

Climate Submission

ISH4 – Item 9.b - Whether the approach to carbon emissions adequately considers the Government’s updated target for net zero carbon by 2050.

Let’s look at the National Appraisal of the A38 Derby Junctions Scheme as part of RIS 1

The schemes studied for inclusion in RIS1 (Road Investment Strategy 1) were analysed for their Benefit to Cost Ratio. However, cost-benefit analysis has built-in biases that favour road schemes over other options. It has been criticised repeatedly for its perverse logic ¹, double counting ², and the high importance given to time savings of a few minutes for millions of motorists. ^{3 4}

By contrast, the assigned cost of carbon emissions is severely underestimated and costs of carbon emissions in future years are heavily discounted. ⁵ The high rate of discounting coupled with the uncertainty of carbon costs in the long period over which the disbenefit is calculated (generally 60 years for road projects) also makes the accuracy and ethics of the economic appraisal highly questionable. ⁶

This bias towards time savings and the discounting of carbon impacts means that environmentally damaging road projects that increase carbon emissions continue to get approved. This is totally disregarding the Government’s updated target for net zero carbon by 2050.

¹ For example, less traffic and lower fuel consumption are treated as ‘costs’ in WebTAG rather than ‘benefits’ due to reduced tax receipts from fuel duty.

² Journey time savings are used as a proxy for all economic benefits, but other economic benefits are also added, leading to double counting. Buchan K. (2014) Only major reforms can restore confidence in appraisal. Letter from Keith Buchan, Director MTRU, to Local Transport Today, 643, March/April 2014.

³ David Metz, former chief scientist at the Department for Transport, has made many criticisms of the use of travel time savings in scheme appraisal: Metz D. (2008) The Myth of Travel Time Saving Transport Reviews 28, 3, pp.321-336; Metz D. (2014) Travel demand: the basics. Local Transport Today, 643, March/April 2014; Metz D. (2015) Economics of road investment – a critique, article on Peak Car website, 22 May 2015, accessed 21.02.19. Professor John Whitelegg has also argued that travel time savings should not feature in scheme appraisal: Whitelegg, J. (2012) How much transport can landscape tolerate: new ways of thinking about traffic, landscape and nature? in Koerner, S. et al. (eds) Landschaft und Verkehr, University of Kassel, Germany, ISBN 978-3-86219-358-5, pp 93-114. The principal criticism is that in practice, no time is actually saved (except in the very short term). Instead, new transport infrastructure opens up land for development of housing, shopping centres or business parks, and people have to travel further to reach jobs, shops etc.

⁴ In the case of a new high-speed road, the predicted time saved per driver is assigned a generous monetary value which is then multiplied by the millions of drivers forecast to use the road over its lifetime of say, 60 years. For example, in WebTAG the perceived value of the Working (Employers' Business) Time of a car driver is £14.86/hour in 2018 (at 2010 prices), which increases to £41.52/hour for 2070.

⁵ The practice of discounting, which places greater weight on costs and benefits in the short term, is supposed to reflect the fact that people, and society as a whole, prefer to receive goods and services now rather than later. However, this means environmental problems such as climate change, which incur large costs in the longer term, count for little. For example, a £1 billion environmental cost in 50 years’ time is discounted to a net present value of £147 million. Hickman R. (2015) The problematic application of CBA in transport appraisal. Presentation, Sintropher final workshop, Brussels, 2015.

⁶ The costs and benefits occurring in the first 30 years of a programme, project or policy are generally discounted at an annual rate of 3.5%, declining thereafter. A high discount rate suggests those alive today are worth more than future generations, which some argue is unethical. This is why the Stern Review on the economics of climate change published in 2006 adopted a lower rate of 1.4%. Carbon Brief (2017) Q&A: The Social Cost of Carbon. 14 February 2017.

In the light of the Government's declared Climate Emergency the current cost-benefit appraisal process needs to be replaced with a transparent approach which gives more weight to carbon impacts and is not biased towards roadbuilding.⁷

Having been accepted as part of RIS 1 using biased metrics let's look at the Detailed Transport Appraisal for the scheme

According to Department for Transport guidance (May 2018), transport appraisal should begin with an 'option generation' stage which considers "*all modes, infrastructure, regulation, pricing and other ways of influencing behaviour*" to address a defined problem⁸. Contrary to this guidance we have not seen any alternatives proposed by Highways England, including regulation, road pricing or behavioural change to address the stated problem of congestion. All we have been given is a limited range of road widening and junction layout schemes. Where are the proposals for road pricing, improved rail and bus services or segregated cycleways? What discussion has there been with the community or with Derby City Council about other measures that could be implemented?

