hasn't) for the same scenario. <p>Furthermore, based on Environmental Statement Appendix C2 in the Little Eaton Flood Risk Assessment, essentially the entirety of the Scheme footprint is not affected by flooding in the 100yr+50%CC event. It is therefore considered that the 63% climate change scenario would not increase flood depths/ levels sufficiently to significantly impact the Scheme.</p> <p>In conclusion, whilst application of a 63% climate change allowance scenario will increase flood depths/ levels, the relative impacts of the Scheme in terms of flood risk would be similar to those accepted when applying a 50% climate change allowance, and the absolute impacts on the Scheme would not be significant, such that there would be no change to the ES conclusions nor any requirement for</p>

Comment	Applicant's Response
	any Scheme design revisions or changes to the defined flood risk mitigation measures.
7 Historic England	
We have no additional comments further to the Applicant's response to the Statement of Matters issued on the 2 August 2021.	Noted
8 Nigel Peter Small	
I want it to go ahead	Noted
9 Sarah Fowler	
<p>I am writing to object to the A38 Derby junctions scheme. I am a local resident of Derby. The grounds of my objection are as follows:</p> <p>The A38 Derby junctions planning documents explicitly show an increase in carbon emissions, both from the construction and induced traffic. The savings from a cars idling less will not negate the carbon emitted from the scheme.</p> <p>The A38 Derby junctions scheme was planned before the Department for Transport was required to publish a decarbonising transport plan to meet net zero 2050 law. This road scheme was designed to facilitate traffic growth by unlocking land in the west of Derby for huge car dependent housing developments. This completely contradicts the need to reduce road traffic to meet climate targets. It was also planned before the construction of the A50 southern bypass and associated improvements at the M1 junction and the new rail hub near East Midlands airport, all of which negate the need to expand the A38 as a trunk road.</p> <p>The electric or hydrogen vehicle revolution will not happen fast enough to meet climate targets for 2030. Currently the UK Government is hoping consumers will all switch to electric vehicles but these are very expensive and there are not enough charging points. Electric vehicles are not as low carbon as walking, cycling or public transport.</p>	These issues were raised and addressed during the Examination.

Comment	Applicant's Response
<p>The majority of private car trips in Derby could be completed by foot, bike or bus if enough investment was given to cycling infrastructure and improving bus services. Community car clubs and car sharing apps are another way that road traffic could be reduced. There is no need for the grade separation aspects of the A38 if these solutions are adopted because local roads would be far less congested.</p> <p>This scheme requires the destruction of thousands of trees and several areas of valuable habitat and part of a park used by tens of thousands of people. This is in direct contradiction to the Government's stated aim to increase UK tree cover by 30,000 Hectare and increase biodiversity.</p> <p>The £250 million budgeted for this carbon increasing and outdated road expansion should be spent on sustainable transport for all to reduce road traffic.</p>	
10 Derby City Council	
<p>Derby City Council's Local Transport Plan (2011-2026), LTP3, recognises the need to grade separate the A38(T) Derby Junctions. The A38(T) forms an important part of Derby's highway network and the junctions are identified as major congestion points. Congestion on the trunk road network in Derby has a significant influence upon local route choice and traffic patterns. The Derby LTP3 states that the A38(T) Derby Junctions Scheme would separate local and long-distance traffic reducing delays and congestion, allowing the City Council to better manage the local network and improve linkages across the A38(T) for public transport, pedestrians, and cyclists. However, the LTP identifies, the significant economic price associated with climate change and the role that domestic road transport plays in contributing to CO2 emissions. The climate impacts are directly related to traffic volumes, modes of transport and traffic patterns, including congestion. As such, the principle set out in LTP3 is to only support new infrastructure that is targeted, which make best use of the available road capacity.</p>	<p>Noted and agreed</p>
<p>In working with the developer we have supported them in facilitating the use of active and sustainable modes of transport. We have been working with HE and Linkconnex on the detail design of the scheme to incorporate improvements for</p>	<p>Noted and agreed</p>

Comment	Applicant's Response
<p>cyclists and pedestrians, where appropriate, to further encourage active travel. We have also continued to work with the Travel Behaviour Change Group to help identify measures to incentivise change in mode of transport to active and sustainable modes in advance of the start of works to help reduce congestion. Additionally HE has been working with local businesses and voluntary sector on a two-year trial of electric vans to enable a 'try before you buy' scheme. We have also fed back comments around the travel plan for the employees and visitors during the construction phase of the development to help facilitate active and sustainable modes of transport.</p>	
<p>The climate impact of the development is a wider issue across the Strategic Road Network, due to the very nature and function of the scheme, and how traffic reacts to the scheme i.e. the level of induced traffic vs re-assigned traffic. There was no specific guidance regarding significance levels for GHG emission impacts at the time of the DCO process. The UK has legally binding GHG reduction targets and, therefore, the ES measured the level of significance of the development scheme against the UK National GHG inventory and the UK achieving its reduction targets with the information available at that time.</p>	<p>Noted and agreed</p>
<p>It is for the applicant to demonstrate the impacts on GHG and how these will be offset because it must be considered against the wider management of the strategic road network as a national asset. However, since the DCO additional national strategies and aspirations have been published (regarding the phasing out of ICE vehicles, alongside many more policies as part of the transport decarbonisation plan, the delivery plan for the transition to zero emission cars and vans and other related documents).</p>	<p>Noted and agreed</p> <p>It should be noted that the Applicant has published a Net zero highways plan to show the actions to be taken to transition the Strategic Road Network to net zero carbon</p> <div style="background-color: black; height: 15px; width: 100%; margin-top: 10px;"></div>
<p>The applicant in their response to the Secretary of State's statement of matters has provided further information to reflect the scheme contributions taking into account the 6th carbon budget. The applicant has also highlighted the consideration that it is an overestimate of emissions taking into account that within the emissions factor toolkit account is not taken for the increase of electric vehicles beyond 2030. In</p>	<p>Noted and agreed</p>

