



Well-being of Future Generations (Wales) Act 2015: review of the proposed M4 relief road

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Introduction

This report, produced by NEF Consulting for the Office of the Future Generations Commissioner, considers the proposed M4 relief road around Newport and how it promotes the intentions of the Well-being of Future Generations (Wales) Act 2015.

NEF Consulting has constructed a development framework for the Office of the Future Generations Commissioner to help government bodies understand how to apply and make the Act a central tool for proactive sustainability decision-making. The framework expresses the five ways of working and seven wellbeing goals of the Act as design considerations for infrastructure projects being developed by public bodies. This report uses the framework to assess the proposed M4 relief road around Newport (hereinafter 'the Scheme') against each element of the Act (the five ways of working and seven wellbeing goals), and provides a summary of the review in Key findings.*

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^{*} The framework has been developed primarily to be used to embed the intentions of the Act into the design of projects. In this case, it is being applied retrospectively to test the Scheme against the Act.

The Scheme

The Scheme consists of:

- A three-lane motorway between Castleton and Magor to the south of Newport, South Wales.
- The reclassification of the existing M4 as a trunk road between Castleton and Magor.
- Relief to Junction 23A with a new M4/M48/B4245 connection.
- The provision of cycle and walking infrastructure.

Key findings

- Overall, the Scheme has not been designed to support the future of Wales as set out in the Act.
- The Scheme is large enough to be considered on its own merits. It has been suggested that the Act should guide decisions related to the "collective impact of its [the Welsh government's] actions as a public body", rather than on the individual impact of a single scheme.¹ This would result in the Act never being applied in any meaningful way to strategic infrastructure decisions in Wales, and was not the intention in the development of the Act.
- While it is acknowledged that it would be impractical to expect all schemes to cover all aspects of the Act equally, it is reasonable to expect schemes of this nature to be clearly justified against prosperity (particularly low carbon and creating employment), ecological resilience, supporting healthier lifestyles, and global responsibility in resource consumption and greenhouse gas production. The analysis provided is incomplete and, in some cases, tokenistic.
- Specifically, the Scheme fails to provide adequate evidence in relation to:
 - Ecological resilience.
 - o Provision of infrastructure for improved public health.
 - o Proportionate and responsible resource use.
 - Reduced carbon emissions and Wales' ecological footprint.

Ways of working

The Well-being of Future Generations (Wales) Act 2015 established five ways of working for public bodies to evidence they have applied the sustainable development principle. The extent to which the Scheme has addressed the ways of working varies.

- **1. Long term:** Recognise the importance of balancing short-term needs with the need to safeguard the ability to also meet long-term needs.
 - The Scheme has included some cycling and walking links to support active transport.
 However, little evidence is provided that indicates that the Scheme considers or
 significantly contributes to developing a longer-term sustainable travel system for
 Wales.
 - By supporting private car use, the Scheme as devised fails to encourage more sustainable travel behaviour.
 - Concerns have been voiced about the almost invariable tendency of similar projects
 to go over budget. At a time of budget constraints, which will be exacerbated by the
 withdrawal of EU funding across Wales, the Scheme is likely to put increasing
 pressure on investment funding available for schemes with more significant longerterm benefits.
 - There are credible doubts about the forecasts for growth in the long-term demand for roads.^{2,3}
- **2. Prevention:** Prevent problems occurring/worsening and so help public bodies meet their objectives.
 - On both environmental concerns and the need for widely shared prosperity, the Scheme does not offer a preventive answer to existing problems.
 - The Welsh government is committed to reducing the country's ecological footprint to its fair share of the planet's total ecological footprint by 2050.⁴ It is estimated that travel contributes to 11% of the ecological footprint, with private transport generating upwards of 50% of this.⁵
 - Increasing the supply of roads is known to induce demand, i.e., make driving more appealing, encourage people to drive more.
 - The Scheme fails to address how it will contribute to an overall reduction in Wales's ecological footprint.
 - The Scheme has not addressed how it will support prevention of known risks in the area, such as flooding, and whether such trends will require further investment for mitigation in the future.
 - Twenty-three per cent of the Welsh population currently lives in poverty. The Scheme fails to make a compelling case for:
 - How it will intervene in cycles of poverty and unemployment in Wales.
 - How it will address inequality between regions in Wales and within the Cardiff/Newport area.

