

## **A57 LINK ROADS**

**TR010034**

**DEADLINE 5 FEBRUARY 23<sup>rd</sup> 2022**

**RESPONSES TO DEADLINE 4 SUBMISSION**

**National Highways comments on CPRE PDSY written representation**

**CPRE Peak District and South Yorkshire Branch**

**Unique Reference: 20029243**

**CPRE PDSY REBUTTAL OF NH'S RESPONSE TO OUR WRITTEN REPRESENTATION - REP2-069, REP2-070 AND REP2-071**

**TRANSPORT**

**NH COMMENTS**

**CPRE PDSY REBUTTAL**

*CPRE: The need for the A57 Link Roads is not established*  
 2.1.1. The need for the Scheme has been firmly established through the analysis underpinning the first Route Investment Strategy (RIS1) for the A57/A628 Trans Pennine route and was confirmed by the RIS1 announcement that describes the preferred intervention on which the Scheme is based. The need for the Scheme is also set out in the Case for the Scheme (REP2-016).

As in the Treasury Green Book, the need for this scheme must be considered in the light of whether it is the best option for achieving objectives. Our emerging package of measures – Car Free Low Carbon Travel for Longdendale and Glossopdale – reduces traffic and its impacts and so meets national regional and local policy, and would enhance the conditions for all the villages along the trunk route. It is a more effective, efficient and cheaper option to, and one that could be implemented without the disruption of the proposed road scheme.

2.1.2. The Scheme meets its stated objectives in addressing the identified problems as set out in the Case for the Scheme (REP2-016).

We disagree, as follows:  
  
 First because the Scheme has missing objectives in particular to support the national Decarbonisation Strategy or the Greater Manchester Transport Strategy. Second this scheme is essentially an urban scheme assessed as though it were a rural one. This is clear from the work undertaken on the data newly supplied by NH. To illustrate this we have extracted from the model benefits for only those trips **entirely within** the Greater Manchester area. There is no allowance for trips between urban areas where similar sustainable policies apply. As can be seen from the map below on page 12, most of these trips are outside the area of detailed modelling and subject to the techniques of fixed costs and masking. Both of these would cause an underestimate of the impacts. Despite this the area contains 55% of all the scheme benefits.

The objectives are listed in blue font in the adjacent column.

None of these are on trips outside the area, although these are also subject to sustainable policies in the TfGM Transport Plan. This is therefore a very stringent test and shows the inadequacy of the assessment.

**Connectivity – By reducing congestion and improving the reliability of people’s journeys through Mottram in Longdendale, Hollingworth and Tintwistle and also between the Manchester and Sheffield city regions.**

Congestion would improve on Hyde Road and on Mottram Moor between Back Moor and Stalybridge Road, if the traffic calming measures are effective. However, north-south journeys on Market Street and Stalybridge Road would be more congested and unreliable with the scheme. The already congested journeys through Hollingworth and Tintwistle would remain and could worsen. There is no evidence provided that congestion would be reduced and reliability improved on journeys between Manchester and Sheffield. At the M60 J24 interchange any benefits would be lost by increased traffic and congestion here. DCC has shown that journeys within Glossop would take longer.

The lack of detailed modelling means that increased congestion in areas immediately to the west of the scheme (in Greater Manchester) are underestimated or missing.

**Environmental – By improving air quality and reducing noise levels in certain areas, through reduced congestion and removal of traffic from residential areas. The Scheme is also being designed to avoid unacceptable impacts on the natural environment and landscape in the PDNP.** Air quality and noise would reduce alongside Hyde Road and Woolley Lane but those living on Market St, Stalybridge Road and Back Moor would endure worse conditions. Traffic and congestion would increase in Glossopdale on many residential roads. The objection from

	<p>the PDNPA shows the ‘unacceptable impacts’ on the PDNP have not been avoided.</p> <p><b>Societal - By reconnecting local communities along the Trans-Pennine route</b></p> <p>Those living on Hyde Road and the western end of Mottram Moor may be reconnected <u>if</u> the traffic calming measures are effective. There is <b>no</b> reconnection for those living on eastern length of Mottram Moor, in Hollingworth, Tintwistle, Crowden, Langsett and other settlements further east.</p> <p><b>Capacity - By reducing delays and queues that occur during busy periods and improving the performance of junctions on the route.</b></p> <p>As stated above the major impacts of the scheme are hidden by the fixed network costs outside the ADM, by the masking, and by the lack of detail in the zones/network (as discussed at the ISH2).</p>
<p><b>CPRE:</b> <i>The Transport Appraisal Report is too superficial to allow full comprehension of the traffic effects.</i></p> <p><b>National Highways response:</b></p> <p>2.1.3. The Transport Assessment Report (TAR) (APP-185) has been prepared in accordance with best practice and presents the relevant transport related impacts of the Scheme in sufficient detail to adequately assess and comprehend its traffic effects.</p>	<p>As the DCO proceeds we learn important new facts about the scheme that have only come to light due to the information requests and questions asked by our consultant Keith Buchan. The information is still incomplete, despite the process being started in March last year. Substantial issues are being exposed such as the limited or non-existent treatment of public transport, walking and cycling in the forecasting, modelling and appraisal process. There may be some movement by NH on re-modelling and this is considered in the accompanying note. We have already demonstrated in the submission for D4 that important parameters were omitted from the uncertainty log, failing to follow the DfT Uncertainty Toolkit.</p> <p>These show that the TAR did not supply sufficient detail to assess and comprehend the traffic effects. Subsequent material has cast some light on the significance of this but it should have been in the documents originally submitted.</p>

<p><b>CPRE:</b> <i>Alternative measures that would address the problem without invasive road building were dismissed inappropriately...</i></p> <p>2.1.4 Refer to National Highways' response RR-0282-5 to the Relevant Representations (REP1-042).</p>	<p>As above, the Green Book approach points to options as the way to deliver value for money. Given the negative performance of the scheme against many key objectives, in particular the undermining of sustainable alternatives, a non-road capacity increase package should be considered. In this case such a package is an alternative, not one which could be introduced at the same time or subsequent to the road capacity increase. This is because the higher the benefit to road users, the greater the difficulty in persuading them to meet the DfT Decarbonisation Strategy targets. This is also the reason that modelling the road scheme with the Decarbonisation Strategy traffic reduction targets applied to the forecast but without any specific measures to achieve them would be completely misleading. This applies to the carbon assessment as well as traffic.</p>
<p><b>CPRE:</b> <i>A lorry ban coupled with sustainable transport measures and technological improvements was never fully tested in 2015</i></p> <p>2.1.5. Please refer to National Highways' response RR-0170-1 to the Relevant Representations (REP1-042).</p>	<p>The test was on an earlier version, it was undertaken against a set of out of date objectives, has no allowance for a variable goods matrix, and relies on administrative complexity to reject it. These issues have still not been addressed.</p>
<p><b>CPRE:</b> <i>The strategic case for which has not been updated, as we pointed out in December 2020. The Treasury updated its Green Book in November 2020 which gave the applicant plenty of time for a review of the strategic case.</i></p> <p>2.1.6 The strategic case for the Scheme was reviewed and updated in 2021 to reflect the Treasury's updated Green Book issued in November 2020. The information presented in The Case for the Scheme (REP2-016) is therefore based on the Treasury's most up to date Green Book.</p>	<p>The 2015 high level assessment of options was not repeated and this was confirmed by email. Since this is the key part of the Strategic Assessment, without this it cannot be claimed that the Strategic Case has been updated.</p>
<p><b>CPRE comment:</b> <i>The nature of the problem has not been defined in the DCO documents.</i></p> <p>2.1.7 National Highways considers that the nature of the problem has been clearly defined and summarised in the DCO documents and does</p>	<p>At the strategic level, a failure to identify and assess against key objectives such as carbon reduction, improving air quality and road safety means the problems cannot be identified correctly. A neutral or small negative is not good enough; there are clear policies to make</p>

<p>not underplay the complexity of the issues. CPRE has not suggested an alternative description of the problems along the corridor.</p>	<p>progress on all of these and the Green Book comparison is with expenditure which would generate progress in achieving these objectives.</p> <p>We define the nature of the problem on pages 10-12 of REP2-069 our written representation. This is a holistic strategic definition that is pertinent for an NSIP being proposed as part of the SRN. For example, the PDNP is included in our assessment, something that is missing from the description of the baseline situation in the Case for the Scheme, the Transport Assessment Report and the ES chapters 1-4.</p>
<p><i>CPRE: It's piecemeal development</i></p> <p>2.1.8 The performance of the whole of the Strategic Road Network (SRN) is regularly reviewed by National Highways through periodic refreshment of Route Investment Strategies (RIS). Should future RIS identify a need for further interventions on the A57/A628 corridor to address identified problems, then these would be considered alongside other priorities and competing needs across the SRN.</p> <p>2.1.9. There are other Trans Pennine schemes either being planned or progressed, e.g. Network Rail's Transpennine Route Upgrade (TRU) for the railway between York and Manchester via Leeds and Huddersfield. The A57 Link Road scheme is therefore one of several interventions for improvements to transportation across the Pennines that all form part of a strategic approach to planning for cross-Pennine transportation. The Examination is, however, only concerned with the Scheme which is the subject of the dDCO.</p>	<p>NH's arguments in 2.1.8 and 2.1.9 do not address the point that this scheme is what remains of previous, larger scale proposals; the whole issue of piecemeal implementation disguising real strategic impacts was dealt with as far back as the 1980s and SACTRA. To avoid giving that impression, NH should present its plans for the entire route, in the context of the wider SRN, and present the impacts and how they would be addressed along the entire route.</p>
<p><i>CPRE: Instead of following Government guidance (webTAG at the time) the scope of the trans-Pennine Feasibility Study addressed the symptoms not the problem. The geographical scope of the study interpreted trans-Pennine as 'connectivity between Manchester and</i></p>	