Comment	Applicant's Response
<p>addition mention is made of the recent National Government and National Highways plans and commitments that will have a direct impact on the further reduction of road user emissions. As a result the applicant does not consider that CO2e emissions resulting from the Scheme will have a material effect on the Government's ability to comply with the carbon budgets. It is considered an appropriate approach to take in addressing this question.</p> <ul style="list-style-type: none"> <i>the direct, indirect and cumulative likely significant effects of the development on climate, including greenhouse gas emissions and climate change adaptation, in light of the requirements set out in the Infrastructure Planning (Environmental Impact Assessment) Regulations 2017 ('the EIA Regulations') and in light of paragraphs 5.17 and 5.18 of the National Policy Statement for National Networks ('NNNPS');</i> <p>The approach the applicant has taken to address the question seems appropriate considering the national requirements and guidelines for a scheme of this type.</p>	
<p>Point 3 – Air Quality</p> <p>Local Data</p> <p>DCiC has undertaken a review of more recent air quality data which has come to light since the previous examination which took place in 2019 - 2020. In terms of data produced by Derby City Council, this consists solely of diffusion tube data (for NO2) which continues at a total of 70 monitoring sites across the City.</p> <p>Since local NO2 concentrations are driven primarily by traffic emissions, as one would expect, NO2 levels have been affected significantly by the various stages of lockdowns which took place in 2020 and early 2021. At the peak of the first lockdown in March and April 2020, roadside concentrations in Derby had fallen by an average of 29% (March) and 44.8% (April), when compared with data for the same periods in 2019.</p>	<p>Noted</p>

Comment	Applicant's Response
<p>Whilst traffic volumes have steadily increased since that time, it is clear that the data for 2020, and to a lesser degree 2021, has not been representative of 'normal' conditions.</p> <p>Since the primary use of diffusion tube monitoring data within the air quality modelling assessment work is to validate the modelling results, it would not be deemed appropriate to use this data in an updated model verification.</p> <p>In fact, use of the data would inevitably have the effect of 'watering-down' potential air quality impacts caused by the scheme. Consequently, the existing modelling presented as part of the examination in 2019/20 is considered to provide a more conservative and robust assessment than any updated assessment would, using recent monitoring data.</p> <p>Derby City Council has not completed any updated modelling following the PCM-based exercise completed in 2018 and which was discussed under the previous examination.</p>	
<p>National Data</p> <p>The national Pollution Climate Mapping (PCM) model, which is produced by DEFRA in order to estimate air pollutant concentrations across the whole of the UK, was updated in 2020.</p> <p>The latest predictions for Derby suggest compliance with the national standards/regulations slightly earlier than previously suggested. This is partly on the assumption that Derby has completed implementation of the Local Roadside NO2 Plan (otherwise referred to as the Stafford Street scheme), but also relates to continually more optimistic (and arguably realistic) assumptions for fleet turnover towards a higher percentage of lower emission vehicles.</p> <p>The physical road improvements associated with the Stafford Street Scheme have now been implemented, however the delivery of the proposed enhanced Urban Traffic Management Control (UTMC) system is not yet complete.</p>	<p>Noted</p>

Comment	Applicant's Response
<p>Although the predictions are perhaps slightly optimistic on this basis, they nonetheless present a scenario which reduces, rather than increases, the previously reported Derby Junctions air quality impacts.</p> <p>Therefore again, the existing modelling considered under the 2019/20 examination is deemed to represent a more conservative scenario than the updated data reflects.</p>	
<p>Highways England Data</p> <p>I note as part of Highways England's response to the request for representations, an updated assessment of construction-related air quality impacts is summarised. The documentation does not include the input data or any of the analysis results themselves, other than a statement that the updated assessment concludes that "construction of the Scheme will not give rise to materially worse or materially new air quality effects". It isn't possible to verify this statement without the relevant supporting information.</p>	Noted
<p>Conclusions Regarding Point 3</p> <p>The assessment work undertaken, and input data used in order to predict air quality impacts within the Environmental Statement produced as part of the previous examination, are considered to remain both robust and relevant.</p> <p>Consequently, the conclusions drawn in 2019/20 in respect of the A38 Derby Junction Scheme's potential to either create a significant air quality impact, cause a deterioration in air quality in a zone/agglomeration, cause a delay in areas not compliant with the Air Quality Directive becoming compliant or cause any compliant areas to become non-compliant, remain valid.</p>	Noted and agreed
<p>Point 4 – Relevance to current plans and policies</p> <p>DCiC Air Quality Action Plan Derby City Council published an updated Air Quality Action Plan (AQAP) in November 2020, which is available here:</p>	Noted and agreed

Comment	Applicant's Response
<p>https://www.derby.gov.uk/media/derbycitycouncil/contentassets/documents/environmentalndplanning/pollution/derby-air-quality-action-plan-2020.pdf</p> <p>The AQAP contains a list of measures, with associated supporting evidence, describing the action the Council intends to take in order to achieve compliance with the National AQ Objectives (as distinct from the Air Quality Standards Regulations 2010 – formally the EU Ambient Air Quality Directive (2008/50/EC)), in particular ensuring compliance within the Council's designated Air Quality Management Areas (AQMAs).</p> <p>The actions (see Table 9 of the Report) are however exclusively based around measures that the Council is itself delivering and therefore does not include projects outside of the Council's full control.</p> <p>It is however worth reiterating the position of DCiC with respect to air quality impacts arising from the A38 Derby Junctions Scheme, as was highlighted by DCiC during the previous examination, namely that the scheme is perceived to bring about net air quality benefits to the City of Derby.</p> <p>This is through reallocation of traffic away from the more congested inner city road network and AQMAs and onto the A38 strategic network, away from the greater density of sensitive receptors that exist within the City and thus being a net benefit for human health risks associated with air pollution exposure.</p> <p>Since the DCO additional national strategies and aspirations have been published regarding the phasing out of ICE vehicles, alongside many more policies as part of the transport decarbonisation plan, delivery plan for the transition to zero emission cars and vans and other related documents. The applicant has made reference to these documents (point2, 1st bullet). The applicant's approach to addressing the questions seems appropriate.</p> <p>The A38 Derby Junctions Scheme is therefore not considered to be in contravention with any of the measures contained within the Council's new AQAP and indeed, is deemed to largely support the Plan and its efforts to reduce vehicle emissions within the city's AQMAs. DCiC is unaware of any other new local plans or policies likely to affect the previous examination conclusions.</p>	

