

**Welsh Government
Department for Economy and Infrastructure**

Objection : M4 Corridor around Newport

Written Evidence submitted by T N D Anderson *BSc BA MSc FCILT*
Director, Pace Transportation Limited, Wales

1. Introduction

- 1.1 Pace Transportation Limited, based in Cardiff, Wales, is a sister company to Capital Traffic Management Limited (www.capitaltraffic.co.uk). The companies provide traffic and transportation consultancy services to the private, public and Third sectors.

Pace specialises in transportation spatial planning, and works with specialists in many disciplines to create comprehensive and integrated strategies designed to enhance the quality of life.

- 1.2 I hold degrees in economics and philosophy (University of Canterbury, New Zealand) and transport planning (University of Westminster, England). I am a Fellow of the Chartered Institute of Logistics and Transport. I am also an Associate Director of Capital Traffic, and was formerly employed by London Underground/London Transport.

Throughout my career spanning more than 35 years in transportation spatial and development planning, university research and lecturing and (in New Zealand) elected public office, I have been a proponent of a strategic approach to all public investment, of efficient public transportation, of people-first transportation policies and of environmental sustainability. My specialisms include information design, urban transit and freight-trams, interchanges and accessibility.

- 1.3 Under the aegis of Capital Traffic, we prepared a submission to the Inquiry on the proposed New M4, held by the Environment and Sustainability Committee of the National Assembly for Wales, in December 2013.

Our submission opposed the New M4 on two primary grounds, viz...

- 1.3.1 that the data for the existing M4 showed that traffic flows had peaked, and that traffic management (specifically dynamic speed controls) had been largely successful in reducing congestion to only short periods (*para 2.1* of our submission)
- 1.3.2 that any new parallel route to the M4 – whether Black Route, Blue Route or otherwise – would quickly fill up with induced traffic (*para 3.1*), and that it would undermine public transport in the corridor between the Severn crossings and Cardiff (*para 3.2*), including any proposals for that corridor in the plans for the Metro.

- 1.4 In our submission, we noted, *en passant*...

- 1.4.1 the gross environmental damage that would be caused to the Gwent Wetlands and the surrounding areas by the New M4
 - 1.4.2 the conflict between the proposed New M4 and the Welsh Government objective of reducing traffic
 - 1.4.3 that the cost of (heavy) rail track is about the same per kilometre as a lane of motorway, but the former can carry 8 – 20 times as many people (and a similarly high ratio of freight)
 - 1.4.4 the unsustainable nature of much road-based transportation compared with trains powered by renewably-generated electricity
 - 1.4.5 the lack of consideration given to any non-road alternative.
- 1.5 The present paper is an Objection to the Welsh Government's proposals *in toto* (as at <http://gov.wales/topics/transport/roads/schemes/m4/corridor-around-newport/?lang=en>).
- 1.6 Our Objection, reinforcing our earlier submission, focuses on four main areas...
- planning (section 2.)
 - transportation (sections 3. and 4.)
 - environment and sustainability (section 5.)
 - economics (section 6.)
- Our Objection is summarised in section 7.
- 1.7 My colleagues were consulted on both the submission and the present Objection.

2. Planning

- 2.1 There is no integrated transportation plan for Wales, in the sense of a set of national and regional objectives and prioritised measures aimed at achieving those objectives.
- 2.2 The deeply-flawed National Transport Plan - Consultation Draft (2014), has apparently been *forgotten*. However, the thrust of the Draft appears alive and well in the current thinking of the Welsh Government (WG), specifically in relation to the New M4.