<p><i>Sheffield', with the M62 excluded. National Park statutory purposes and policy were misunderstood and incorrectly applied.</i></p> <p>2.1.10 National Highways fully understands and appreciates the Peak District's statutory purposes and policies. These have been given proper consideration through a thorough review of applicable policies and the Scheme's compliance with them presented in the Case for the Scheme (REP2-016).</p>	<p>The objection from the PDNPA shows NH's interpretation of the statutory purposes and policies does not meet the standard required of its s.62 duty under the Environment Act 1995.</p>
<p><b>CPRE:</b> <i>The webTAG guidance towards generating and sifting options was not followed, and the assessment of the sifted options was not robust</i></p> <p>2.2.11 National Highways is satisfied that the identification of potential interventions to address the identified problems and the sifting of options fully complied with Department of Transport's Transport Analysis Guidance (TAG) as well as National Highways' own internal Project Control Framework (PCF) process that were applicable at the time that the shifting of options was undertaken.</p>	<p>This is dealt with in our responses earlier: the 2015 sift is out of date and the current scheme has not been reassessed against new strategic objectives.</p>
<p><b>CPRE:</b> <i>Car Free Low Carbon Travel for Longdendale and Glossopdale</i></p> <p>2.1.12 Scheme includes signalisation of the M67 roundabout; traffic calming on the de-trunked section of the A57 (that will also provide public realm improvements); and substantial enhancements for pedestrian, cyclists and equestrians. Furthermore, it does not preclude the potential future introduction of the other proposed interventions listed by CPRE outside of the Scheme should it be demonstrated that they provide adequate benefits for users and could be funded.</p>	<p>The increase in road capacity would increase car dependency and undermine GM's policy aims for 50% of journeys by active travel and public transport by 2040, with a 17% reduction in car trips. DfT's decarbonisation plan also seeks 50% of urban trips by active travel by 2030. Our proposed measures are aligned with the GM policies. MTRU has shown the disbenefits and costs this would incur to GM for at least the next 30 years. The key point is that the encouragement of driving in urban areas directly undermines the policies for reducing by switching to walk, cycle and public transport, as set out in the DfT Decarbonisation Strategy and citywide policies such as in TfGM and Sheffield. Also see answer to 2.1.4 above</p>
<p><b>CPRE:</b> <i>4.2.4 Omission of Greater Manchester and Sheffield conurbations from the Study area</i></p>	

<p>2.1.13 see National Highways' responses 3.1 and 3.2 to the Examining Authority's First Written Questions (REP2-021).</p>	<p>The further work and ongoing data received reveals how far the scheme impacts lie in an area which is outside the Area of Detailed Modelling and therefore subject to major interventions to reduce the impact on traffic through masking and the fixed cost function (FCF). The zones and network were revised to give more detail in the immediate area of the scheme. Given its impacts are mainly in Manchester, even with the damping effects of masking and FCF, a similar approach should have been adopted in those areas.</p>
<p><b>CPRE: 4.2.5 Traffic model refinement - The TPU Stage 3 combined modelling and appraisal report indicates that model refinement took place to alter the distribution of traffic within Glossop, and through Tintwistle.</b></p> <p>2.1.14 The traffic modelling used to assess the Scheme is based on a refined and improved version of the Trans Pennine South Regional Model. The zoning covering Glossop within this model was previously treated at an aggregate level that was considered too coarse for adequate assessment of the Scheme. Consequently, the model was refined to ensure that the distribution of modelled trips better reflected the geographical spread of local housing and employment across Glossop by disaggregating the demand into more finely defined zones. The refinement of the traffic model therefore enabled a more accurate assessment to be undertaken of the likely forecast impact of the Scheme on traffic flows, including within Glossop and through Tintwistle.</p>	<p>The NH response essentially supports the comments made above – it's just that such refinement was not made in the western approaches to the scheme.</p>
<p><b>CPRE: 4.2.7 In the context of the above model refinement the traffic forecasting results on the A628T east of Tintwistle and on Glossop High Street appear perverse.</b></p> <p>2.1.15 The traffic modelling used for the assessment of the Scheme has been developed, calibrated, and validated in accordance with the Department for Transport's Transport Analysis Guidance (TAG). Consequently, National Highways are confident that the traffic</p>	<p>See above</p>



<p>modelling accurately forecasts changes in traffic flows due to the Scheme, including on the A628 east of Tintwistle and Glossop High Street.</p>	
<p><i>CPRE: 4.2.10 It appears that refinement of the traffic model could have altered the outcomes for the environmental statement accompanying the DCO application. The assumption that modelled traffic would follow new routes may be unrealistic.</i></p> <p>2.1.16 The environmental statement is based on the traffic modelling undertaken to assess the impact of the Scheme, which as stated above, was refined to provide a higher degree of accuracy within the Area of Detailed Modelling (ADM). Regarding the assumption that modelled traffic would follow new routes may be unrealistic, see National Highways' response to 4.2.7 above.</p>	<p>See above</p>
<p><i>CPRE: No details of these schemes or developments are supplied or appended to the TAR.</i></p> <p>2.1.17 The forecast traffic demand used for the assessment of the Scheme is primarily derived from the Department of Transport's (DfT) National Trip End Model (NTEM). NTEM provides forecast growth in trips based on forecast changes in the economy and demographics by area, e.g. forecast changes in population, car ownership, household spending, levels of employment, etc. NTEM therefore inherently accounts for future development since population growth cannot take place without additional housing development and economic growth cannot take place without additional commercial development. However, NTEM trip origins and destinations are based on relatively large geographical areas (Ward level) and do not therefore reflect the specific locations within each area of future developments that will enable growth. To adjust for this, the matrices of the origins and destinations of forecast trips used in the traffic modelling are adjusted</p>	

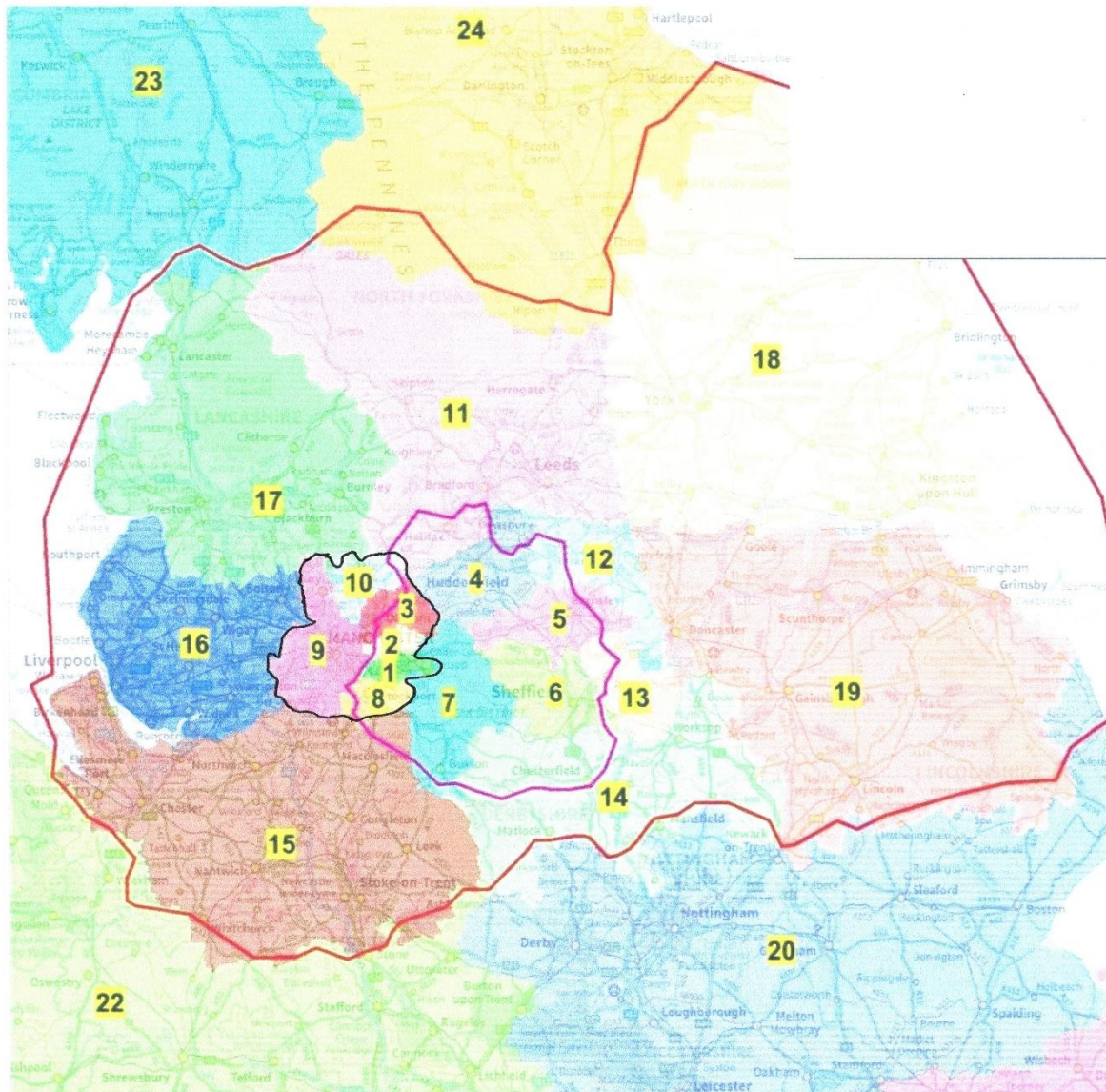
<p>to take account of committed development by refining the start and end points of trips to reflect the specific locations of committed developments using smaller zones. Nonetheless, the overall growth in trips across the assessed road network is capped to the NTEM forecast level of growth.</p> <p>2.1.18. Details of the schemes and developments listed in the Uncertainty Log can be provided by National Highways if necessary.</p>	<p>As offered in 2.1.18, please may we see the complete list, ie the long list and the short list, of schemes and developments excluded and included in the Uncertainty Log.</p>
<p><b>CPRE Comment: 4.2.18 Traffic Forecasts - The prediction of what would happen (the core scenario) without the scheme is based on forecasts from the DfT's National Trip End Model (NTEM). These overstate the general rate of traffic growth.</b></p> <p>The National Trip End Model (NTEM) represents the Department of Transport's centrally agreed position for scheme appraisal as set out in the Transport Analysis Guidance (TAG). National Highways recognises that there is uncertainty with current traffic forecasts. It is for this reason that sensitivity tests of the benefits of the Scheme have been undertaken using both high and low growth traffic forecasts. These sensitivity tests demonstrate that the Scheme is forecast to deliver significant benefits under both the low and high growth scenarios. Also see National Highways' response 3.7 to the Examining Authority's First Written Questions (REP2-021).</p>	<p>Details of these forecasts have not been supplied. They do alter the value for money for this scheme. Further details are in REP4-016</p>
<p><b>CPRE Comment: 4.2.19 Journey times are misleading and inadequate.</b></p> <p>2.1.20 National Highways considers that the journey times presented in the Transport Assessment Report are neither misleading nor inadequate. National Highways believes that CPRE has incorrectly assumed that the economic benefits of the Scheme are focused solely on the changes in journey times along these routes and ignores changes in journey times and induced traffic impacts across the rest of the existing network. In reality, the economic assessment of the Scheme</p>	<p>CPRE did not and does not assume that the times are the basis for the economic appraisal. It is precisely because we did not think they represented the traffic impacts across the network that we asked for the information eventually supplied by NH's consultants.</p> <p>To highlight significant changes in specific journey times, as NH do in the TA, is misleading if these are not reflected in time savings as used</p>

includes the journey time impacts along the entire route of every trip within the Area of Detailed Modelling ADM (e.g. from Manchester to Sheffield). It is only trips which don't pass through the ADM (e.g. Sheffield to Sheffield) that are excluded from the economic assessment, as these are not considered material to the assessment of the Scheme.