Comment	Applicant's Response
<p>Point 5 – Adequacy of Environmental Information</p> <ul style="list-style-type: none"> <i>other than the matters set out above, the adequacy of the environmental information produced in support of the application for the Development and whether further or updated environmental information is now necessary given the length of time since the examination closed</i> <p>Whilst environmental conditions will inevitably have changed over the period of time since the previous examination took place, DCiC is unaware of any significant factors or changes in circumstances which have the potential to have materially impacted upon the earlier environmental assessment work regarding noise, air quality or land contamination.</p> <p>As mentioned above with respect to air quality data, the previous 18 to 24 months have been abnormally affected by the covid-19 pandemic, primarily through a reduction in road traffic volumes, leading to lower-than-normal air pollutant and noise levels in particular.</p> <p>Therefore, use of more recent environmental data would likely have the effect of influencing the environmental assessment conclusions in a way that would lead to less, as oppose to more, reliable data.</p> <p>Consequently, it is the view of DCiC that the previous conclusions resulting from the Environmental Statement produced at the last examination, are still valid and relevant and would not benefit from reassessment using more recent data.</p> <p>The applicants approach to addressing the question seems appropriate.</p>	<p>Noted and agreed</p>
<p>Derbyshire Wildlife Trust (DWT) on behalf of DCiC, as our technical advisors, has reviewed the applicant's response to the Secretary of State's Statement of Matters of 2 August 2021 and with respect of Section 6 of the applicant's response wishes to highlight that the ecological assessment did not include the use of a biodiversity metric to quantify the biodiversity losses that will occur and the proposals for habitat creation and enhancement that the applicant proposes. In detail DWT has raised concerns with and through Derby City Council and Erewash Borough</p>	<p>Refer to the Applicant's response to Derbyshire Wildlife Trust's comments above.</p>

Comment	Applicant's Response
<p>Council in relation to the absence of biodiversity metrics and this question was discussed during the public enquiry. As DWT understand it the applicant has indicated that a biodiversity metric will be applied at the detailed design stage. However, the lack of metric information to date means that the magnitude of the impacts on habitats remains largely unquantified and it is therefore difficult for individuals and organisations reviewing the application to gain an understanding of whether the current proposals for mitigation and enhancement will be adequate to fully address the biodiversity losses. The lack of metrics is particularly concerning when habitats such as Wood-pasture and Parkland are being directly affected as these are treated as unacceptable loss requiring bespoke compensation measures in Defra's metric.</p> <p>As far as DCiC is aware HE has still not applied a biodiversity metric to the ecological assessment, so this remains a concern. In terms of other survey information HE has carried out surveys in 2020 and 2021 so we don't have any immediate concerns although if the scheme continues and there are further delays some survey work will need to be updated again in due course.</p>	
<p>With regard to section 8 and the potential impact on the veteran oak tree T358 there remains uncertainty on Highways England's part as to whether or not this tree will be retained. DCiC consider that the tree should be retained in situ. Veteran trees are irreplaceable habitats and impacts should in the first instance be avoided.</p> <p>Despite the applicant agreeing that it may be possible to retain the tree there still appears to be an overwhelming desire/predisposition to remove it. Site investigations to determine root growth at specific locations were attempted earlier this year but were halted due to protester presence.</p> <p>Figure 1: T358 Root Protection Area (RPA) Impacts - shows utility diversions and a drainage ditch within the RPA. Consideration must be given to relocating the utilities and ditch to limit the impact on the RPA.</p> <p>DCiC do acknowledge that the tree's RPA will be seriously compromised. Following the anticipated loss of some of the RPA it is accepted that the tree would not be retained as a full canopy tree and that if retained it will need to be managed</p>	<p>The Applicant disagrees with the City Council's statement that "...there still appears to be an overwhelming desire/predisposition to remove it [the veteran tree]".</p> <p>Referring to the Applicant's response to the SoM the Applicant has examined further options that increase the potential to retain the tree and reduce the Scheme impacts upon its RPA. Actions that have been undertaken in this regard include the repositioning the footbridge foundations, moving service diversions, moving the combined footpath/ cycleway and moving the highway drainage outfalls - such actions have reduced the Scheme's direct impact on the tree RPA.</p>

Comment	Applicant's Response
<p>in a much-reduced state. Retaining the tree in a much-reduced state would retain much of the valuable habitat associated with veteran trees including the immediate soil habitat with associated mycorrhizal associations. This soil habitat would be lost if the tree was felled, and the trunk installed in Markeaton Park as a totem (habitat) pole. If retained in a reduced state it may need to be subject to periodic static pull tests to confirm that it is safe to retain. The statement does not mention any proposed works to manage the tree in a reduced state.</p> <p>Further detailed assessment is required to determine if the tree can be retained, albeit in a reduced state. The detailed assessment must include a tree works management plan. The councils tree section and the TPO officer must be consulted during the detailed assessment.</p>	
11 Derbyshire County Council	
<p>Secretary of State request for further representations (point 2, 1st bullet)</p> <p>Derbyshire County Council Comments</p> <p>On 10h June 2020, Derbyshire County Council's Officer appeared at an Issue Specific Hearing on Air Quality and Climate Change for the DCO examination. A written summary of oral contributions on behalf of Derbyshire County Council was subsequently submitted to the Examining Authority which stated that:</p> <p>There were no specific questions on the agenda directed to Derbyshire County Council. However, at the end of questions a) to d) the Examining Authority invited the County Council to make any general comments on the issue of the impacts of the Little Eaton Junctions Scheme on Climate Change and Co2 emissions.</p> <p>Derbyshire County Council indicated that it had raised no fundamental issues or concerns with regard to the likely impacts of the scheme on Co2 emissions and climate change based on its review of the applicant's evidence in the Environment Statement and Outline Environment Management Plan.</p> <p>Derbyshire County Council was working closely with all of its district and borough council partners in the County to address and mitigate the impacts of climate change. The Derbyshire Environment and Climate Change Framework had been</p>	<p>Noted</p>

Comment	Applicant's Response
<p>adopted by the County Council and all the district and borough councils in October 2019 and committed all of the authorities to work together to meet the overall requirement for new zero carbon by 2050 and to meet the individual carbon budgets that had been set and agreed between the councils between 2018 and 2050 to deliver net zero.</p> <p>The Little Eaton Junction scheme was relatively limited in extent falling within Erewash Borough and it was considered that the scheme would have relatively limited impact on Co2 emissions and the carbon budgets that had been set for Erewash Borough and the County as a whole.</p> <p>Derbyshire County Council has reviewed the applicant's response on this matter as summarised above, particularly updated evidence provided by the applicant on the GHG emissions that are likely to be generated by the proposed highway scheme. Based on this response and updated evidence, it is considered that Derbyshire County Council's views remain unchanged from those set out above on the potential GHG emissions that are likely to be emitted through the construction and operation of the Little Eaton Junction part of the scheme and that this part of the scheme would be likely to have a relatively limited impact on the carbon budgets that have been set for Erewash Borough and the County as a whole, and consequently, the scheme is considered unlikely to have a material impact on the ability of the UK Government to meet its carbon reduction targets. In this regard, Derbyshire County Council has no evidence to offer of its own that would be likely to contradict or counter the applicant's evidence and conclusions on this matter, which is considered to be fair in terms of aligning with the standard approach used for these types of assessments.</p>	
<p>Notwithstanding the above, Derbyshire County Council would offer the following more specific comments on the applicant's response to this matter.</p> <p>It is considered that there may be too much reliance within the report on electric vehicle uptake reducing vehicle emissions going forward, with little detail or a potential quantification of these impacts provided. There also appears to be an over reliance on the success of the recently published Department for Transport's</p>	<p>Noted</p> <p>It is worth noting that the Applicant has adopted the Net zero highways plan and is working at pace to implement the actions contained within it in order to meet the targets for net zero construction and maintenance by 2040, and net zero road user emissions by 2050.</p>