[†] Figure from the Welsh government. Poverty define as income lower than 60% median income.⁶

- **3. Integration:** Consider how the wellbeing objectives of public bodies may impact each of the wellbeing goals, their other objectives, or those of other public bodies.
 - The route has been developed to integrate with plans for the South Wales Metro, for example with new M4 junctions and improved access to railway stations.
 - The Sustainable Development Report discusses the Scheme against the wellbeing goals, but the effect shows the gap between having the goals as a lynchpin throughout the development of a scheme and mitigating a scheme retrospectively.
 - Overall, there is little evidence provided of effective integration across the wellbeing goals or with other relevant public documents, such as health and local development plans and the Cardiff City Deal.
 - Motorways provide very limited co-benefits, and this misses a valuable opportunity to leverage significant spending to achieve maximum effect across shared goals.
- **4. Collaboration:** Work with other people (or other parts of the public body) that could help the public body meet its wellbeing objectives.
 - The Act expects a new type of collaboration between public bodies and others, engaging and seeing the world from another body's point of view.
 - Over the years, other public bodies have been involved in discussions around the
 options for the M4. Although the Act was not in force when the Scheme was initially
 developed, there is a desire to deepen collaboration this should the Scheme go
 forward, but it is currently unclear how collaboration will be developed.
 - Some organisations whose engagement would be expected include local community and residents organisations, Natural Resources Wales, and local businesses.
- **5. Involvement:** Involve people with an interest in achieving the wellbeing goals, ensuring those people reflect the diversity of the area which the body serves.
 - The Scheme has been under consideration since 2011, with various routes proposed. In the latest iteration of the Scheme, the route has been selected and there have been no effective choices for stakeholders other than to support or oppose the Scheme.
 - Local people have not yet been adequately involved and engaged in the Scheme.
 Public consultation has not occurred at a point where it could be effective and meaningful, and many of those most directly affected have not received the appropriate depth of information at the right time.
 - As well as individuals, both local and national groups are registering objections to the Scheme in relation to wellbeing, and raising concerns which have not been heard in the process to date.

Wellbeing goals

The Well-being of Future Generations (Wales) Act 2015 established seven wellbeing goals to create a Wales that people want to live in, now and in the future.

1. A prosperous Wales

An innovative, productive and low carbon society which recognises the limits of the global environment and therefore uses resources efficiently and proportionately (including acting on climate change); and which develops a skilled and well-educated population in an economy which generates wealth and provides employment opportunities, allowing people to take advantage of the wealth generated through securing decent work.

Llywodraeth Cymru, Welsh government. (2015). Well-being of Future Generations Act (Wales).

Information provided in the Scheme's proposal is assessed against six aspects of prosperity.

1.1 Innovative

A prosperous Wales is one with a thriving new business sector, supporting social innovation and entrepreneurs. It understands future challenges, such as sustainable energy, and capitalises on trends which open opportunities for new businesses and the production of public goods.