for the appraisal. The new analysis of where the benefits actually occur confirms the CPRE view and justifies our data request.

### Supplementary Note on Traffic Benefits

In the D4 submission the information from NH was used to show more precisely where the benefits from the proposed scheme were predicted to occur. The point was made that a majority were in areas where encouraging more driving was counter to national and local policies (basically towns and cities including Greater Manchester and Sheffield). To illustrate this further, we have now considered only those trips which are **entirely within** Greater Manchester. These still provide 55% of the total benefits from the proposed scheme's economic analysis. This is despite the limitations in these areas caused by the Fixed Cost Function and masking. The area we have selected is the closest possible using the 25 sector system and is shown below outlined in black. As well as supporting the point that this is essentially a scheme with urban impacts where they run counter to current policies, the figure below illustrates why more detailed modelling should have been done in that urban area.



*Please note: the area within the inner purple boundary is not the same as the ADM which is smaller. The ADM map could not be used because it is not large enough to show the zones. This is the map supplied by NH in the Combined Modelling and Economic report submitted in response to the CPRE request.*

EFFECTS OF GREENHOUSE GAS (GHG) EMISSIONS	
National Highways Comments	CPRE PDSY Rebuttal
3.3.5 The applicant was unable to locate the document referenced in the Written Representation (due to redactions), and therefore cannot comment on this methodology. However, it is understood that the Barrett formula is not consistent with National Highways carbon tool as it uses a different reporting mechanism for GHG emissions.	We have included the Barratt formula at the very end of this document for the NH to comment.
3.6.2 The DfT have advised National Highways that a sensitivity test based on the impact of the policy measures set out in Transport Decarbonisation Plan (TDP) (July 2021) can now be undertaken for schemes. The results of this test along with the updated GH emissions based on EFTv11 has yet to be presented.	We will comment once the results are presented. It will be critical that we (and other IPs) understand what is being proposed and that all the equivalent information to that requested by us is made available in good time so that we can subject it to the appropriate level of scrutiny and produce a proper response. This would include the matrices for traffic, cost changes and public transport. To be compatible with the DfT reduction to net zero, a full walking and cycling matrix would have to be included. This is because the reduction depends on a major increase in use of these modes through switching from car use and to a lesser extent to rail freight. If the carbon outputs and economics change substantially (which is highly likely) that would mean all the documents submitted at the beginning of the DCO process would be out of date. We would ask for an immediate dialogue with NH on this if they are proceeding with such re-modelling and sufficient time to take into account for what would have to be a revised submission.
3.8.2 The Applicant would note that the method used for the calculations within 4.4.23(a) (page 46) of the Written Representation is not clear, and therefore cannot comment.	The UK's Nationally Determined Contribution (NDC) commits the UK to reducing economy-wide GHG by at least 68% from the 1990 baseline by 2030. As we expect the transport sector to play its full share in reducing emissions we wanted to show by how much the emissions from the scheme would need to reduce if they too played their full share. Transport emissions in 2019 were 4.6% lower than in 1990. Therefore from 2020 a 63.4% decrease in transport carbon emissions is required to achieve the NDC by 2030. However we did not have the carbon

	<p>emissions for the DM scenario of the scheme. We used the difference between the carbon emissions in DM in 2025 and DM in 2040 to estimate the annual increments in carbon emissions. We then used the annual increments to work back from the carbon emissions in 2025 to 2019, which gave us an estimate of the scheme’s emissions in 2020 - 723,156tCO<sub>2</sub>. A 63.4% by 2030 of 723,156tCO<sub>2</sub> would require a reduction in emissions of <b>458,481tCO<sub>2</sub></b>. Instead with the scheme they <b>increase to 756,232tCO<sub>2</sub></b>.</p>																
<p>3.9.4b) 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. NH quotes <b><i>R(Transport Action Network) v Secretary of State for Transport</i></b> [2021] EWHC 2095 (Admin) (“the TAN case”)</p>	<p>This is incorrect. Government has identified sectoral targets for transport.          The <u>DfT Decarbonisation Plan</u> assigns savings to be made by each mode with a total saving of between 1,307MtCO<sub>2</sub> and 1,797MtCO<sub>2</sub>.</p> <table border="1" data-bbox="1243 683 1921 1145"> <thead> <tr> <th>Mode</th> <th>Savings MtCO<sub>2</sub>e between 2020 and 2050</th> </tr> </thead> <tbody> <tr> <td>Increasing walking and cycling</td> <td>1-6</td> </tr> <tr> <td>Zero buses and coaches</td> <td>35-37</td> </tr> <tr> <td>Decarbonising rail</td> <td>21-22</td> </tr> <tr> <td>Zero emissions fleet cars &amp; vans</td> <td>620-850</td> </tr> <tr> <td>Maritime decarbonisation</td> <td>180-230</td> </tr> <tr> <td>Aviation</td> <td>250-430</td> </tr> <tr> <td>Zero emissions freight</td> <td>200-220</td> </tr> </tbody> </table> <p>The <u>UK’s Net Zero Strategy Nov 2021</u> (which was published after the decision on the TAN case), page 154, sets targets for each sector including transport. ‘Based on our whole system modelling, by 2050, total transport emissions, including international aviation and shipping, could need to drop by 76-86% compared to 2019, down to 23-</p>	Mode	Savings MtCO <sub>2</sub> e between 2020 and 2050	Increasing walking and cycling	1-6	Zero buses and coaches	35-37	Decarbonising rail	21-22	Zero emissions fleet cars & vans	620-850	Maritime decarbonisation	180-230	Aviation	250-430	Zero emissions freight	200-220
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	<p>40MtCO<sub>2</sub>e. In the interim, to meet our NDC and CB6 targets, we expect they could fall by 22-33% by 2030 and 46-59% by 2035, compared to 2019 levels. These figures are based on an indicative transport sector pathway contributing to the whole-economy net zero and interim targets. Our potential pathway also indicates residual emissions from domestic transport could need to fall by around 34-45% by 2030 and 65-76% by 2035, relative to 2019 levels (see figure 21). We anticipate that international aviation and shipping emissions could need to fall by up to 12% by 2035, relative to 2019 levels (see figure 22)'. </p>
<b>GREEN BELT</b>	
<b>National Highways comments</b>	<b>CPRE PDSY rebuttal</b>
<p><b>4.1. National Highways' response to Section</b> 4.1.1. NPPF paragraph 150 (previously 146) sets out development that is appropriate in the Green Belt provided they preserve its openness and do not conflict with the purposes of including land within it, which includes local transport infrastructure which can demonstrate a requirement for a Green Belt location. 4.1.2. CPRE argues that two recent DCO schemes (the A19/A184 Testo's junction and the A19/A184 Testo's junction require a Green Belt location because they are upgrades of existing roads, which is something that does not apply to the Scheme. The need for a Green Belt location cannot simply be limited to upgrades of existing roads within the Green Belt (and what is now paragraph 150c of the NPPF does not set such a restriction). This is reflected in NN NPS paragraph 5.171 which recognises that "linear infrastructure linking an area near a Green Belt with other locations will often have to pass through Green Belt land."</p>	<p>The question whether development is appropriate or inappropriate is answered by reference to paras 149 and 150 of the NPPF. For present purposes, there is an important distinction here:</p> <p>(a) Some forms of development, such as buildings for agriculture and forestry, are automatically appropriate, irrespective of whether they might have an impact on openness. In such cases, the fact that there would be an impact on openness does not make that development 'inappropriate' and therefore subject to very special circumstances, nor is the impact on openness a legitimate objection to them – by decreeing them appropriate even though they will inevitably affect openness, the NPPF implicitly accepts that impact.</p> <p>(b) Some forms of development <u>can be</u> appropriate, subject to provisos on e.g. size which are not related to impact on openness – e.g. 149(c) (extension or alteration which does not result in a disproportionate addition), 149(d) replacement of a building with another which is not materially larger; 149(e) 'limited' infilling. In all of these cases, there will almost invariably be <u>some</u> impact on openness, but once again this</p>

4.1.3. The justification for why the Scheme is local transport infrastructure that requires a Green Belt location is set out in the Case for the Scheme.

4.1.4. The Tameside UDP is still the main document which is used to determine planning applications for development in the borough and its policies are still in force, including policies T2 and T3.

cannot render the proposal 'inappropriate' or affect the need to demonstrate VSC.

(c) Other forms of development can only be 'appropriate' if they preserve the openness of the Green Belt and do not conflict with the purposes of including land within it. In such cases, impact on openness is an integral part of the decision whether the proposal is inappropriate, and so fundamental to the question whether it is necessary to demonstrate very special circumstances.