Comment	Applicant's Response
<p>Transport Decarbonisation Plan in reducing emissions from vehicles but again the report does not make any reference to the possible magnitude of these impacts, or how the scheme would encourage people to switch to walking, cycling and public transport where possible.</p> <p>The report also mentions Highways England's Net Zero Plan and the commitment for their corporate emissions to become net zero by 2030, its maintenance and construction activities to be net zero by 2040 and road user emissions on the strategic road network to be net zero by 2050. However, again the report does not make any robust statements for how these commitments would be delivered and the specific interventions and scale of impact expected for the proposed A38 Junctions scheme. It also talks about Highways England's commitment to develop a blueprint for EV charging and energy storage by 2023. However, it is not clear how this will have any significant impact on reducing the emissions associated with the proposed scheme.</p>	<p>https://nationalhighways.co.uk/netzerohighways/</p>
<p>Secretary of State request for further representations (point 2, 2nd bullet) Derbyshire County Council Comments</p> <p>An assessment has been made by the applicant in the report to consider whether other strategic transport infrastructure beyond the boundary of the scheme, which may be subject to climate impacts, may have consequences that exacerbate the likely significant effects. It concludes that (in the event of a severe weather event) the broad number of journey options available, coupled with the level of mitigation embedded in the design of this scheme and the rail network would provide a sufficient level of systemic resilience to avoid a significant effect. However, the assessment does not consider cascade effects where impacts on one network can have a knock-on effect on another network, or the deep interdependencies that exist between infrastructure networks where they rely on each other to operate effectively in many ways.</p>	<p>Noted.</p> <p>While the assessment / SoM includes a methodology for assessing climate risk that aligns with LA114, the Applicant is also addressing climate risk at a national level through publishing regular reports under the Adaptation Reporting Power of the Climate Change Act. The Applicant has recently published its third round report which includes consideration of interdependent risks.</p>

Comment	Applicant's Response
<p>Key to the assessment and acceptability of the A38 Derby Junctions scheme is advice in the paragraphs 5.17 and 5.18 of the National Policy Statement for National Networks ('NNNPS');</p> <p>The NNPS, at 5.17 states that:</p> <p><i>Environmental Statement will need to describe an assessment of any likely significant climate factors in accordance with the requirements in the EIA It is very unlikely that the impact of a road project will, in isolation, affect the ability of Government to meet its carbon reduction plan targets. However, for road projects applicants should provide evidence of the carbon impact of the project and an assessment against the Government's carbon budgets</i></p> <p>The NNPS at 5.18 states that:</p> <p><i>....any increase in carbon emissions is not a reason to refuse development consent, unless the increase in carbon emissions resulting from the proposed scheme are so significant that it would have a material impact on the ability of Government to meet its carbon reduction targets.</i></p> <p>As noted above, Derbyshire County Council has no evidence of its own to dispute or contest the applicant's response to matter 2.2 and the updated evidence it has submitted that the contribution of GHG emissions resulting from the Scheme is assessed as a maximum of 0.0043% across all relevant carbon budget periods and as such this will not materially affect the ability of the Government to meet its carbon budgets. The County Council considers this to be a fair assessment in terms of aligning with the standard approach used for these types of assessments.</p> <p>Accordingly, in the context of paragraphs 5.17 and 5.18, if the evidence and applicant's conclusions are accepted, the likely increase in emissions from the scheme would not appear to be a reason to refuse development consent for the scheme.</p>	
<p>Secretary of State request for further representations (point 2, 4th bullet) Derbyshire County Council Comments Local Plan Context</p>	<p>Noted and Agreed</p>

Comment	Applicant's Response
<p>Derbyshire County Council would concur with the applicant's response to this matter that the key local development plan documents of relevance to the assessment of the scheme remain unchanged. The Derby City Local Plan Part 1 was adopted by the City Council in 2017. Derbyshire County Council is currently working jointly with Derby City Council, Amber Valley Borough Council and South Derbyshire District Council that comprise the Derby Housing Market Area (HMA), to take forward reviews of their respective local plans. However, these reviews, including the Review of the Derby City Local Plan, are still in very early stages of preparation and so the Plans are not at a stage that would have any material impact on the assessment of the A38 Derby Junctions scheme.</p> <p>Erewash Borough Council commenced a review of its Core Strategy in 2019. Since then, the Borough Council has published an Erewash Core Strategy Review - Draft Options for Growth (January 2020) and Erewash Core Strategy Review – Revised Options for Growth (March 2021). Essentially, both of these consultations set out a range of potential housing and employment sites that the Borough Council considers might be suitable as allocations in the Core Strategy Review. None of the sites that have been identified in the consultation documents are likely to have any material impact on the assessment of the A38 Derby Junctions Scheme. Furthermore, neither document sets out any policies that may be relevant to the assessment of the scheme.</p>	
<p>The Derwent Valley Mills World Heritage Site Management Plan (WHSMP)</p> <p>Derbyshire County Council is one of the constituent local authorities that are covered by the Derwent Valley Mills World Heritage Site (DVMWHS) and its buffer zone. The DVMWHS Partnership has responsibility for producing and reviewing the DVMWHS Management Plan. A review of the Management Plan has recently been undertaken and the DVMWHS Management Plan 2020 – 2025 was published in 2021. The updated document now includes the requirement for Heritage Impact Assessments to be undertaken in relation to new developments, something that was absent from the 2014-2019 Management Plan. The Management Plan has 7</p>	Noted and Agreed