- The Scheme does not address this aspect of prosperity, and as such it is unclear how the Scheme contributes to innovation.
- There are three key trends which it would be reasonable to expect the Scheme to address in its assessment:
 - Economic/political change: The impact of Brexit on the road-freight industry, and the implications for freight use of this Scheme in the medium term, and the longer-term changes in working patterns.
 - Technological change: The expected changes in autonomous travel and implications for required capacity in the road network over the 60-year life span of the Scheme. ^{‡,7}
 - Social change: Growth in car ownership in Wales and vehicle kilometres has plateaued since 2007. Although they may have yet to reach their peak, this slowing of the growth rate reflects a pattern seen in the rest of the UK as well as many other major advanced economies, for example Germany and France.⁸

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[‡] Connected and autonomous vehicles will be mainstreaming in the UK in coming years, both in passenger and freight travel. A step-change in this would raise the prospect of far higher nose-to-tail traffic flows, with a significant decrease in the sort of accidents that are currently an issue for delays on the M4. Although it is unclear when such vehicles will become dominant on UK roads, over the 60-year given life span of a motorway, it is likely that autonomous travel will constitute a large proportion of vehicles on UK roads. This may result in an over-provision of road space which could be exacerbated by other technology-driven changes, for example automation leading to an aggregate in demand for work travel.

 There is little evidence of how the Scheme would adapt to these trends with the end result of an over-supply of road-space at a heavy cost across the other wellbeing goals.

1.2 Productive

A prosperous Wales creates goods, provides services to meet its own needs, and develops strong export markets.

- There is little evidence provided to support the argument that improved connectivity, where there is already reasonable provision, can resolve the economic difficulties currently facing Wales.⁹
- Wales currently faces several economic difficulties:¹⁰
 - A crisis of skills and lack of employment.
 - A crisis of foreign direct investment historically it created low-skilled, poorly paid jobs, which have now been diverted elsewhere by cheaper labour costs overseas.
 - A political problem fiscal devolution has not gone far enough to give Wales the macroeconomic tools that it needs, while it is forced to accept an unsuitable finance-led economy that does not work for it.
- It is unclear how the Scheme will tackle any of these economic problems in the long term, and the short-to-medium-term benefits are limited to the problem of skills and lack of employment.
- The Scheme's Economic Appraisal Report forecasts economic growth (Gross Domestic Product) that will result from improved connectivity by lowering the costs of commuting and thus widening the potential pool of workers for employers. This theoretical argument can only be substantiated when you are connecting potential workers to existing or potential jobs, and not when there is a more general problem of a lack of available jobs in the area.¹¹
 - The route will not open up new employment opportunities, for example bringing new employment centres. The employment sites that it connects to in South Wales are already accessible through the existing M4.
 - Of the estimated employment, 700 jobs per month over the course of construction, it is unclear how many of these are additional as a result of the Scheme, and how many are diffused through the supply chain.
- Infrastructure projects can support local economies by sourcing their materials locally. Government spending generates demand for local businesses, who can increase the local economic multiplier through increased local employment and local supply chains.
 - O Previous Welsh infrastructure schemes, such as the Arbed Grant,¹² have successfully built into programmes an intention to generate local economic impact.¹³ The Scheme should be able to clearly articulate how it could support skills and jobs development in the Newport area, and work with Wales-based suppliers to increase the economic impact of this Scheme for the Welsh economy.
 - The Scheme's Sustainable Development Report states: "[the] project team has also expressed a commitment to local procurement policies where

- possible and appropriate, with opportunities considered on a case by case basis". 14
- The Scheme's commitment to local procurement is contingent upon the capacity of the local market to respond to this opportunity. It has been recognised that currently Wales does not have enough large Tier 1 contractors to bid for the Scheme's most valuable construction or design lots.¹⁵ Without a planned intervention to develop this market, it is likely that much of the government's approximate £1 billion of construction spending on the Scheme will leak out of Wales and fail to stimulate the local economy.
- The majority of the Scheme's economic growth benefits are expected to accrue outside of Wales. The Scheme's model forecasts changes in GDP by 2022 and 2037 in the 'do minimum' vs 'do nothing' scenarios, across 16 local authorities which are thought to benefit from the Scheme's agglomeration effects. Newport's GDP is forecast to experience the largest change (8.8%), followed by South Gloucestershire, Bristol, and North Somerset, and Bath & NE Somerset joint with Monmouthshire. The change in GDP in the other Welsh authorities is very small.¹⁶

1.3 Low carbon

A prosperous Wales has an economy driven by green growth, and supports people to live low-carbon lifestyles.