A road scheme which qualifies as local transport infrastructure falls into category (c) above – see para 150(c) – provided it can demonstrate a requirement for a GB location. As there is an obvious adverse impact on openness and on the purposes of Green Belt then it cannot be appropriate development, and should only be allowed if there are very special circumstances. If it does not impact on openness or purposes, then it could be appropriate – but in that situation, there would be no room for an argument that, even though it was appropriate, it harmed openness and four functions of the GB.

There is nothing in the NPPF or the NPSNN which suggests that a development plan policy safeguarding a route for local transport infrastructure overrides para 150(c) or renders the development 'appropriate' and thus removes the need to demonstrate very special circumstances. The most that could be said is that the local plan policy is evidence of the importance of the new road, which may be important in demonstrating that very special circumstances exist (see e.g. NPSNN para 5.171). However, that judgment (the balancing exercise which lies at the heart of very special circumstances) is one which has to be made at the time of the decision to grant permission, not at the time the plan was adopted. In the interim, many things may have changed – the need for the road, the extent to which the surrounding area has become built



	<p>up, the ecological or other importance of the site. All of those things have to be factored in.</p> <p>The scale, extent of the proposed scheme and its inevitable built paraphernalia clearly impacts adversely on 'openness' severing the open landscape with major engineering of the landform, the presence of the built road and signage, lighting and high volumes of vehicles on it, all of which will destroy openness.</p> <p>NH is consistently and erroneously using the term local transport infrastructure to apply to the whole scheme. DCC incorrectly drops the term 'local' from its endorsement of the scheme being appropriate development (REP4-010). The dual carriageway would become part of the Strategic Road Network and is a national significant infrastructure project. It is not local transport infrastructure. The two legal cases are applicable to the dual carriageway part of the scheme as that is clearly an NSIP to which NPPF para 150 makes no reference. NPPF para 150c recognises '<i>local transport infrastructure which can demonstrate a requirement for a Green Belt location</i>'; the single carriageway section could be considered to meet that definition but, as we have explained above, does not fulfil the policy requirements.</p> <p>The Case for the Scheme makes no justification for the scheme being local transport infrastructure. It claims that the Scheme '<i>does not constitute inappropriate development as:</i></p> <ul style="list-style-type: none"><li>• <i>It is a regional/local transport development, of approximately two miles, that cannot avoid a Green Belt location</i>'.</li></ul> <p>The dual carriageway section of the scheme is neither regional nor local transport infrastructure. It would be part of the Strategic Road Network and is a Nationally Significant Infrastructure Project (NSIP). NPSNN 5.178 identifies that '<i>when located in the Green Belt national networks infrastructure projects may comprise inappropriate development</i>'.</p>
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	<p>Turning now to the question of the legitimacy of the TMBC UDP. This is not a question of law, but one of fact-sensitive judgment, where the answer will vary depending on the particular case. While it is true that the older an existing plan is, the easier it may be to draw the inference that it is out of date, there is no presumption that a policy becomes out of date simply because a development plan is long in the tooth or has not been reviewed within the promised period. In the case of a safeguarding policy, unless and until it becomes clear that a proposal has been abandoned/is highly unlikely to be delivered/has been delivered in a different way which no longer requires the safeguarded land, a safeguarding policy is still something to which weight can be attached. This is not necessarily a binary issue – between full weight and no weight there is a spectrum, and the ultimate decision may lie somewhere between the two. As we have suggested above many things have changed since 2004 and consequently the safeguarding policy carries little weight, as follows.</p> <ul style="list-style-type: none"><li>a) The TMBC UDP was adopted before the legal duty on local authorities to include policies on climate change mitigation and adaptation in Development Plan documents came into effect. It therefore predates the requirement of s.182 of the Planning Act 2008 Planning. <i>‘Development plan documents must (taken as a whole) include policies designed to secure that the development and use of land in the local planning authority’s area contribute to the mitigation of, and adaptation to, climate change’</i>. As a consequence it fails to meet a number of NPPF policies with respect to climate change mitigation and adaptation.</li><li>b) In 2008 the Climate Change Act (amended 2019) set a target for reduction of GHG emissions to Net Zero.</li><li>c) A climate emergency has been declared by national government and regional and local authorities.</li></ul>
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	<p>d) The imperative of addressing climate change requires a reduction in vehicle kilometres not an increase in road capacity for more vehicle kilometres (Climate Change Committee UK 6<sup>th</sup> Carbon Budget).</p> <p>e) Climate change and the increasing frequency of severe weather incidents requires avoidance of flood risk sites, such the River Etherow flood plain.</p> <p>f) The need for the road can be met in other ways as our alternatives demonstrate.</p> <p>g) There is an ecological crisis which means policies must be strengthened to safeguard nature, not as required by the Environment Act 2022.</p> <p>h) Physical inactivity leading to obesity and premature death has emphasised the importance of active travel, reducing car dependency and improving access to local green space, all which this scheme would work against.</p> <p>When all these are factored in, the UDP safeguarding policy carries little weight.</p>
<p><b>4.2. National Highways’ response to Section 4.6 ‘The Scheme Conflicts with the Purposes of the Green</b></p> <p>4.2.1. The Applicant has set out in the Case for the Scheme (REP2-016) why it considers the Scheme does not conflict with the purposes of the Green Belt.</p> <p>4.2.2. With regards to NPPF para 138 part a) ‘checking the unrestricted sprawl of large built-up areas’ and b) ‘preventing neighbouring towns merging into one another’, National highways would highlight that pressure for developing land in the Green Belt on the edge of existing settlements exists regardless of the Scheme and revisions to the Green Belt to release land for development can only take place through the Local Plan process; previously proposed allocations or site submissions by private landowners as part of this process are not relevant to the</p>	<p>A major road scheme WILL create a new logical boundary to the urban areas. The pockets severed from open countryside and adjacent the built up area will no longer be easily defensible from development.</p> <p>Contingent on NH’s proposed development Savills, on behalf of Crossways Commercial Estates, are proposing a new sustainable urban extension (SUE) of 600-700 houses. The SUE would extend Hollingworth into a 27ha triangle of Green Belt between Woolley Lane, Mottram Moor and the proposed single carriageway to Glossop. Savills is requesting adjustments to the River Etherow crossing to enhance its proposed Sue and that the SUE is considered as part of the DCO application. This is strong evidence that the scheme would impair the first two functions of the Green Belt as listed in NPPF – checking unrestricted sprawl and preventing neighbouring towns merging.</p>

<p>consideration of the Scheme and there are no allocations in the emerging <i>Places for Everyone Plan</i>.</p> <p>4.2.3. Policy OL3 of the Tameside UDP is not a general policy authorising infill but relates to minor expansions of certain specific named existing sites within the Green Belt, none of which are within the boundary of the DCO. The nearest, Longdendale Community High School lies to the north-east of the Scheme. Notwithstanding the status of OL3, the NPPF (paragraph 149) sets out that limited infilling or the partial or complete redevelopment of previously developed land can be appropriate development in the Green Belt. The NPPF allows for infilling in certain circumstances with or without the Scheme. Likewise, as quoted by the CPRE (page 63), there will be pressure for residential development due to Mottram being an attractive place to live, not as a result of the construction of the Scheme.</p>	<p>[We note that in REP3-020 although NH refused the adjustments to the River Etherow bridge it did not comment on consideration of the SUE as part of the DCO.]</p> <p>NPPF 2021, para 149 states <i>A local planning authority should regard the construction of new buildings as inappropriate in the Green Belt.</i> Exceptions to this include limited infilling in villages; and limited infilling or the partial or complete redevelopment of previously developed land. Without the scheme there would be no pockets for ‘limited infilling’, therefore the scheme harms the function of the Green Belt in this location.</p>
<p>4.2.4. With regards to page 63 part c) In addition to comments on encroachment within the Case for the Scheme, according to the Local authority green belt statistics for England: 2020 to 20213 Tameside possesses over 5,000 hectares of land designated as Green Belt whilst High Peak has nearly 4,000. As the CRPE themselves agree in their deadline 3 submission in terms of total Green Belt area, the Scheme area is small. The impact of the Scheme on habitats, wildlife and flood risk is covered elsewhere within the relevant chapters of the submitted Environmental Statement.</p>	<p>The actual size of the scheme and the area of Green Belt land take is not the issue. The scheme must be tested against the Green Belt policies in NPSNN 2014 and NPPF 2021.</p>
<p>4.2.5. With regards to page 64 part d) The Scheme’s impact on the setting of the Conservation Area has been properly considered within Chapter 6 of the ES: Cultural Heritage</p>	<p>The impact of the scheme on the Conservation Area may have been ‘properly considered’ but that does not alter the result - the adverse effect. NH is only partly correct to state that <i>‘The value of the conservation area derives from its architectural and historic interest as a</i></p>

<p>4.2.6. With regards to page 65 part e) There is not a requirement to demonstrate how the Scheme would assist in urban regeneration. We set out how the Scheme does not conflict with this purpose in the Case for the Scheme.</p>	<p><i>settlement preserving evidence of development from the medieval period to the post-medieval period.’ The landscape setting is also of value – the inclusion of the rough pasture to the east of the village is an integral part of the setting of the village. As NH notes in ES Ch. 6, 6.7.29-6.7.32 ‘The setting of Mottram-in-Longendale Conservation Area (HA2) and its relationship to the surrounding landscape at the edge of the Pennines would be permanently altered by the presence and operation of the Scheme. The A57 Link Road and Mottram Back Moor Junction would form a new feature within the setting of the conservation area to the north-east which, together with the lighting of the Link Road, would diminish the open, agricultural character of the conservation area’s setting in this area.’</i></p> <p>The scheme would form an intrusive feature in mid-range views from the Conservation Area. As one would be looking downhill to the west of the scheme the visual impact from here would not, as NH claims, be reduced by the presence of a false cutting on the south side of the proposed development and woodland planting - there is no planting that would mature and screen the dual carriageway as it approaches Mottram Moor or the new Mottram Moor junction. The Pennine Hills are but one element of the setting of the Conservation Area; the green open space of the east of it that the scheme would destroy as also integral to it. Views From Mottram Moor into the Conservation Area and in particular towards St Michael and All Angel’s Church, currently screened by roadside vegetation, would be abruptly interrupted by the huge Mottram Moor Junction. To the north west of the Conservation Area the dual carriageway would intrude on long views from the area of Edge Lane towards the church tower, diminishing its landmark role in these views. Therefore the scheme does not preserve the setting and special character of the historic town Mottram.</p>
<p><b>4.3. National Highways’ response to Section 4.6 ‘The Scheme Harms the Openness of the Green Belt’</b></p>	