Comment	Applicant's Response
<p>key aims, of which the following are of particular relevance to the A38 Derby Junctions Scheme:</p> <p>Aim 1 Protect and conserve the Outstanding Universal Value of the DVMWHS to ensure its transmission to future generations. Aim 1 is paramount and all other aims must not conflict with it.</p> <p>Aim 3 Promote the sustainable development (Environmental, Economic and Social) of the DVMWHS to provide a world-class destination where people are proud to live, work, visit and invest.</p> <p>Aim 6 Promote a cohesive and coherent understanding of the DVMWHS by identifying its differing spatial needs and priorities.</p> <p>During early stages of the public examination into the DCO for the A38 Junctions scheme, Derbyshire County Council expressed significant concerns about the proposed design of the Little Eaton junction part of the scheme and its potential impact on the Outstanding Universal Value (OUV) of the DVMWHS. During the examination process, however, and at the request of the Panel of Inspectors, Derbyshire County Council worked with the applicant's consultants to seek to address these concerns. Further work carried out by the consultants, particularly the production of extensive visualisations and photomontages of the scheme, as existing and as proposed with associated mitigation, satisfactorily addressed the County Council's concerns and it was able to confirm to the Panel of Inspectors at the Examination hearings that the County Council considered that the scheme would be unlikely to have any significant harmful impact on the OUV of the WHS over and above the impacts of the existing scheme.</p> <p>The Secretary of State may wish to be aware that on 4th February 2021, the DVMWHS Partnership was contacted by HM Government, informing them that UNESCO had requested a State of Conservation report on the DVMWHS. This was due to a concern highlighted by UNESCO that a number of planning</p>	

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<p>applications were being granted permission in the DVMWHS, even though Historic England, the DVMWHS Partnership, ICOMOS International (as UNESCO's cultural heritage advisor) and planning authorities' own conservation officers were all identifying that the proposals would negatively impact on the OUV of the WHS.</p> <p>To have a deeper understanding of the existing and planned strategies and policies related to the protection and management of the WHS, and to be able to assess the potential impact of all current major project plans, the World Heritage Centre asked the Government to submit a report on the State of Conservation of the DVMWHS by 1 December 2021, for review by the Secretariat and the Advisory Bodies.</p> <p>The requirement for the DVMWHS Partnership to submit a State of Conservation Report by UNESCO, is highlighted by Derbyshire County Council to emphasise the crucial importance of the design of all new developments within and adjoining the DVMWHS and how they should seek to minimise impacts on the OUV of the WHS. This should also apply to the A38 Derby Junctions Scheme. Since the granting of the original DCO for the scheme by the Secretary of State on 8th January 2021, Derbyshire County Council has continued to be engaged by Highways England and their consultants with the submission of various 'Requirements' for the County Council's comments relating to detailed aspects of the scheme, including landscaping, ecology, flood risk and street lighting details. The need to minimise the potential impact of the detailed design of the scheme on the OUV of the DVMWHS has been an important principle in the County Council's consideration of the various 'Requirements' and the comments it has submitted to Highways England and their consultants.</p>	
<p>Derbyshire Local Transport Plan</p> <p>In April 2011, DCC published its Local Transport Plan (LTP) (3). It sets out a transport vision, goals, challenges to be tackled and a strategy covering the period to 2026</p> <p>With regards to the A38, Chapter 10.2 summarises examples of projects led by others which have an influence on Derbyshire, including the Highways Agency</p>	<p>Noted</p>

Comment	Applicant's Response
<p>(now Highways England) for Trunk Road schemes, rail projects, regeneration, cross boundary projects and green infrastructure strategies. The A38 Derby Junctions is specifically listed as a project which would enhance the capacity of the Trunk Road network to accommodate strategic traffic and new development growth. It is indicated that:</p> <p><i>The A38 junctions include that at Little Eaton / Abbey Hill, which falls within Derbyshire; the aim of the Highways Agency is to start construction after 2015. These junctions represent a major constraint for the County and their improvement is important to the County's wider economic prosperity, as well as linking with possible housing developments in the Derby Housing Market Area</i></p> <p>The A38 Junctions scheme is, therefore, recognised in the LTP as being important to the County's wider economic prosperity and would help to deliver new housing developments within the Derby HMA. The Scheme would also meet a number of elements of the LTP's Vision, particularly to achieve a transport system that is both fair and efficient, promotes safer communities and provides better access to jobs and services.</p> <p>It should be noted that Derbyshire County Council has recently commenced work to review the LTP. However, this work is still in its relatively early stages and no public consultation has been carried out by the County Council thus far on the Review. Accordingly, the existing LTP (3) remains as the relevant Local Transport Plan for the Derbyshire part of the A38 Junctions Scheme.</p>	
12 Mair Bain (Derby Climate Coalition) and support document provided by Dr. Boswell	
<p>Provision of 'further information'</p> <p>Mair Bain states that the information provided by NH in its response of 31st August 2021 to the Statement of Matters is further environmental information and triggers the requirement in regulation 20 of the Infrastructure Planning (EIA) Regulations 2017 for public notification and consultation process to allow interested parties to consider and comment on the further information. Mair Bain states that the SoS</p>	<p>The SoS has given no indication that the environmental statement is inadequate or that further information is necessary and has given all parties the opportunity to comment upon this in response to the issued SoM. It is the Applicant's view that the ES complies with regulation 14(2), which sets out the information that must be contained within an Environmental Statement.</p>

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<p>should consider appointing/reappointing an Examination Panel before a decision is made.</p>	<p>In relation to the redetermination of the application, this is governed by rule 20(2) of the Infrastructure Planning (Examination Procedure) Rules 2010 which essentially provides for the redetermination to be undertaken through written process.</p>
<p>Further information needs to be provided Building on from the inconsistencies identified between the data presented in the ES Chapter 14 [APP-052] and those set out in the Applicant's response to the Statement of Matters, which the Applicant has responded to in section 1b (iii), Mair Bain and Dr Boswell also express concern about unusually high carbon emissions associated with operational lighting and maintenance (for example around 5,000 tCO₂e from non-road user emissions during the 4th carbon budget period).</p>	<p>The additional ~5,000 tCO₂e is from energy use and maintenance over the 3 years of operation within the 4th carbon budget period. This is driven largely by maintenance (mostly embodied carbon associated with replacement materials e.g., road resurfacing), but also includes emissions associated with the operation of a pumping station to prevent flooding, and minor emissions associated with lighting etc. This difference applies to the 5th and 6th Carbon Budgets as well. While we present data in line with the ES in section 3 of this report, we also present a further comparator calculation that presents the latest update to the calculations. Here, non-road user operational emissions have decreased due to lower embodied carbon and operational energy use emissions factors in the latest National Highways carbon tool and BEIS emissions factor database, in line with the UK's decarbonisation efforts.</p> <p>To add further detail here, the embodied carbon of replacement materials is driven by the road surfacing materials. On the basis of professional judgement, it was assumed that the road would be resurfaced every 10 years (replacing the surface layer of the paved areas), and that 30% of the binder layer would also be replaced every 20 years as part of resurfacing activities. Other aspects such as road restraint systems were also assumed to be replaced periodically. GHG emissions associated with these cyclical maintenance activities have been calculated over the 60-year design life of the Scheme, and annual average emissions have been apportioned to the relevant carbon budget periods.</p>