- The Scheme fails to support low-carbon economic growth in Wales. It does not encourage and support people to develop low-carbon lifestyles which, in transport terms, mean active and public transport. It is widely accepted that increasing supply in transport induces demand: where it becomes easier to drive, people are more likely to drive. ¹⁷ The Downs-Thomson paradox suggests that when investment/improvements make roads/private travel more appealing, demand for public transport falls and the quality/frequency of services then falls. ¹⁸
- The government's Sustainable Development Report sets out environmental objectives for the Scheme, including to: "reduce greenhouse gas emissions per vehicle and/or person kilometre."
 - A focus on reducing emissions per kilometre ignores the overall effect of increasing the number of journeys that people make. To meet the government's target to reduce the size of Wales's ecological footprint by 2050, the overall volume of journeys need to be reduced.
 - Reference should be made to *The Wales Transport Strategy* which has the following outcome: "Greenhouse gas emissions – Reduce the impact of transport on greenhouse gas emissions."
- The Scheme's *Economic Appraisal Report* claims an unsubstantiated £4,431,000 of monetised greenhouse gas benefits.²² The report fails to provide an explanation of how this figure is derived, or where these benefits accrue. The Scheme should detail the net benefits, taking into consideration the volume of materials needed for the Scheme and their embedded carbon, and the probability of increasing the number of car journeys. §,23

[§] The disclaimer noted on the analysis table fails to clarify how this figure is determined "Note: This table includes costs and benefits which are regularly or occasionally presented in monetised form in transport appraisals, together with some where monetisation is in

 Research which has included these considerations has concluded that the Scheme "will almost certainly lead to an increase in total carbon emissions".²⁴

1.4 Using resources efficiently and proportionately

A prosperous Wales uses resources effectively and proportionately builds efficiency into design (e.g. lowers embedded carbon; builds energy efficient into design) and prioritises strategic use of globally limited resources.

- The Scheme's Sustainable Development Report identifies opportunities to reduce the amount of resources used in the construction of the Scheme in terms of materials used and processes (e.g. minimising waste and thus the amount of transport needed to dispose of it off-site).
- Wales is committed to reducing its ecological footprint by two-thirds by 2050. ²⁵ The Scheme's Sustainable Development Report focuses on mitigation activities (e.g. reusing materials where possible). Importantly for the Act, the report fails to address resource use on a strategic level, and consider whether the use of resources required by the Scheme is a proportionate response to the problem it is responding to localised traffic congestion.
- Other options which entail fewer resources for construction and encourage people
 to live more sustainably should be looked at more carefully, including a
 combination of land-use measures, attitudinal/behavioural measures, infrastructure
 management, information provision, and pricing.²⁶ The Welsh government has not
 been ambitious enough with such measures, which could reduce transport's
 significant contribution to Wales's carbon emissions and reduce congestion.

1.5 Decent work

A prosperous Wales works to reduce unemployment and underemployment as well as ensure that new jobs created are good-quality jobs.

- The Scheme's Sustainable Development Report estimates that the Scheme will create employment for about 700 people per month over the course of its construction. The report commits to "ensuring as many construction jobs as possible would be filled by local workers, depending on the availability of suitably skilled people."
 - The total of full-time equivalent (FTE) jobs is not clearly stated in the analysis.
 - It has been noted that the location of the project, closer to the West of England than much of Wales, "raises the prospect that much of the labour and plant will be sourced from across the border".
- The Scheme's Economic Appraisal Report argues that employment opportunities in Wales will be boosted by making it easier for people to commute and thus widen the potential pool of labour for companies. Assuming the problem of

prospect. There may also be other significant costs and benefits, some of which cannot be presented in monetised form. Where this is the case, the analysis presented above does NOT provide a good measure of value for money and should not be used as the sole basis for decisions." ²²