<p>4.3.1. Green belt is not a visual or landscape designation and does not imply any particular visual or landscape quality requirement. The key to Green Belt is its openness and preventing urban sprawl.</p> <p>4.3.2. The openness of the greenbelt (or any land) is not directly related to the height of a feature or element within or across it. For example, Uluru (Ayer's Rock) does not necessarily affect openness and indeed, can enhance the perceptual experience of openness.</p> <p>4.3.3. The elements of the landscape design comprise principally of landform and planting which have been carefully designed to ensure that the scheme is both screened from sensitive receptors and integrated into the local landscape character with both open and enclosed sections. This will deliver a blend of screened highway and more open views. The landform enclosing the road is largely as a false cutting and this combined with the undulating nature of the wider landscape, means views of the route will be limited and also seen within the context of a wider landscape setting of rising hills and moorland slopes. The design is a combination of various influences - visibility, landscape character biodiversity and habitat creation as well as drainage considerations</p> <p>4.3.4. In summary it is considered that the openness of the green belt is not compromised by the addition of the Scheme.</p>	<p>NH fundamentally misunderstand the meaning of openness in planning case law in their Uluru comparison. What they say is nonsense. Uluru is a natural open feature in its own right, and as part of its surrounding countryside. It is part of the 'openness' just as the Peaks of the Peak District are. Openness includes features which block views. A new major modern road construction is neither open nor a natural feature. It may be possible to mitigate a little of its impact by careful design and landscape but unless it was put underground openness will be clearly harmed.</p>
<p><b>4.4 National Highways' response to Section 4.6 'Very special circumstances' do not exist to outweigh the harm'</b></p> <p>4.4.1. National Highways disagrees and consider that, should the Scheme be considered inappropriate development, there are very special circumstances that outweigh the harm in line with paragraph 148 of the NPPF. Furthermore, we consider that harm has been appropriately assessed as set out in our response to the Examining Authority's First Written Question 4.2 (REP2-021).</p>	<p>We have responded to NH's answer to the Examiner's First Written Questions 4.2 in REP3-031 p13. In its answer NH argues that as the scheme is not inappropriate development it <i>'is not burdened by the presumption against inappropriate development and need not demonstrate very special circumstances nor engage in a weighing exercise of harm against such circumstances and any other considerations in favour of granting permission...</i></p>

	<p>The single carriageway could be considered ‘not inappropriate’ in the Green Belt, as it is local transport infrastructure. However NPPF para 150 is clear that development that is not inappropriate has to preserve the openness of the Green Belt and not conflict with the purposes of the Green Belt. The single carriageway, like the dual carriageway, does not preserve openness, and conflicts with four of the five purposes, of the Green Belt. It is therefore inappropriate development and therefore very special circumstances apply.</p>
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AIR QUALITY	
5.2.1-5.2.5 Omission of AQMAs	<p>We remain unconvinced by NH’s arguments. The extraordinary traffic flows modelled through both of Glossopdale’s AQMAs continues to be unexplained. It is these modelled changes in traffic that have led to NH concluding that the AQMAs do not need to be assessed. HPBC is also seeking further information for the rationale of the diversion onto Shaw Lane and Dinting Road in order to avoid the Dinting Vale AQMA (REP4-011). Therefore until these forecast anomalies are explained we remain unconvinced. HPBC elaborates on its reasons for concerns about modelling and methodology in REP4-011. We will respond when we have seen NH’s response to these.</p>
5.2.7-5.2.10 Omission of particulate matter	<p>We maintain that the air quality assessment should take a precautionary approach and use the lower levels of exceedances of pollutants that are now being used by GMCA and WHO. There are no safe limits for PMs.</p>
5.2.11-5.2.12 no recognition of local and regional targets	<p>The EIA regs require assessment against regional and local targets.</p>
5.2.13 Effects on air quality in 2040 omitted	<p>In 2007 the Highways Agency (now NH) forecast that by 2015 with or without the Mottram-Hollingworth-Tintwistle Bypass there would be no exceedances of NO2. Yet here we are in 2022 with severe exceedances persisting, because the forecast was wrong. The assumption that vehicle technology would solve air pollution has proved to be hollow.</p>

	<p>The same may apply to today's assumptions – EVs may not solve air pollution or may be so delayed in their uptake that air pollution impacts continue</p>
<p>Air Quality Directive</p>	<p>We have read NH's response to the ExA's questions on Tintwistle AQMA (ee) and ff). <i>'Where there is an overlap between the ARN and the PCM model just to the west of New Road the compliance risk assessment modelling results (e.g. receptors QF917 and QF920, which are the closest included in the modelling to Tintwistle) indicate that while there is a worsening with the Scheme, under the Defra LAQM.TG(16) method there would not be an exceedance of an AQS objective/Limit Value and as such there would not be a non-compliance with the Air Quality Directive. This is for a location within the ARN where the traffic DMRB LA 105 traffic change criteria are exceeded, so by extension for Tintwistle which is not within the ARN there would also not be a non-compliance with the Air Quality Directive.'</i> However the AADT for DM/DS west of New Road ie in Hollingworth are 15,950 and 15,900 respectively. Therefore this section of the road does not meet the traffic change criteria of 1,000 AADT, and this is not a convincing argument. The Tintwistle AQMA must be assessed.</p>

LANDSCAPE	
National Highways comments	CPRE PDSY Rebuttal
<p>Landscape effects            6.2.3 With reference to the Greater Manchester Landscape Character and Sensitivity Assessment that accompanies the <i>Places for Everyone Joint Plan</i>, the Applicant has used landscape character assessments that are appropriate in the LVIA produced. The CPRE has used an alternative character assessment which they describe as 'substantially the same but with subtle differences'. Additionally, this document was not raised</p>	<p>Tameside MBC in response to the ExA FWQs regarding omissions of policy documents proposes the use of The Greater Manchester Landscape Character and Sensitivity Assessment (GMLCSA) that accompanies Places for Everyone. Places for Everyone Joint Development Plan Document is a material consideration for the Examination as it has been submitted to the Secretary of State for examination on 14 February 2022.</p>



by the consultees during the consultation period, when establishing the methodology.

GMLCSA is a material consideration for the Examination as it is the most recent assessment (2018) and postdates all other assessments – the PDNPA dates from 2009 and HPBC/DCC dates from 2003 revised 2013. Tameside MBC does not have a Landscape Character Assessment, therefore the GMLCSA provides the relevant perspective and should be used as the most up-to-date baseline to consider the effects of the scheme.

NH has quoted us out of context and appears to have misunderstood what we have done. Our REP2-069 para 4.7.2 states *'The scheme lies within two coincident landscape character areas (a) National Character Area Profile (NCA) 54 Manchester Pennine Fringe, the transitional zone between the open moorlands of the Dark Peak and Southern Pennines, and the densely populated conurbation of Manchester; (b) the Dark Peak Western Fringe (DPWF) Landscape Character Area (LCA) as defined by the PDNPA. NH has divided these two landscape character areas into scheme level LCAs (SLLCA) and townscape character areas (SLTCA). We will also refer to the Greater Manchester Landscape Character and Sensitivity Assessment that accompanies the Places for Everyone Joint Plan228 (August 2018) that NH has ignored. Assessment using all these LCAs and LCT is **substantially the same but with some subtle differences** which will become apparent.* Para 4.7.4 goes on to say 'NH has used Landscape Designations and Landscape Character Types (Table 7.28) as landscape receptors, which is acceptable for overall character but does not address the effects on individual elements, or features, or specific aesthetic or perceptual effects. To address this omission we have spelt out important individual elements. ' Finally the Table on p76 then showed how we had assessed the impacts of the scheme within the same framework as NH but came to different conclusions.

	<p>It is clear that we have used the same GLVIA 3 methodology as NH and the same LCA and LCTs but also included the GMLCSA. The latter makes a more robust defence of the landscape and for its future enhancement to the earlier assessments. It is to that that our <b>substantially the same but with some subtle differences</b> refers. GLVIA requires baseline studies of landscape to identify and describe the elements that make up the landscape, the aesthetic and perceptual aspect of the landscape and the overall character of the landscape in the study area. Our assessment attempts to supply the important detail missing from NH's assessment as presented. The PDNPA has expressed the same concern about using LCAs as landscape receptors.</p>
<p>In reference to not addressing the effects on individual elements, or features, or specific aesthetic or perceptual effects, Tables 7.26 and 7.27 list the key characteristics and refer to the landscape elements and features, and perceptual qualities where applicable, in discerning the magnitude of change. In addition, landscape elements and features are considered throughout ES Chapter 7: Landscape and Visual Effects (REP2-007) as follows:</p> <p>Paragraph 7.3.7: Elements and features which are key contributors to landscape character such as woodlands, distinctive individual trees, rural lanes, watercourses, and the overall landscape area.</p> <ul style="list-style-type: none"> <li>• Paragraph 7.3.9: The assessment of landscape effects including the change or removal of key existing landscape features e.g. prominent existing individual mature trees or change to a watercourse.</li> <li>• Paragraph 7.6.4: Landscape Baseline identifies individual landscape receptors including designations, landscape character, land use, elements and features, and settlement and built elements. Elements and features are generally limited to those within the Draft Order Limits.</li> </ul>	<p>In Tables 7.26 and Table 7.27 NH has listed the key characteristics of relevant NCA, LCAs and LCTs and then assessed the magnitude of the impact of the scheme on these. That has been done without identifying the specific key elements of that particular landscape or presenting their individual importance. The description repeats the key characteristic from the list and could be used as a template for a development anywhere within these LCAs and LCTs. We made it clear in REP2-069 that we believed NH's assessment was suitable for assessment at the level of landscape character but was inadequate to capture the impacts on individual features and elements. GLVIA requires baseline studies of landscape to identify and describe the elements that make up the landscape, the aesthetic and perceptual aspect of the landscape and the overall character of the landscape in the study area. Our assessment attempts to supply the important detail missing from NH's assessment as presented.</p> <ul style="list-style-type: none"> <li>• 7.3.7 is not addressing specific landscape features.</li> <li>• 3.3.9 is a description of the methodology not of the features.</li> <li>• 7.6.4 refers to elements non-specifically.</li> </ul>