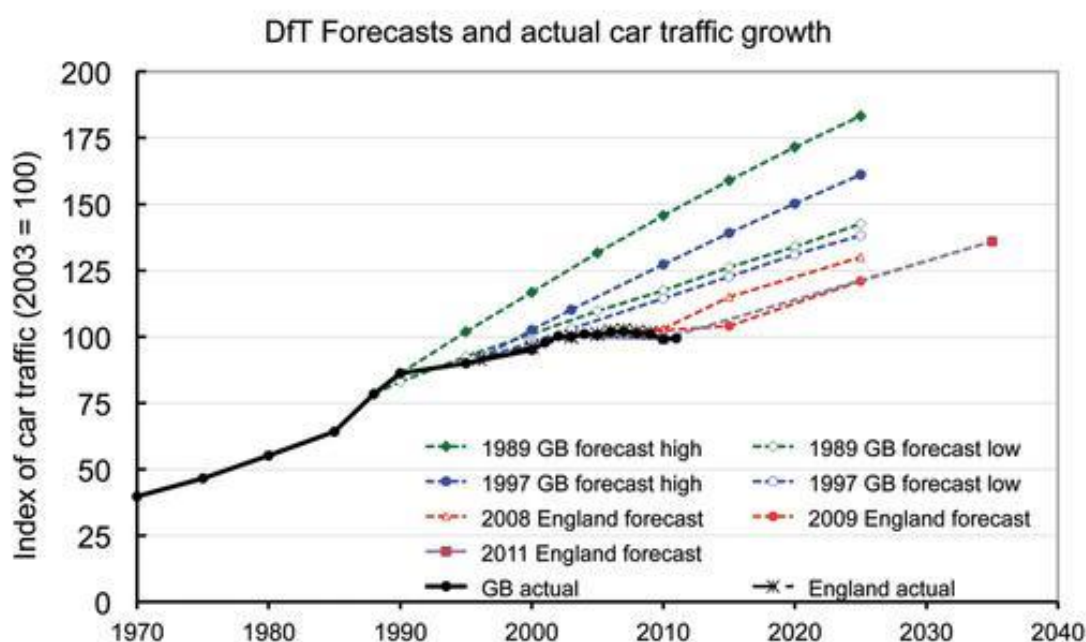
Pace had previously criticised the Draft as wholly inadequate in extensive submissions.

- 2.3 Instead, we have a National Transport Finance Plan containing a list of projects to be funded by the WG, seemingly disregarding of any coherent planning.

The question must be asked as to how exactly do these projects contribute to the well-being of the people of Wales? What is their context, apart from an apparent urge to Do Something?

- 2.4 There is no national database of passenger and freight demand by road and rail along the major Welsh transportation corridors in 2017, let alone projections for 2025, 2040 etc. How can rational planning occur without such data?

Admittedly, some routes, including the M4, have been studied, and traffic forecasts produced. Modelled using TEMPRO and other software, all such forecasts over the last decade by the WG and the Department for Transport invariably show strong growth in traffic volume.



As Mitchell (formerly TRL) commented...

...anybody, just anybody, looking at this graph is going to think that there is a downside risk of the long term traffic flows being substantially less than the forecasts, as they have continually been for at least the last quarter of a century.

www.iammotoringfacts.co.uk/ cited in

www.bettertransport.org.uk/campaigns/roads-to-nowhere/ltt-130412

Needless to say, the predicted growth has not occurred.

- 2.5 Transportation professionals now recognise the phenomenon of induced traffic – traffic generated by the provision of a new or wider road. Within a year such new roadspace fills up and the previously congested conditions return.

It has become obvious that we cannot build our way out of congestion. The WG shies away from suggesting that the New M4 is a response to the mild congestion now present around the Brynglas tunnels.

- 2.6 Criticism of the presumption of continuous growth in traffic volume has also reached the mainstream media (though that magazine might be insulted to be considered so!)...

The Treasury's Plan for "the biggest investment in roads since the 1970s" is at odds with the trend of falling traffic, so mandarins have used outdated assumptions to conjure up road forecasts of massive traffic growth.

Private Eye (#1345, 26 July – 08 August 2013)

- 2.7 There is much contemporary discussion about *Peak Oil* and *Peak Car*, the latter now much in evidence throughout the developed world. Young people are exhibiting a choice to be connected by *wifi* rather than by cars.

Car use has reached its peak and is indeed declining in the most dynamic large cities, where digital technologies seem more attractive than clunky cars.

Peak Car: The Future of Travel Metz (2014)

Car use has declined in all UK demographics. Travel opportunities may be near saturation.

- 2.8 Goodwin identifies the...

...financial risk if the forecasts are overestimates, and reputational damage if they are correct or underestimates –[that] suggest that the ideas will evolve over the next year or so... into something else. The 'something else' could be in one of two pro-active forms. First, it could be a real road pricing scheme with a much greater public, rather than private, focus, for the traditional reasons of tax revenue and travel demand management, rather than road expansion. The second possibility would be to evolve into more and more extravagant guarantees, ending in a PFI-like scheme which risks paying substantially too much to the private providers. Both options are currently very unattractive politically. So a third, passive scenario could then emerge

from the gloom – well, since traffic is rather stable, maybe it is better just to let the issue lie for a while.

www.bettertransport.org.uk/campaigns/roads-to-nowhere/ltt-130412

In the case of the M4 corridor, the WG appears to be following the second scenario. In the light of the evident success of the variable speed limits imposed on the approaches to the Brynglas Tunnels (reduced incident rates and delays), we contend that it would be at least more prudent to follow the third.