- un/underemployment in Wales is a problem which will be fixed by improving labour supply assumes that the demand side will look after itself. With traditional sources of investment a decline in UK and Welsh government spending, domestic investment and FDI not recovered from the financial crash this assumption cannot be supported.²⁹
- Further, any positive impacts of improving access to the labour market largely accrue to already privileged people middle-class white men. Black people are less likely to live in a household with a car than white people (36% compared to 17%);³⁰ women drive less than half the distance that men do;³¹ people in routine and manual occupations drive less than half the distance that those in managerial/professional occupations do;³² and people who have never worked or are long-term unemployed have 13% of the mileage of those in managerial and professional occupations.^{33**} If there are labour market benefits of road infrastructure, they accrue to those who are already in the strongest position in the labour market. This calls into question how effective this Scheme can be at addressing isolation from the labour market.

1.6 A skilled and well-educated population

A prosperous Wales has a skilled and well-educated population and requires investments which both create opportunities for individuals and develop a stronger workforce.

- The Scheme is committed to achieving 20% of total labour costs from employment of new entrant trainees who have an apprenticeship, trainee, or employment contract with the contractor/subcontractor, and are engaged in a training programme.³⁴
 - The Scheme fails to identify a mechanism for developing skills in the area and aligning employment opportunities to the Scheme.

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^{**} Note: all figures for England, since Welsh data was not available. However, there is no reason to think that the patterns would not be the same.

2. A resilient Wales

A nation which maintains and enhances a biodiverse natural environment with healthy functioning ecosystems that support social, economic and ecological resilience and the capacity to adapt to change (for example, climate change).

Llywodraeth Cymru, Welsh government. (2015). Well-being of Future Generations Act (Wales).

2.1 Ecosystems which support social resilience

A resilient Wales has ecosystems which support social resilience and community wellbeing and offer opportunities for people to enjoy nature, share outdoor space, and strengthen social ties with their communities.

- The Scheme will displace public land and the Scheme's Sustainable Development Report states that exchange land will be offered in some cases as a mitigation measure.³⁵ It is unclear whether this land will be of the same or higher quality, and the mitigation measure fails to recognise the loss of social capital associated with existing sites.
 - Public spaces, such as village greens, common fields, and allotments, offer opportunities for communities to interact, build relationships, and strengthen local social capital in the long term. However, the loss of such spaces is detrimental, even where land is replaced, because the social relationships that they hold may not survive. For example, a set of allotments may have a community of residents who have worked on their land for many years, and have a sense of belonging, shared responsibility, and mutuality. If their allotment is relocated, it may no longer be possible for all members of that community to move to the new location. Increased distance of sites will impact the least mobile the elderly and people without access to private transport.

2.2 Ecosystems which support economic resilience

A resilient Wales has ecosystems which support economic resilience, and enhance opportunities for people to work and produce in a sustainable way.

- The Scheme fails to adequately address ways in which it will support economic resilience and opportunities for sustainable production.
- There will be direct damage to ecosystems which support economic resilience, including the loss of 67 hectares of the most productive and versatile agricultural land.³⁶
- At a strategic level, projects which accord with the Act should look to build on and unlock opportunities for green growth across Wales. This includes strengthening healthy ecosystems which support economic activity in coastal and rural communities, including wildlife/conservation, coasts and beaches, and agricultural resources such as soil, pollination, and regulated drainage.

2.3 Ecosystems which support ecological resilience

A resilient Wales has ecosystems which support ecological resilience and make the Welsh environment more self-sustaining, enabling Wales to better adapt to changes such as climate change.