<ul style="list-style-type: none"> <li>• Paragraphs 7.6.11 and 7.6.12 refers to detailed tree surveys undertaken. Paragraph 7.6.13 to Ancient Woodland which is all outside the DCO limits.</li> <li>• Paragraphs 7.6.14 discusses field boundaries. Paragraph 7.6.21 considers Melandra Castle.</li> </ul>	<ul style="list-style-type: none"> <li>• 7.6.11-7-6.12 refers to trees woodlands and ancient woodlands and refers to the Arboricultural Impact Assessment Report 7.3. The latter is a thorough ecological assessment of individual trees but their importance and significance in the landscape is not addressed.</li> </ul>
<p>Landscape effects</p> <p>6.2.11 The Applicant notes that a separate methodology is relied upon for the CPRE assessment, as per 4.7.7 through to 4.7.27 (REP2-069) (pages 72-78), of the Written Representation and this is not clear (in terms of its relevance and basis), and therefore cannot be commented on.</p> <p>6.2.12. As per ES Chapter 7, Para 7.3.3 ‘A detailed landscape and visual assessment has been undertaken following the requirements of the DMRB LA 107 standard. The assessment is also informed by guidance set out in GLVIA3 and GLVIA3 Statements of Clarification.’</p> <p>6.2.13. Additionally, as per para 7.3.5 ‘The assessment was undertaken by two chartered Landscape Architects (LA’s) experienced in LVIA and their professional judgement was used in line with GLVIA3.’</p>	<p>NH has quoted us out of context and appears to have misunderstood what we have done. Our REP2-069 para 4.7.2 states</p> <p><i>‘The scheme lies within two coincident landscape character areas (a) National Character Area Profile (NCA) 54 Manchester Pennine Fringe, the transitional zone between the open moorlands of the Dark Peak and Southern Pennines, and the densely populated conurbation of Manchester; (b) the Dark Peak Western Fringe (DPWF) Landscape Character Area (LCA) as defined by the PDNPA. NH has divided these two landscape character areas into scheme level LCAs (SLLCA) and townscape character areas (SLTCA). We will also refer to the Greater Manchester Landscape Character and Sensitivity Assessment that accompanies the Places for Everyone Joint Plan228 (August 2018) that NH has ignored. Assessment using all these LCAs and LCT is <b>substantially the same but with some subtle differences</b> which will become apparent.</i></p> <p>Para 4.7.4 goes on to say ‘NH has used Landscape Designations and Landscape Character Types (Table 7.28) as landscape receptors, which is acceptable for overall character but does not address the effects on individual elements, or features, or specific aesthetic or perceptual effects. To address this omission we have spelt out important individual elements.’</p> <p>Finally the Table on p76 of REP2-069 then showed how we had assessed the impacts of the scheme within the same framework as NH but came to different conclusions.</p>

	<p>It is clear that we have used the same GLVIA 3 methodology as NH and the same LCA and LCTs but also included the GMLCSA. The latter makes a more robust defence of the landscape and for its future enhancement than earlier assessments of LCAs and LCTs. It is to that that our <b><i>'substantially the same but with some subtle differences'</i></b> refers. GLVIA requires baseline studies of landscape to identify and describe the elements that make up the landscape, the aesthetic and perceptual aspect of the landscape and the overall character of the landscape in the study area. Our assessment attempts to supply the important detail missing from NH's assessment as presented. The PDNPA has expressed the same concern about using LCAs as landscape receptors.</p>
<p>Townscape effects</p> <p>The Applicant notes that a separate methodology is relied upon for the CPRE Townscape assessment, as per 4.7.28 through to 4.7.47 (REP2-069) (pages 79-82), of the Written Representation and this is not clear (in terms of its relevance and basis) , and therefore cannot be commented on.</p> <p>6.2.15. As per ES Chapter 7: Landscape and Visual Effects, Paragraph 7.3.3 of the Environmental Statement 'A detailed landscape and visual assessment has been undertaken following the requirements of DMRB LA 107 standard. The assessment is also informed by guidance set out in GLVIA3 and GLVIA3 Statements of Clarification.'</p> <p>6.2.16. Additionally, as per ES Chapter 7: Landscape and Visual Effects, Paragraph 7.3.3 of the Environmental Statement per para 7.3.5' 'The assessment was undertaken by two chartered Landscape Architects (LA's) experienced in LVIA and their professional judgement was used in line with GLVIA3.'</p>	<p>As above - CPRE followed the GLVIA3</p>
<p>Visual Effect</p> <p>6.2.17 The Applicant notes that a separate methodology is relied upon for the CPRE visual assessment, as per 4.7.48 through to 4.7.50 (REP2-</p>	<p>As above CPRE followed the guidance set out in GLVIA3. In our view NH's assessment did not fully capture or describe, and underplayed, the visual effects of the scheme.</p>

<p>069) (page 82), of the Written Representation and this is not clear (in terms of relevance and basis), and therefore cannot be commented on.</p> <p>6.2.18. As per ES Chapter 7: Landscape and Visual Effects paragraph 7.3.3 'A detailed landscape and visual assessment has been undertaken following the requirements of DMRB LA 107 standard. The assessment is also informed by guidance set out in GLVIA3 and GLVIA3 Statements of Clarification.'</p> <p>6.2.19. Additionally and as per ES Chapter 7: Landscape and Visual Effects Paragraph, Paragraph. 7.3.5: 'The assessment was undertaken by two chartered Landscape Architects (LA's) experienced in LVIA and their professional judgement was used in line with GLVIA3.'</p>	
<b>EFFECTS ON PEAK DISTRICT NATIONAL PARK</b>	
<b>National Highways Comments</b>	<b>CPRE PDSY Rebuttal</b>
<p>Increased Noise and reduced tranquillity</p> <p>4.8.19: Paragraphs 11.3.34 and 11.3.35 of the Noise chapter of the ES (REP1-017, REP3-007) provide details on how roads from the traffic model are selected for inclusion in the operation phase road traffic noise assessment. A map showing the locations of the roads within the study area of the Scheme is provided in Figure 11.5 (APP-134), which includes the A57 and A628. Traffic data from other roads located within the Peak District National Park were analysed for inclusion in the assessment, however, they did not meet the DMRB LA 111 requirements for inclusion in the study area as there were not predicted to change by 1 dB or more. Changes of less than 1dB are classified as negligible in the DMRB and would not be perceptible.</p> <p>7.2.2. 4.8.20: Paragraph 11.9.97 of the Noise chapter of the ES (REP1-017, REP3-007) states that minor increases were predicted on the A57 (Sheffield Road, Woodcock Road, Snake Pass and Snake Road) in the short-term and would be perceptible, and that negligible impacts would occur in the long-term. The impact magnitudes stated are based on the DMRB LA 111 assessment criteria reproduced in Table 11.9 of the ES.</p>	<p>We have responded to NH's approach towards tranquillity and dark skies in our submission for Deadline 4 REP4-016.</p>

<p>This would result in a significant adverse effect to 44 dwellings in Glossop (Sheffield Road and Woodcock Road) due to existing noise levels exceeding the significant observed adverse effect level. No significant effects would occur to footpath users at Snake Road/Snake Pass, although the noise changes at sections of footpath close to these roads would be perceptible.</p> <p>7.2.3. The italicised text “The impact would be limited to within approximately 10 m of the road” was identified as errata and has been removed from reissued versions of the Noise chapters (REP1-017, REP3-007).</p>	
<p><b>Wildlife Impacts</b></p> <p>Operational impacts upon biodiversity, which have been highlighted by CPRE (such as lighting, noise, and roadkill) have been assessed within Chapter 8 of the ES with mitigation measures provided as required. For example, closed-border fencing, acoustic fencing and badger proof fencing has been provided across the majority of the Scheme adjacent to the highway which will prevent ground-based terrestrial mammal species such as deer, badgers, and hedgehog from entering the road, and thus, reducing roadkill and providing noise screening. Furthermore, the lighting scheme has been specifically designed to avoid sensitive ecological features (such as the River Etherow). The recommendations from the Bat Conservation Trust and the Institution of Lighting Professionals, titled ‘Guidance Note 8 Bats and Artificial Lighting’ have been followed when designing the lighting proposals. Vegetation screen planting (including woodland and hedgerow) has been used to provide dark corridors and improved habitat links and quality. Taking these measures into consideration, alongside the net gain in habitats (such as woodland and hedgerow) as a result of the Scheme, it is considered that appropriate measures can be delivered.</p>	<p>NH has entirely avoided the issue of indirect impacts outside the scheme boundary, which was the point we were making on page 93 of REP2-069. The PDNPA has drawn further attention to the impact on the assemblage of breeding birds on the moors and the issue of roadkill of mountain hares REP4-012. REP4-026 para 6 has drawn attention to lapwing breeding grounds in the fields adjacent to the B6105 near its junction with Padfield Main Road. The impacts of the scheme’s traffic increases on these species has not been given due attention and we support the PNDPA’s and the Peter Simon’s concerns.</p> <p>The Peak District contains the only mountain hares in Britain outside Scotland and the Isle of Man. Whilst not on the endangered list, their numbers are in the low thousands, and they are a distinctive animal with which the Peak District is identified. Traffic on the A57 Snake Pass probably claims 20% of the adult hares living in the squares adjacent to the road (Derek Yalden, Mountain Hares, Derbyshire Mammal Group News, Spring 2004, Issue 3 page 3). Traffic increases on both the Snake Pass and A628 would further increase the risk of their roadkill.</p>