In Nottingham they have introduced a Workplace Parking Levy which has raised £61 million to date, all of which has been spent on improving the city's transport infrastructure, including extension to the city's tram network, significant renovation of the main railway station and a new fleet of 45 electric buses. Why hasn't similar consideration been given to such a scheme in Derby? Given the number of people commuting along the A38 to Derby, such measures could have had a significant and beneficial impact on congestion.

The scheme is not even likely to meet its own objectives. According to Highways England the main objective for the project is to support economic growth by reducing delays and increasing the reliability of journeys. Yet there is a wealth of evidence stretching back nearly one hundred years that building more roads increases traffic.⁹ Evidence from 13 major road schemes published by Highways England supports the conclusion that road schemes generate traffic.¹⁰

There is also little evidence that road schemes support economic growth. Highways England's own evidence of the short-term impacts from over 80 road schemes, through its Post-Opening Project Evaluation (POPE) process, shows that of 25 road schemes justified on the basis that they would benefit the local economy, only five had any evidence of any

⁷ This critique of the RIS appraisal methodology comes from a report done for Friends of the Earth. Hopkinson L and Sloman L (2019) Getting the Department for Transport on the right track. Briefing for Friends of the Earth. May 2019 <https://www.transportforqualityoflife.com/u/files/5%20Getting%20the%20Department%20for%20Transport%20on%20the%20right%20track%20briefing.pdf>

⁸ Much of the process that is detailed in the official guidance is sensible and involves, for example, establishing the need for an intervention, identifying objectives, identifying interventions, and considering a wide range of options. Department for Transport (2018) [Transport Analysis Guidance. The Transport Appraisal Process](#). May 2018.

⁹ It has been known since 1925, and demonstrated in multiple subsequent reports, that new roads generate traffic. Goodwin P. (2006) [Induced Traffic Again. And Again. And Again](#). Local Transport Today, 450, 24 August 2006.

¹⁰ Sloman L, Hopkinson L and Taylor I (2016) The Impact of Road Projects in England. Report for CPRE.

<https://www.cpre.org.uk/wp-content/uploads/2019/11/TfQLZ-ZTheZImpactZofZRoadZProjectsZinZEnglandZ2017.pdf>

economic effects.¹¹ Even for these five, the economic effects may have arisen from changes incidental to the road scheme, or involved development in an inappropriate location, or involved changes that were as likely to suck money out of the local area as to bring it in.

Lastly, I would like to talk about the Environmental Statement

Chapter 14 of The ES provides estimates for CO_{2e} emissions – during construction these are estimated to be 130,858 tonnes, the majority of which is from embodied carbon within the construction materials. ‘During operation’ estimates are given for 2024 and 2039 – there is no information given for the years in-between but assuming a straight line increase we estimate that the scheme (including construction) will add around 160,000 tonnes CO_{2e} compared to the do-minimum scenario in those 15 years.

Now the Government’s National Policy Statement on National Networks (NPSNN) guidance is that road schemes should not be rejected on grounds of increased carbon emissions unless the increase is **“so significant that it would have a material impact on the ability of Government to meet its carbon reduction targets”**.¹²

The Environmental Statement says *“The NPSNN 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.”*

But of course, they are not isolated cases! – should we really be judging these schemes in isolation?

- So if we look at the carbon budget for Derby¹³ which has been estimated by the Tyndall Centre, this shows that for Derby to make its ‘fair’ contribution towards the Paris Climate Change Agreement it has to stay within a maximum cumulative carbon dioxide emissions budget of 7.1 million tonnes (MtCO₂) for the period of 2020 to 2100. To do this it has to initiate an immediate programme of CO₂ mitigation to deliver cuts in emissions averaging a **minimum of 13.1% per year**.
- In 2017 (latest figures available) Derby had carbon emissions of 1.1 million tonnes of CO₂ of which 0.4 million tonnes (35%) were transport.¹⁴ Based on these CO₂ emission levels, **Derby would use up its entire allocated carbon budget in just 7 years from 2020**.
- Assuming that the Derby carbon budget for transport is 35% of the Tyndall budget, then this gives a total cumulative budget of 2.5 million tonnes for transport. So the additional 160,000 tonnes CO_{2e} emissions from the A38 scheme compared to the do-

¹¹ Sloman L, Hopkinson L and Taylor I (2016) The Impact of Road Projects in England. Report for CPRE.