- The Scheme is planned to cross the Gwent Levels SSSIs (Sites of Special Scientific Interest). The Sustainable Development Report states that measures will be taken to "avoid, reduce, and remediate" potential ecological effects, as well as to conserve the interest features of the SSSIs.³⁷
- The Scheme's approach to mitigation fails to meet the intention of the Act to strengthen Welsh ecology.
 - In their submission to the enquiry, Friends of the Earth argued that the Environmental Statement produced for the Scheme fails to grasp the spread of negative effects on the environment, assuming that if a habitat is not directly impacted, it will not be affected despite "overwhelming peer-reviewed scientific evidence exists that the proximity of traffic to habitats has a deleterious effect on wildlife." For example, light pollution may make it harder for owls in nearby woods to hunt at night, thus threatening their ability to survive in the area.
 - A newly planted forest does not mitigate the biodiversity loss of an established, higher functioning ecosystem.

3. A healthier Wales

A society in which people's physical and mental well-being is maximised and in which choices and behaviours that benefit future health are understood.

Llywodraeth Cymru, Welsh government. (2015). Well-being of Future Generations Act (Wales).

3.1 Infrastructure for healthier choices

A healthier Wales needs to develop an infrastructure that enables people to make healthier choices.

- The transport benefits of the Scheme include increased access to recreational activities and improved work-life balance.³⁹ However, it would be more beneficial to improve access by public and active transport.
 - Although the Scheme mentions several investments in active transport, these will be peripheral to the investment which will fail to support a modal shift towards active travel.
 - Improving access by active transport might also mean increasing the range of activities available locally, which would also leverage co-benefits in supporting cohesive communities.
- Overall the Scheme fails to address how it supports physical and mental wellbeing and relies on more car journeys to access work and recreation sites. There is no consideration of the impact on activities provided in the local area.

3. 2 Social determinants of poor health

A healthier Wales understands the social determinants of mental and physical poor health and wellbeing and acts accordingly.

- Many of the social determinants of health, such as low income, education, and socioeconomic classification, would not be practical considerations for a scheme of this nature.⁴⁰ However, there are social determinants of health which it is more reasonable to expect to be considered.
 - Ensuring that localities have quality green space is a hugely significant factor in reducing health inequalities. Living close to parks, woodland, and other open space directly benefits physical and mental health and wellbeing.
 Specifically, it has been linked to:⁴¹
 - Reduced health complaints, blood pressure, and cholesterol.
 - Improved mental health and reduced stress.
 - Perceived better general health.
 - The ability to face problems.
 - The direct impacts of outdoor air pollution on cardio-respiratory health are well documented. Poorer communities tend to experience higher concentrations of pollution, and have a higher prevalence of related conditions.⁴²
 - The Scheme notes that the reduction in noise and air quality is not uniform, with urban areas standing to benefit and those on the new alignment and connecting roads more likely to suffer a negative impact.⁴³
- While the Scheme is not predicted to exceed any air quality objectives or give a clear pattern of adverse/beneficial health outcomes, and as community land is expected to be replaced, it should be considered how these changes might interact where they occur in deprived areas, thus exacerbating existing problems.

4. A more equal Wales

A society that enables people to fulfil their potential no matter what their background or circumstances (including their socio economic background and circumstances.

Llywodraeth Cymru, Welsh government. (2015). Well-being of Future Generations Act (Wales).

4.1 Reducing social, geographic, and economic inequalities

A more equal Wales aims to comprehensively address social, geographic, and economic inequalities and aims to comprehensively address them.