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	<p>Also, due to the level of granularity of the construction materials data and plant schedules received, it was not possible to calculate the maintenance baseline (i.e. the maintenance emissions that would have occurred on the road without the scheme). Instead, all road maintenance emissions have been included in the assessment as additional emissions as a result of the scheme, which represents a conservative worst-case scenario.</p> <p>For both the data presented in the 2019 ES and the SoM in 2021, embodied carbon numbers from the National Highways Carbon Tool used to calculate construction emissions were used to estimate these emissions over the lifetime. As this is based on current emissions factors, this represents a robust worst-case approach as materials are expected to have a lower embodied carbon in the future due to grid decarbonisation and progress towards other carbon reduction ambitions across the sector.</p>
<p>Solus v absolute emissions reporting</p> <ul style="list-style-type: none"> Mair Bain and Dr Boswell state that the absolute or total emissions figure should be used, not the solus (i.e., the difference between do minimum and do something). It is suggested that the assessment should be based on the total do minimum emissions presented in the Statement of Matters response i.e. 101,240,659 tCO₂e. Or “At the very least, even if the Applicant decides to use the solus differential figure, the limitations of this (and what it means for assessing the Scheme’s emissions impacts) needs to then be fully explained to the SoS (which the Applicant has not done).” Mair Bain and Dr Boswell also raise concern with regard to the Applicant’s approach that there has been cumulative assessment of road user emissions as the traffic model is considered inherently cumulative. Dr Boswell highlights that as both the Do Minimum and Do Something Scenarios both include the impact of other planned development, the 	<p>Bullet point 1:</p> <p>The Applicant does not agree with the suggested approach to reporting greenhouse gas emissions being put forward by Dr Boswell with regard to reporting solus versus absolute emissions. The purpose of Environmental Impact Assessment is to identify and assess the impact of a proposed development on the environment. The GHG assessment therefore seeks to identify and assess the volume of additional greenhouse gas emissions that could arise as a result of the Scheme and the impact they will have on the climate.</p> <p>The Applicant does not consider it appropriate to assess the scheme based on the absolute (Do Something) emissions. This approach assesses the impact of the wider road network (the vast majority of which already exists), and does not represent the impact</p>

Comment	Applicant's Response
<p>assessment of any impact identified must only be as a result of the proposed Scheme.</p>	<p>of the scheme. Using the absolute emissions would result in a very large over-estimate of additional emissions from the Scheme. For the SoM, GHG emissions arising during the 4th, 5th and 6th carbon budget periods for the Do Minimum Scenario are 101,189,344 tCO₂e. Emissions for the Do Something Scenario over the same time period are 101,240,659 tCO₂e, The variation between the Do minimum and Do something Scenarios, the net project GHG emissions, represents the additional emissions as a result of the Scheme. It should be noted that the road user GHG emissions for the Do Minimum and Do Something scenarios are based on a traffic model which covers a large area to take account of road users taking different long distance routes due to the Scheme. It is the same area as was assessed for the transport economic efficiency appraisal.</p> <p>Please note, the Applicant acknowledges an error in Table 2-2 identified by Dr Boswell, whereby column 2 is reported as 'Estimated total GHG emissions over relevant carbon budgets (tCO₂e) (DS - DM Scenario)' and presents total estimated emissions as 101,240,659 tCO₂e. This in fact should have been titled 'Estimated total GHG emissions over relevant carbon budgets (tCO₂e) (Do something Scenario)'.</p> <p>Bullet point 2:</p> <p>The Applicant notes the point raised by Dr Boswell with regard to the traffic model being inherently cumulative however it is considered that the approach taken to assess cumulative assessment of road user and other planned developed emissions is appropriate.</p>

Comment	Applicant's Response
	<p>As presented under Question 3, as emissions both with and without scheme scenarios already include all likely developments and traffic growth factors, the assessment is inherently cumulative as regards operational carbon emissions.</p> <p>This is recognised in general terms in paragraph 3.4.4 of the Planning Inspectorate's Advice Note 17 ("Cumulative effects assessment relevant to nationally significant infrastructure projects"), the first two sentences of which state that:</p> <p>"Certain assessments, such as transport and associated operational assessments of vehicular emissions (including air and noise) may inherently be cumulative assessments. This is because they may incorporate modelled traffic data growth for future traffic flows".</p> <p>Furthermore, an environmental statement should include such information as is reasonably required to describe the environmental effects of the development and which the applicant can reasonably be required to compile having regard to current knowledge^[1]. (see <u>R. (Khan) v London Borough of Sutton [2014] EWHC 3663 (Admin)</u> and <u>Preston New Road Action Group v Secretary of State for Communities and Local Government [2018] Env. L.R. 18</u>). In the context of assessing cumulative carbon impacts, the only assessment the Applicant can be reasonably required to undertake is one having regard to current knowledge.</p>
<p>GHG assessment study areas Further to his concerns around the consideration of cumulative emissions (which has been responded to in section 3), Dr Boswell also raises concerns that the</p>	<p>The Applicant considers the study area selected for the greenhouse gas assessment to be appropriate and includes all material GHG emissions arising as a result of the Scheme.</p>

^[1] (see R. (Khan) v London Borough of Sutton [2014] EWHC 3663 (Admin) and Preston New Road Action Group v Secretary of State for Communities and Local Government [2018] Env. L.R. 18)