<https://www.cpre.org.uk/wp-content/uploads/2019/11/TfQLZ-ZTheZImpactZofZRoadZProjectsZinZEnglandZ2017.pdf>

¹² Paragraph 5.18 from the [National Policy Statement for National Networks. \(Dec 2014\)](#)

¹³ <https://carbonbudget.manchester.ac.uk/reports/E06000015/>

¹⁴ Department for Business Energy and Industrial Strategy (2019) Emissions of carbon dioxide for Local Authority areas.

<https://data.gov.uk/dataset/723c243d-2f1a-4d27-8b61-cdb93e5b10ff/emissions-of-carbon-dioxide-for-local-authority-areas>

minimum **would actually be 6% of Derby's cumulative transport carbon budget. This is not insignificant.** And this should be seen in the context of the 13% year on year reduction in emissions that is needed in Derby to meet the Paris Climate Agreement.

So, I would argue that the emissions from this road scheme are **so significant to Derby that it would have a material impact on the ability of Derby City Council to meet its carbon reduction targets**".

And put that together with the other 100 or more similar road schemes that will be affecting other Local Authorities, the cumulative effect would be **so significant that it would have a material impact on the ability of Government to meet its carbon reduction targets.**

Even the 'business as usual', 'do-minimum' scenario is unacceptable in a climate emergency, let alone increasing emissions through a 'do-something' scheme. If we are going to "do-something" then *the something* we need to do is cut emissions from the existing A38 road by reducing traffic, starting immediately.

Just a quick mention of Electric Vehicles

Note that the government's plans to electrify the road vehicle fleet is not going to be enough to meet carbon budgets. Even with the recent announcement to bring forward the ban on *new* petrol and diesel cars to 2035, this will still mean that nearly 70% of the cars *on the road* in 2030 will be petrol and diesel.¹⁵

In order to meet carbon budgets aligned with the Paris Agreement, the analysis by a number of researchers including the Tyndall Centre¹⁶ and Friends of the Earth¹⁷, show that over the next 10 years we will need to cut road traffic by anywhere from 20-60% compared to current levels.

So rather than building new road capacity, we need to be doing everything possible to reduce the need to travel by car – through improvements to public transport, better cycle infrastructure, incentives for home working, car sharing etc.

¹⁵ This is because new cars represent only a small proportion of the overall fleet. In 2018 electric cars were only 2.6% of new cars and 0.5% of the overall car fleet.

¹⁶ Aligning UK car emissions with Paris (1.5-2°C) provisional carbon budget analysis - Prof. Kevin Anderson, Tyndall Centre for Climate Change Research. Presentation at the lowCVP Conference. July 2019.
<https://www.lowcvp.org.uk/events/conference.htm>

¹⁷ Hopkinson L. and Sloman L. (2019) More than electric cars. Why we need to reduce traffic to reach carbon targets. Briefing for Friends of the Earth. February 2019.
<https://www.transportforqualityoflife.com/u/files/1%20More%20than%20electric%20cars%20briefing.pdf>

In conclusion, we have here a road scheme that was

1. initially proposed using biased cost benefit metrics that are unsuitable for times of climate emergency
2. that is unlikely to meet its objectives
3. which hasn't looked at suitable alternative solutions
4. which will make it far more difficult for Derby to meet its carbon reduction targets and therefore will have a ***material impact on the ability of Government to meet its carbon reduction targets.***

Surely, we should be giving the Climate Change Act, which is legally binding, and the Government's updated target for net zero carbon by 2050 a lot more weight rather than continuing with the mis-guided approach of biased metrics, blinkered choice-making and the inadequate guidance of an outdated NPSNN.

Climate Change Act

While we are on the subject of climate change, I would like to point out that the Climate Change Act and its targets are very out of date, as is the government's 2050 net zero target. The scientific consensus is that **radical change** is now necessary – incremental change is no longer enough – the ice-caps are already melting at speeds faster than expected, we have lost huge expanses of forest to fires, the permafrost has started to melt and nearer to home the A38 was closed due to flooding yesterday – in reality, I doubt we have any carbon budget left – it is gone – so in the absence of an appropriate response by the government, people need to start taking a stand – North Somerset Council took a stand last week by refusing permission for the Expansion of Bristol Airport on the grounds of Climate Change. I implore you to make a stand for humanity and all of nature and recommend that this application is also refused on the basis of Climate Change.

Thank you for listening.