- The Scheme fails to address how it helps reduce geographical inequality.
 - The Scheme is located in an area of the country which is already the most affluent in Wales. The local authorities most directly affected (Cardiff/Vale of Glamorgan and Monmouthshire/Newport) are the first and third richest local authorities, respectively, in terms of GVA per head.⁴⁴

- The Scheme's Sustainable Development Report states that the health impacts have "no clear pattern of adverse or beneficial health outcomes disproportionately affecting areas of high or low multiple deprivation".
- Even if negative outcomes are equally distributed, it is important that areas of high deprivation which will be impacted are identified early and appropriate mitigation proposed (even where the worsening air quality will not go beyond targets). Mitigation should take into account the already high levels of disadvantage and poor health outcomes.
- The Scheme fails to reverse long-term disadvantage or support disadvantaged groups in sustainable ways. As discussed in the section on Prosperity, the travel and labour market benefits of road infrastructure largely accrue to drivers who are disproportionately white, middle-class, and male. Poorer people, women, and BAME (Black, Asian, Minority Ethnic) groups drive much less and thus will benefit much less from the Scheme. Spending limited public funds on projects which benefit the already privileged will only serve to increase inequality in Wales, while investments in public transport would work to close that gap.

4.2 Countering accumulations of wealth and power at the top

A more equal Wales needs to tackle the accumulation of wealth and power to allow prosperity to be dispersed more widely.

- The Scheme has not adequately addressed this aspect of the Act.
- It has not addressed how it plans to engage with social enterprises, co-operatives, or employee-owned businesses in its supply chain, which would better spread the wealth from public spending.
- Any economic gains in terms of employment from the transport benefits of the Scheme will accrue largely to already privileged groups (see Prosperity).
 - Outside large hauliers and businesses, there has been limited support for the Scheme.⁴⁶

4.3 Bringing up the bottom

A more equal Wales needs to address poverty, and the lack of wealth and opportunities for those worst off in society.

- The Scheme fails to address this aspect of the Act.
 - As already discussed, the economic and travel benefits of the Scheme accrues to more privileged groups and a region which is already one of Wales's most affluent.

5. A Wales of cohesive communities

Attractive, viable, safe, and well-connected communities.

Llywodraeth Cymru, Welsh government. (2015). Well-being of Future Generations Act (Wales).

5.1 Viable communities

A cohesive Wales has viable communities that can provide basic goods, services, and jobs locally.

- The Scheme has not demonstrated how it has considered its impacts on, or opportunities to improve, the provision of goods, services, and permanent jobs locally.
 - Motorways are designed for long-distance strategic journeys, and transport benefits from improving motorways encourage people to take these journeys by making them more appealing and convenient.
 - Encouraging strategic-journey motorways discourages people from working and consuming locally, and facilitates the concentration of employment and services in cities and regional centres.
- The Scheme will also require the demolition of commercial buildings. Owners will be financially compensated but businesses – particularly those who rent, rather than own, their premises – may be unable to find a new home and the community may lose valuable economic and public life.

5.2 Connected communities

A cohesive Wales needs people to be able to access local amenities which help communities connect to themselves, and provide good links to other parts of the country for recreation and internal tourism.

- The Scheme has failed to show how it will support communities with opportunities for residents to connect with each other.
- The Scheme will disrupt existing relations by demolishing houses and commercial buildings and replacing land in community use. It is unclear where replacement land will be, and whether it will offer the same or better opportunities for community life.
- The demolition and re-location of public life will be very disempowering for local communities, with whom the Scheme has failed to adequately engage thus far.

5.3 Safe communities

In a cohesive Wales, people feel safe and have a sense of belonging and support in their communities.

 The Scheme has not addressed how it will reinforce a sense of safety, belonging, and support in communities where it is disrupting, removing, and re-locating public spaces.

- The Scheme has failed to acknowledge the damage that could be done to social relationships which exist between community users of land, such as allotments and village greens, or consider how these relationships can be protected and helped to grow. ^{††,47}
- The destruction of valued public space may also undermine feelings of safety for the community as a whole, as the stability of its shared life is undermined. The Scheme has so far failed to prevent this by not adequately engaging with affected communities.

5.4 Attractive communities

A cohesive Wales has attractive communities that offer distinctive neighbourhoods reflecting local character, where people want to live and perceive as supporting a good life.

- The Scheme has included improvements to cycleways and pedestrian paths to increase opportunities for more enjoyable active travel.
- However, it has yet to present a plan for how it will engage local residents, designers, and artists in the design of the Scheme as it impacts their communities.