Comment	Applicant's Response
<p>Applicant has not properly considered an appropriate study area for the assessment of carbon impacts and that the Applicant has applied different study areas for different sub-types of carbon emissions</p>	<p>While the study area for construction emissions focusses on activities within the Site boundary, emissions arising outside the Site boundary for example the transportation of waste, materials and work force are all included in the assessment. Lifecycle embodied carbon in the materials used for construction, including the extraction, processing and manufacturing of materials, is also considered in the assessment. However, at the outline design stage of the Scheme it is not possible to state where the construction materials will be sourced and therefore the exact location where these emissions will arise.</p> <p>The study area for operational emissions from road users is the same as the traffic model network that was used in the transport economic efficiency appraisal and covers a large area in order to take account of road users taking different long-distance routes due to the Scheme. In addition to road users, the operational emissions from maintenance and energy to be used during the operational phase are recorded from activities within the site boundary and include emissions from outside the site, for example in respect of the lifecycle of materials used.</p>
<p>Defining 'material' impacts</p> <p>Mair Bain states that the term "<i>material impact</i>" is not defined in the NPSNN, and as such must therefore "<i>be a matter of (rational) judgement</i>". Mair Bain submits that "<i>material</i>" means anything that is non-negligible. "<i>I.e. if a project's carbon impacts will have a non-negligible impact on the ability of Government to meet its carbon reduction targets, then this can – according to the NPSNN – be a reason to refuse development consent.</i>"</p> <p>Mair Bain also states that "<i>any (non-negligible) expected additional emissions up to and beyond 2050 will have a "material impact" on the ability of the Government to meet the Net Zero Target because the entirety of those new emissions will need to be otherwise offset and/or balanced out by carbon sequestration and/or mitigation.</i>"</p>	<p>The Applicant notes Mair Bain's proposed definition of 'material' impact. However, as outlined in Chapter 14 of the ES [APP-052], the Applicant notes that in the NPSNN it states that it is very unlikely that the impacts of a road project would, in isolation, affect the ability of the government to meet its carbon reduction plans. Indeed emissions arising as a result of the Scheme represent less than 0.01% of total emissions in any five-year carbon budget during which they arise. In this context, it is concluded that the GHG impact of the Scheme would not have a material impact on carbon reduction targets as set by the UK government.</p>

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<p><i>That is not to say that they will necessarily preclude the target being met (i.e. that they are "incompatible" with it), but rather that they will make it that much harder for the Government to reach it. And, by making it that much harder they will have a "material impact" on the Government's ability to meet the target."</i></p>	<p>In respect of assessing the carbon emissions from a single project against the Government's net zero target, please see the Applicant's response to SoS question 3.</p>
<p>Land use change calculation Dr Boswell has expressed concern that the Applicant has not assessed all types of carbon sequestration, as defined by PAS2080. Dr Boswell states the all direct and indirect effects should be covered, including those that fall under PAS2080 module D "benefits and loads beyond the system boundary", which includes future ability to sequester carbon from habitats lost and gained as a result of the Scheme.</p>	<p>In Chapter 14 of the ES [REP-052], the greenhouse gas assessment baseline is described as "a 'do-minimum' scenario, whereby the Scheme does not go ahead", which includes the carbon sequestration associated with the current land use within the scheme boundary. The Applicant does not consider it appropriate to speculate what other land uses may be possible in the future, and therefore what hypothetical loss or gains to carbon sequestration could occur over the project lifecycle.</p> <p>The scope of the greenhouse gas assessment is considered to be in line with the requirements of the DMRB LA 114 guidance.</p>
<p>Monitoring requirements Mair Bain submits that, should the SoS consider making the order, he should require monitoring measures in relation to GHG emissions, and that "this is in particular necessary to address entirely unknown estimates of emissions from the Scheme beyond 2039."</p>	<p>Monitoring requirements appropriate to the Scheme will be put in place. GHG emissions during construction and maintenance will be monitored and recorded by the selected contractor to comply with National Highways' requirements.</p> <p>A post-opening project evaluation (POPE) is undertaken one year and five years after a scheme has started operating. This assessment compares changes in key impact areas by observing trends before the scheme was constructed (baseline) and tracking these after the opening of the scheme to traffic. These are the compared against the expected impacts of the scheme. Impacts are assessed for traffic flows, traffic speeds, road user safety, journey time reliability and greenhouse gases.</p>
<p>Air quality impacts</p>	<p>Derby City Council operates a comprehensive air quality monitoring programme across the city. This included 71 NO2 diffusion tube sites in 2020 of which four are in Stafford Street. This monitoring</p>

Comment	Applicant's Response
<p>In Mair Bain's response, the SoS is encouraged to require appropriate monitoring measures, along with any related remedial action requirements, to be imposed (pursuant to Reg 21(1)(d)) as the Applicant is relying on the success of these recently introduced air quality measures in Stafford Street to show that the Stafford Street area will become compliant with limit values, even with the Scheme's construction.</p> <p>Mair Bain's response also disputed the assertion that the Derby Junctions scheme would make a "notable improvement to air quality in these locations" through moving the footpaths further back from the road."</p>	<p>network will provide information as to the effect the range of air quality measures that the Council is implementing which includes the traffic management measures for Stafford Street. The air quality improvement measures are set out in the Derby City Council Air Quality Action Plan which is discussed under point 4 of Derby City Council's submission published on 27/10/21. Progress on implementation of these measures is reported in Table 2.2 of the Council's 2021 Air Quality Annual Status Report.</p> <p>Members of the public will spend more time on footpaths than at locations in-between the carriageway and the footpath, therefore the exposure to pollution by users of the footpath will be reduced with the Scheme due to the relocation of the footpath away from the carriageway. The Air Quality Standards Regulations 2010 require air quality to be assessed at locations where the population will be "exposed for a period which is significant in relation to the averaging period of any limit value" such as a footpath or residential property. The area between the footpath and carriageway does not meet this criterion.</p>
<p>Changes to relevant policy (SoM para 2, bullet point 4)</p> <p>Mair Bain cited the following guidance documents as having been updated since the end of the Examination:</p> <ul style="list-style-type: none"> (i) HM treasury Green Book, (ii) Valuation of greenhouse gas emissions (iii) DfT's WebTAG guidance (iv) DMRB Volume 11, Section 3, Part 1, HA 207/07 - This was withdrawn in November 2019. (v) Highways England Carbon Reporting Tool 	<p>Before main construction work can commence the project will need to have a full business case in place and gain approval from National Highways' Investment Committee, with this incorporating an assessment of Economic Value for Money for the scheme.</p> <p>The BCR is re-calculated at each key stage (end of preliminary design ahead of the DCO application and at the end of detailed design ahead of construction starting). The BCR (and Value for Money) will be re-estimated before a final decision is made to commit construction funds.</p>