<p><b>Impacts on Landscape</b></p> <p>As per Para 7.3.3 ‘A detailed landscape and visual assessment has been undertaken following the requirements of DMRB LA 107 standard. The assessment is also informed by guidance set out in GLVIA3 and GLVIA3 Statements of Clarification.’ The conclusion of the assessment is that for landscape effects it is not considered that there would be any significant indirect effects on the landscape character within the Peak District National Park as a result of the Scheme.</p> <p>7.3.3. The study area is confirmed within the ES chapter 7: methodology, this confirms that landscape assessment study area extends to 1km, this was considered adequate given the nature of the scheme and that ‘the presence of existing highway infrastructure generally precludes any likelihood of significant landscape and visual effects occurring over distances of greater than 1km’.</p> <p>7.3.4. To inform the study area for the visual assessment a ZTV covering 10km was produced, this established the theoretical area from which any part of the scheme may be seen. The study area used for the visual assessment is 2 km offset from Scheme limits, this was confirmed by further desktop assessment and field surveys, the study area is considered appropriate as a result of the undulating topography and potential for sensitive receptors to view the Scheme from adjacent higher ground, for instance from within the PDNP.</p> <p>7.3.5. The assessment of indirect visual effects within the Peak District National Park is as per methodology agreed with the stakeholders, as detailed within chapter 7 section 7.3, it focuses on Landscape Character Types within the Peak District National Park and the routes likely to experience potential changes to vehicular flows as a result of the Trans-Pennine Upgrade Scheme during its operation..</p>	<p>We set out in REP4-015 that landscape impacts within the PDNP should be considered significant.</p>
<p><b>More carbon emissions</b></p> <p>7.4.1 Please refer to the Applicant’s response to section 4.4 of the Written Representation.</p>	<p>NH’s response references section 4.4 which is addressing REP2-069 section 4.6 about very special circumstances and the Green Belt.</p>
<p><b>Effects on Air Quality</b></p>	<p>See our rebuttal of NH’s Section 5.2 comments above.</p>

7.4.2 Please refer to the Applicant's response to the "Omission of AQMAs" in section 5.2 above.	
<b>CUMULATIVE EFFECTS</b>	
<b>National Highways Comments</b>	<b>CPRE PDSY Rebuttal</b>
<p>8.2.1 National Highways follows the methodology and 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.</p> <p>8.2.2. As per ES Chapter 7: Landscape and Visual Effects (REP2-007) Paragraph 7.3.3 'A detailed landscape and visual assessment has been undertaken following the requirements of DMRB LA 107 standard. The assessment is also informed by guidance set out in GLVIA3 and GLVIA3 Statements of Clarification.'</p> <p>8.2.3. The overall conclusions of ES Chapter 7 were carried through into ES Chapter 15: Cumulative Effects where the cumulative landscape effects were considered for single and different projects. This assessment was carried out in line with DMRB LA 104 and PINS Advice Note 17. Further details of the Cumulative Assessment methodology, along with the conclusions of the cumulative Landscape and Visual effects assessment, are presented in ES Chapter 15: Cumulative Effects.</p>	<p>We have responded to NH's approach towards cumulative impacts in our submission for Deadline 4 REP4-016. In the context of the EIA Regs, the Environmental Statement presented for the DCO has not fulfilled the requirements with respect to cumulative effects and is therefore unlawful.</p> <p>Existing and/or approved projects - planning and infrastructure schemes - are identified in ES Chapter 15 Cumulative Effects. Transport Assessment Report 4.1.5 (APP-185) identifies that such projects are included in all three growth scenarios and ES Ch. 1-4 4.2.18 (REP2-005) identifies that such projects are included in the traffic model for both assessment of the future 'do minimum' and the future 'do something'. By including these projects in the modelling both with and without the scheme, it is not possible to assess the cumulative effects of the scheme with these projects - we only know the effects the scheme would have as a standalone development in 2025 and 2040, or in "solus".</p>
<p>Carbon Emissions</p> <p>8.3.1 The Applicant considers that the recent response to the SoS's consultation letter (dated 26 January 2022 and 2 February 2022), which is referred to in the response to section 4.4 Effects on Greenhouse Gas Emissions of the Written Representation, is relevant here. It should be noted that in response to requests in Item 6(d) of Issue Specific Hearing 2 (ISH2) to respond in writing with respect to the SoS's consultation, the Applicant will submit this in a Scheme specific response on or before Deadline 6.</p>	<p>The applicant has been asked to submit further information in writing by Deadline 6. We will respond once it is published.</p>



## BARRETT FORMULA

# Embodied greenhouse gas emissions of the UK National Infrastructure Pipeline (NIP)

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This report documents the methodology and data sources used to estimate the embodied greenhouse gas emissions of the UK's National Infrastructure Pipeline (NIP). The NIP (first published in 2013) contains an overview of planned and potential UK infrastructure investment to 2020 and beyond. Over this period, the government anticipates public and private investment of more than £466 billion to meet the infrastructure needs of the UK economy, whilst achieving emissions reductions aligned with the UK's carbon reduction commitment to reduce 1990 greenhouse gas emissions by 80% by 2050. Therefore it is important to estimate the emissions requirements of planned infrastructure developments so as to ensure the target is not exceeded. Embodied emissions are the full supply chain emissions associated with the initial creation of an asset. Typically this includes emissions from: raw material acquisition, transport, processing and manufacturing of building materials; distribution of materials to site; and energy used on-site in assembly. In the infrastructure sector these are commonly referred to as capital carbon emissions to accord with the concept of capital cost. This study does not calculate the operational emissions from using the infrastructure e.g. the additional travel emissions from extending the road network. The emissions are calculated using a top-down input-output analysis, and the challenges associated with producing a comparable bottom-up estimate are discussed. Upper and lower emissions estimates are calculated to reflect (1) the desired expenditure of £466 billion and (2) the £196 billion of expenditure assigned to projects under construction.

## 1 UK's NIP

Historically the UK has invested around £30 billion per annum in infrastructure<sup>1</sup>. However, public and private investment of £466,031 million is anticipated from 2014/15 to post 2020/21 across a range of infrastructure projects, summarised in Table 1. This represents expenditure of the order of £50 billion per annum. However, of this anticipated investment only £196,208 million is assigned to projects that are *active, approved or in construction* (Table 2). Therefore we have calculated emissions corresponding to an upper desired level of spend and a lower level of spend on projects under construction<sup>2</sup> which represent

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<sup>1</sup> Average of 2005-2012 public and private investment based on HM Treasury figures published in National Infrastructure Plan 2012 update.

<sup>2</sup> The definition of 'under construction' used here refers to projects that are *active, approved or in construction*. The headline £277bn 'under construction' figure from the National Infrastructure Plan 2014 update also incorporates projects with a scheme status of *various*. As, upon inspection, many of these projects are not yet under construction, these have been excluded from the definition used in this report.

embodied emissions we are already committed to. Expenditure includes the physical resource inputs as well as wages. Prices are held constant at 2013/14 levels (i.e. the change in expenditure reflects a change in quantity, not price changes due to inflation).

**Table 1: Planned investment by infrastructure category (constant 2013/14 prices, £M)**

Infrastructure category	Total	2014/15	2015/16	2016/17	2017/18	2018/19	2019/20	2020/21	Post 2020/21
<b>Communications</b>	£10,954	£4,746	£5,449	£759	£0	£0	£0	£0	£0
<b>Energy</b>	£274,931	£25,000	£25,718	£24,374	£24,902	£27,466	£21,184	£23,274	£103,013
<b>Flood</b>	£3,654	£494	£435	£405	£407	£403	£386	£396	£729
<b>Science and Research</b>	£1,375	£388	£531	£270	£105	£63	£17	£0	£0
<b>Transport</b>	£142,273	£16,499	£17,689	£16,216	£16,085	£15,801	£11,681	£12,985	£35,317
<b>Waste</b>	£1,984	£899	£693	£351	£40	£0	£0	£0	£0
<b>Water</b>	£30,861	£4,940	£4,654	£5,140	£5,367	£5,356	£4,789	£454	£160
<b>Grand Total (£M)</b>	<b>£466,031</b>	<b>£52,967</b>	<b>£55,169</b>	<b>£47,514</b>	<b>£46,906</b>	<b>£49,089</b>	<b>£38,057</b>	<b>£37,109</b>	<b>£139,219</b>

**Table 2: Investment in projects that are active, approved or in construction by infrastructure category (constant 2013/14 prices, £M)**

Infrastructure category	Total	2014/15	2015/16	2016/17	2017/18	2018/19	2019/20	2020/21	Post 2020/21
<b>Communications</b>	£10,954	£4,746	£5,449	£759	£0	£0	£0	£0	£0
<b>Energy</b>	£120,411	£21,737	£20,953	£18,790	£17,056	£14,880	£7,152	£6,601	£13,242
<b>Flood</b>	£1,082	£411	£241	£142	£84	£48	£41	£35	£80
<b>Science and Research</b>	£1,001	£376	£389	£198	£21	£11	£6	£0	£0
<b>Transport</b>	£57,634	£15,095	£12,889	£9,376	£8,418	£6,753	£2,436	£2,629	£36
<b>Waste</b>	£1,549	£749	£565	£223	£13	£0	£0	£0	£0
<b>Water</b>	£3,576	£3,576	£0	£0	£0	£0	£0	£0	£0
<b>Grand Total (£M)</b>	<b>£196,208</b>	<b>£46,691</b>	<b>£40,487</b>	<b>£29,487</b>	<b>£25,592</b>	<b>£21,692</b>	<b>£9,635</b>	<b>£9,265</b>	<b>£13,358</b>

## 2 Embodied emissions

There are two common methods for calculating supply chain or embodied emissions: bottom-up life-cycle assessment (LCA) and top-down environmentally-extended input-output analysis (EE-IOA). LCAs are conducted by collecting primary emissions data at every stage in the lifecycle of a process or product. This is in contrast to EE-IOA which redistributes on-site emissions data reported at 100 or so aggregated sectors (depending on the model used) by countries to the equivalent number of final products through monetary trade transactions. LCA is therefore more product specific yet due to the complexity and number of supply chain components involved, is restricted to measuring a proportion of the full upstream impacts, whilst excluding others. On the other hand, EE-IOA provides a 'boundary-less' system in which all emissions are captured, yet it is constrained by aggregated sector representation.