6. A Wales of vibrant culture and thriving Welsh language

A society that promotes and protects culture, heritage and the Welsh language, and which encourages people to participate in the arts, and sports and recreation.

Llywodraeth Cymru, Welsh government. (2015). Well-being of Future Generations Act (Wales).

6.1 Diverse culture and flourishing Welsh language

A culturally vibrant Wales is one where communities and ways of life are sustainable and cultural diversity also flourishes.

- While the Scheme will promote the Welsh language by complying with requirements that road signs are bilingual, it has otherwise failed to evidence how it will support local culture, and how it will ensure that negative impacts are properly mitigated.
 - There is no evidence of how the Scheme will directly promote culture, for example by supporting local artists and traditional builders and involving them in the design of the project and new public space.
 - The Sustainable Development Report notes that some commercial buildings will be demolished for the Scheme. It is not clear what social/cultural functions these buildings currently house, whether renters will receive any compensation, or if they will be able to find affordable, suitable premises nearby to relocate to.
 - The Scheme could also consider the impacts of improved travel times on markets for second homes in Wales. Increased second-home ownership is

^{††} It has been shown that involving communities in the management of shared green spaces improves social cohesion and reduces antisocial behaviour.⁴⁵

usually accompanied by a decline in local services, damaging the viability of established communities.

6.2 Natural and heritage sites

A culturally vibrant Wales requires protection and enhancement of natural, cultural, and historical heritage sites.

- The scheme will affect the Gwent Levels Landscape of Outstanding Historic Interest and demolish Magor Vicarage, an important local heritage site.
 - As the Cultural Heritage Mitigation Report notes, the efforts taken do not constitute mitigation, as the negative effects are neither reduced nor avoided.⁴⁸

6.3 Arts, sports, and recreation

A culturally vibrant Wales requires arts, sports and recreation being locally available, accessible, and affordable.

- The Scheme does not address how participation in arts, sports, and recreation can be more inclusive, for example by being locally available, accessible, and affordable.
- By improving journey times and reliability, the Scheme will make it easier for people to visit arts and sporting venues (Sustainable Development Report, 4.7.9). However, as discussed, the benefits of this will disproportionately accrue to more privileged people who are likely to already have the best access to these opportunities. They will have less of an effect on providing more opportunities for BAME and poorer people. Further, car travel encourages the concentration of activities in regional centres, moving them away from localities, further affecting those who are not able to travel.

7. A globally responsible Wales

A nation which, when doing anything to improve the economic, social, environmental and cultural well-being of Wales, takes account of whether doing such a thing may make a positive contribution to global well-being.

Llywodraeth Cymru, Welsh government. (2015). Well-being of Future Generations Act (Wales).

A globally responsible Wales should support global wellbeing through the sustainable consumption of resources, reduced greenhouse gas emissions, and a contribution to global knowledge on sustainability good practice.^{‡‡}

- The Scheme has failed to evidence how it would contribute to a globally responsible Wales.
 - The environmental objective of reducing greenhouse gas emissions per vehicle kilometre does not provide the correct focus of reducing ecological

^{‡‡} Welsh government's goals on reducing carbon and ecological footprints: http://gov.wales/topics/environmentcountryside/climatechange/publications/ecological-footprint-of-wales-report/?lang=en

- and carbon footprints, to bring consumption into line with Wales's fair share of resources.
- The cost-benefit analysis provides little clarity of how greenhouse gas benefits have been calculated, and does not clarify whether the calculations include embedded carbon in materials or the result of increased driving from induced demand.
- The Scheme also fails to engage with the question of making Wales a global leader in sustainable infrastructure, failing to build on examples of extensive, well-integrated, public transport systems that underpin sustainable travel in exemplar European cities such as Malmo (Sweden) and Freiburg (Germany).

Endnotes

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