Comment	Applicant's Response
<p>The representation continued (paragraph references included):</p> <p>126. The ExA noted that the Applicant advised the scheme had been subject to economic assessment which followed the DfT's WebTAG guidance and HM Treasury's Green Book and the benefits and disbenefits monetised to provide a benefit to cost ratio (BCR). It was necessary for the ExA (and SoS) to satisfy themselves that the approach taken to the economic assessment was consistent with the advice at paragraph 4.5 of the NPS NN [ExA Report, 4.5.11], which provides that this information is important for the Examining Authority and the Secretary of State's consideration of the adverse impacts and benefits of a proposed development.</p> <p>127. In order therefore to satisfy the requirement of NPS NN paragraph 4.5 and in order that the SoS can provide an up to date reasoned conclusion on the benefits of the Scheme, the Applicant must undertake an assessment of the Scheme against the most recent Government policy and guidance and recalculate the BCR which, in light of the above, is likely to have changed.</p> <p>128. The recalculation of the BCR will also be relevant to the SoS's assessment of the "straightforward" balancing exercise required under section 104(7) of the Planning Act between the Scheme's "adverse impact" and "benefits".</p>	
<p>Adequacy of environmental information (SoM para 2, bullet point 5) Mair Bain's response states: "Overall the adequacy of the environmental information produced in support of the application for Development is, in light of the length of time since the examination closed, inadequate and, as per the paragraphs above, further information is now required to provide the SoS with an up to date picture. In particular, Ms Bain is not in a position to comment</p>	<p>As detailed in the Applicant's response to the SoM, since the close of the DCO examination a range of pre-construction surveys and assessments have been undertaken, including surveys to identify changes in the presence and/ or distribution of protected and notable species. Surveys and assessments undertaken these were summarised in Table 1 of the response to the SoM. These</p>

Comment	Applicant's Response
<p>substantively on the Applicant's Response because no information of sufficient detail has been provided by the Applicant in respect of the recent survey work mentioned in the Response (Table 1, Response), although she notes that Environmental Information, as defined in regulation 3 of the EIA Regulations, encompasses more than just the items listed by the Applicant in Table 1 of the Response"</p>	<p>effectively monitor for potential changes to baseline conditions since the examination closed, as well as define whether there have been any changes to the significance of effects as reported in the Environmental Statement (ES).</p>
<p>Veteran Oak Tree</p> <p>Mair Bain expressed concern over the proposed method of surveying the tree roots involving 'digging by hand and utilising vacuum excavation' to expose the tree's roots. These concerns were raised by Dr Mark Bulling, Senior Lecturer in Ecology at the University of Derby, who noted that such methods could seriously disrupt the mycorrhizal (fungal) soil communities that are inherently related to the tree root system and are critical for the tree gaining nutrients and minerals. He also noted that any damage to the root system, albeit unintended, could result in increased risk of exposure to disease. He suggested instead the use of ground-penetrating radar (GPR) as an alternative method.</p> <p>Mair Bain also noted that there should be compensation for the loss of the tree if it transpires that it can't be retained. The representation stated:</p> <p>The ExA considered that the loss of the veteran tree weighed significantly against the DCO being made [ExA Report, 6.5.9] but that its loss would clearly be outweighed by the national need for, and benefits of, the Proposed Development, and therefore found that paragraph 5.32 of the NPSNN has been satisfied [ExA Report, 6.5.14].</p> <p>The NPS NN is clear that although the NPPF is not intended to contain specific policies for NSIPs it should be applied to the extent that it is relevant to the project (see NPSNN paragraph 1.18 "The NPPF is also likely to be an important and relevant consideration in decisions on nationally significant infrastructure projects, but only to the extent relevant to that project."). NPPF (2021) paragraph 180(c)</p>	<p>GPR is useful at illustrating the spread of a tree's root system and its depth but it does not provide any information on the significance of particular roots (e.g. root size/diameter). The GPR typically picks up 'all roots bigger than 20mm diameter' but it won't help identify if a root is 20mm or 200mm diameter. A 20mm root may be pruned with a limited impact on the tree but a 200mm diameter root is highly unlikely to be acceptable to prune. Hand digging and vacuum excavating is the only practicable means of exposing the tree roots and provide the required information without causing damage to the roots.</p> <p>Regarding compensation for the loss of the tree, although the DCO proposals allow for the removal of the veteran oak tree T358, the current focus and intention of the detailed design and the development of the construction methodology is that this tree is retained. Nevertheless, to ensure a worst-case assessment the Environmental Statement was prepared on the basis that the veteran tree would be removed and the associated landscape mitigation strategy as illustrated on the Environmental Masterplan, takes into account mitigation for all lost vegetation, including the veteran tree in compliance with the NNNPS as the applicable principal planning policy. NPSNN states at para 5.32 that "The Secretary of State should not grant development consent for any development that would result in the loss or deterioration of</p>

Comment	Applicant's Response
<p>provides that development resulting in the loss or deterioration of irreplaceable habitats (such as ancient woodland and ancient or veteran trees) should be refused, unless there are wholly exceptional reasons and a suitable compensation strategy exists. Footnote 63, in respect of wholly exceptional reasons, gives the example of infrastructure projects (including NSIPs, orders under the TWA and hybrid bills), where the public benefit would clearly outweigh the loss or deterioration of habitat. Therefore, the application of NPPF paragraph 180(c) to NSIPs is directly contemplated and should therefore form part of the decision-making process. Accordingly, there should exist a suitable compensation strategy for the loss of veteran tree T358.</p>	<p>irreplaceable habitats including ancient woodland and the loss of aged or veteran trees found outside ancient woodland, unless the national need for and benefits of the development, in that location, clearly outweigh the loss. Aged or veteran trees found outside ancient woodland are also particularly valuable for biodiversity and their loss should be avoided". The paragraph continues to state that "Where such trees would be affected by development proposals, the applicant should set out proposals for their conservation or, where their loss is unavoidable, the reasons for this". It is considered that National Highways has set out an approach (as detailed in the Outline Environmental Management Plan (OEMP)) that increases the potential to retain the veteran tree. Nevertheless, the Scheme will still inevitably have a significant effect on the tree's root protection zone (RPA) and despite best endeavours, the veteran tree may be unavoidably lost. In terms of the policy tests within the NPSNN, the loss of the veteran tree should be weighed against the clear national and local need for the Scheme coupled with the significant benefits that the Scheme will bring.</p> <p>As the project is a Nationally Significant Infrastructure Project it clearly meets the exceptional circumstances test whilst the environmental design for the Scheme includes a suitable landscape planting strategy that takes into account the potential veteran tree loss (to be implemented via the OEMP).</p>