This study adopts a top-down EE-IOA approach, presented in Section 2.1. The factors preventing a comparative bottom-up estimate are discussed in Section 2.2. An approximate allocation of emissions to NIP categories based on anticipated expenditure is presented in Section 2.3.

### 2.1 Top-down estimate for embodied emissions

EE-IOA generates an emissions intensity factor for the emissions embodied in UK construction per pound spent on the construction sector's output (kgCO<sub>2</sub>e/ £), which we

take as representative of the emissions intensity of infrastructure. This relates to all the physical goods and services required along the construction sector's supply chains, whether produced in the UK or abroad. The model accounts for different carbon intensities of production abroad. For example, components sourced from China have been produced with a more coal-rich and hence carbon-intensive energy supply. We use the UK EE-IOA database<sup>3</sup> to calculate an emissions intensity factor for UK construction for each of the years 2008-2012. The data is presented in constant prices, using 2010 as our constant price year. Over the 5 years from 2008 to 2012, the emissions intensity of UK-consumed construction products has reduced by 4.4%. This is equivalent to an average of 0.9% efficiency improvements every year. In 2012, UK electricity inputs contributed 5.1% of the total embodied carbon, which is set to decarbonise from 500 gCO<sub>2</sub>/kWh to 50 gCO<sub>2</sub>/kWh between 2014 and 2030, at a rate of 5.6% per year. Imported electricity inputs contribute 7.1% of the total embodied carbon and we assume the same annual rate of improvement as the UK electricity decarbonisation. If all non-electricity inputs to the construction sector's carbon intensity improve at 0.9% and electricity at 5.6%, we find the overall construction multiplier reduces by around 1.35% per year. Table 3 shows the latest (2012) and projected carbon intensities for UK construction to 2021 and Figure 1 shows the trend from 2004 to 2021.

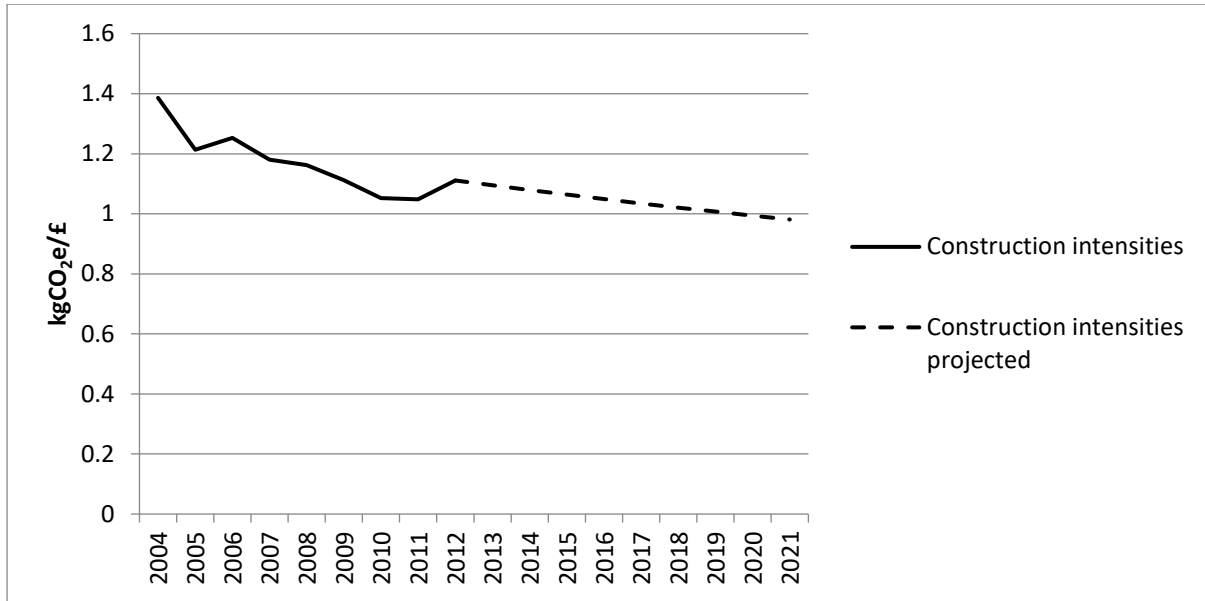
The upper and lower estimates for annual government infrastructure expenditure are multiplied by the embodied carbon intensity of construction for the equivalent year to calculate the absolute embodied emissions of the NIP. Before multiplying the expenditure by the carbon intensity, the gross value added, which is mainly paid wages, must be removed to get a figure representative of physical inputs only (i.e. carbon is not embedded in workers). To do this we take the proportion of the construction sector's spend on gross value added from the UK National Accounts for the year 2012 and assume that this proportion is valid for the years 2013-2021. In 2012, the percentage of construction expenditure on gross value added was 42.6%. In addition, the expenditure values are deflated to the year 2010's prices, since the carbon intensity figures refer to prices for that year. The cumulative embodied emissions using the top-down approach are estimated to be 243,831 kt CO<sub>2</sub>e for the desired NIP spend and 104,220kt CO<sub>2</sub>e for the NIP spend on projects under construction.

**Table 3: Carbon intensity, spend and embodied emissions of the UK's NIP to 2021**

	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021
<b>Carbon intensity (kgCO<sub>2</sub>e/ £)</b>	1.11	1.09	1.08	1.06	1.04	1.03	1.02	1.01	0.99	0.98
<b>Total NIP expenditure minus wages at 2010 prices (£M)</b>			27,184	28,314	24,386	24,074	25,194	19,512	19,045	71,451
<b>NIP expenditure minus wages at 2010 prices (£M) for projects under construction</b>			23,963	20,779	15,134	13,135	11,133	4,945	4,755	6,856
<b>Embodied emissions for desired expenditure (Kt CO<sub>2</sub>e)</b>			29,334	30,120	25,580	24,906	25,194	19,670	18,929	70,098
<b>Embodied emissions for projects under construction (Kt CO<sub>2</sub>e)</b>			25,857	22,104	15,875	13,589	11,363	4,980	4,726	5,726

<sup>3</sup> The UK EE-IOA database is used to calculate the UK's CO<sub>2</sub>e consumption-based account and this figure is reported annually by Defra

Figure 1: CO<sub>2</sub>e intensities of construction products from 2004-2021



## 2.2 Bottom-up estimate for embodied emissions

Bottom-up estimates of embodied emissions are often preferred owing to their greater specificity and reduced dependence on monetary proxies. However, two principal barriers prevent a bottom-up estimate in this instance: the lack of emissions data for certain infrastructure categories; and the presence of aggregated/unspecified expenditure data in the NIP.

The 2013 Infrastructure Carbon Review highlighted the lack of detailed industry data on embodied carbon in many categories. The Review authors were unable to gather sufficient data to compute a bottom-up estimate of baseline emissions for the sector, despite widespread industry engagement and a sizeable literature review. Good quality data is available for certain NIP categories. For example, Water, where the assessment of embodied carbon is commonplace, motivated by requirements from the regulator. See Keil et al. (2013) for a detailed review of embodied emissions estimates gathered as part of Ofwat’s 2009 price review<sup>4</sup>. However, other NIP categories, such as Communications have little or no embodied emissions data.

Even if bottom-up figures could be estimated for the missing categories, it would still not be possible to assign carbon intensities to all expenditure set out in the NIP. A significant proportion of expenditure in the NIP is accredited to regionally allocated funds, for example Local Growth Funding allocated to Transport, without specific project details. Numerous other NIP entries also designate packages of regional funding that include a mix of project

<sup>4</sup> Keil, M., Perry, H., Humphrey, J., & Holdway, R. (2013). Understanding embodied greenhouse gas emissions in the water and sewerage sectors. *Water and Environment Journal*, 27(2), 253–260. doi:10.1111/wej.12001

types. Without further detail it is not possible to assign an appropriate carbon intensity to these funds.

### 2.3 Allocation of embodied emissions to infrastructure categories

In the absence of a comparative bottom-up estimate of embodied emissions, the top-down estimates have been allocated to NIP categories in proportion to their share of total expenditure. Estimates have been computed for both desired expenditure (see Table 4) and expenditure on projects under construction (see Table 5).

## 3 Results

244 Mt CO<sub>2</sub>e are estimated to become embodied in UK infrastructure from 2014/15 if the desired level of spending is met. A minimum of 104 Mt CO<sub>2</sub>e will be embodied if only projects under construction are completed. The bulk of planned expenditure is on Energy and Transport projects. These are assumed to be responsible for the bulk of embodied emissions (see Table 4).

**Table 4: Absolute embodied emissions by infrastructure category for desired investment**

Infrastructure category	Embodied emissions (Kt CO <sub>2</sub> e)								
	Total	14/15	15/16	16/17	17/18	18/19	19/20	20/21	Post 20/21
Communications	6,012	2,628	2,975	409	0	0	0	0	0
Energy	143,016	13,845	14,041	13,122	13,222	14,096	10,949	11,872	51,868
Flood	1,921	274	237	218	216	207	200	202	367
Science and Research	747	215	290	145	56	32	9	0	0
Transport	74,619	9,137	9,657	8,730	8,541	8,110	6,037	6,624	17,782
Waste	1,086	498	378	189	21	0	0	0	0
Water	16,430	2,736	2,541	2,767	2,850	2,749	2,475	232	81
Total	243,831	29,333	30,120	25,581	24,906	25,194	19,670	18,929	70,098

**Table 5: Absolute embodied emissions by infrastructure category for projects under construction**

Infrastructure category	Embodied emissions (Kt CO <sub>2</sub> e)								
	Total	14/15	15/16	16/17	17/18	18/19	19/20	20/21	Post 20/21
Communications	6,012	2,628	2,975	409	0	0	0	0	0
Energy	63,184	12,038	11,439	10,116	9,057	7,795	3,697	3,367	5,676
Flood	579	228	132	76	45	25	21	18	34
Science and Research	547	208	212	107	11	6	3	0	0
Transport	31,067	8,359	7,037	5,048	4,470	3,537	1,259	1,341	15
Waste	850	415	308	120	7	0	0	0	0
Water	1,980	1,980	0	0	0	0	0	0	0
Total	104,219	25,856	22,103	15,876	13,589	11,363	4,980	4,726	5,726