- 2.9 In a recent submission to the House of Commons Transport Committee Inquiry on Urban Congestion, Dr David Metz, a former Chief Scientist at the Department for Transport, commented on investment appraisal as follows...

The orthodox approach to investment appraisal focuses on the time savings to users that result from faster travel. This, however, is misleading, particularly in an urban context. As noted above, average travel time is invariant, as observed in the National Travel Survey. This means that there are no times savings in the long run, which is the appropriate perspective for investment in long lived transport infrastructure.

<http://data.parliament.uk/writtenevidence/committeeevidence.svc/evidencedocument/transport-committee/urban-congestion/written/44061.html>

Modelling by the Welsh Government uses a similar methodology.

We contend, however, that the often marked variation in end-to-end travel time is such that time-savings on *inter-urban travel as well* make such savings illusory. There are, and always will be delays on major roads caused by road works, incidents, the *dynamic congestion* of platooning vehicles and clustering of slower traffic, as well as congestion at occasional pinch-points.

Furthermore, the notion of travel time-savings has been confused by the use of in-vehicle communications (legal and illegal). They have largely disappeared from similar calculations for rail travel because of the extensive use of IT devices by passengers, particularly during commuter journeys.

- 2.10 That certain favoured projects (eg. the New M4) might be supported and financed based on a standalone positive business case is largely irrelevant. There are no comparators, so that projects in mid-Wales or North Wales, say, never achieve appropriate priority and funding.

Any half-decent consultant can contrive a positive business case for a project favoured by a Client.

While it is often claimed that benefit-cost and similar calculations are valid because they compare alternatives under the same set of assumptions and imputed values, they are inherently subjective. Typically, they undervalue often difficult-to-quantify elements, notably environmental values.

- 2.11 Such projects as the New M4 are therefore random shots in the dark, a product of the Do Something/Do Anything school of planning, often prodded by business interests.

They show the Welsh Government to be leaping from one apparently plausible scheme to another – usually in South Wales - in response to private sector lobbyists and external consultants, and the whims of ministers. And this without regard to the pressing and more obvious needs for investment, especially in productive capacity and sustainable infrastructure throughout Wales.

- 2.12 The recent hollowing out of WG departments, largely driven by austerity policies, has created an exodus of often highly-skilled staff with an important institutional memory and planning capacity.

The WG relies on external consultants to an alarming degree, and to much greater cost. Good news for consultants perhaps, but not for the governance of Wales. It is apparent that there is a shortage of key skillsets within the WG in respect of planning (and transportation).

- 2.13 Reflecting the small size of the National Assembly and the consequent workload on Assembly Members, as well as the lack of specialist independent advice available to them, scrutiny is often limited. Despite the often poorly researched projects advanced by successive administrations, the National Assembly has often failed to hold the WG to account.

Consequently, much public finance has been wasted on schemes that do not relate to the well-being of future generations in Wales, let alone those currently suffering from poverty and deprivation.

- 2.14 The suggestion in the WG's case that states that the New M4 – the bypass of a bypass - will make road transport in Wales more efficient is risible.

Efficiency is largely absent from the sector. It is so low – by any measure – that major increases in roadspace have made minuscule improvements, if any.

3. Transportation - Overview

- 3.1 Because *some* transport has been universally recognised as *a good thing*, we make the mistake of assuming that *more* transport will be *better*.

It is said that the areas in the UK with the most roads have the *lowest productivity*. We contend that parts of the UK have reached points of diminishing returns from new highways investment (other than in maintenance).

We urgently need a deeper understanding of the impacts of highways and transportation on our society and on our economy.

- 3.2 The returns on investment in transportation infrastructure may not be as promising as their business cases once suggested, notably if whole-life and environmental costs are fully accounted for. This may also be the case for much other infrastructure, especially that in which the private sector will not invest.

In a recent submission to the House of Commons Transport Committee, I observed that...

- “5.8 When substantial amounts of public funds can so readily be expended on unproductive and/or sub-optimal projects with very large long-term costs (in maintenance at least) not fully factored in, it is hardly surprising that the UK has such low productivity.

Much more analysis is required to understand where and to whom the benefits and disbenefits will accrue. Which projects will move the UK further away from the inequality that the Prime Minister has noted, and which closer to it? Has that question even been asked?”

<http://data.parliament.uk/writtenevidence/committeeevidence.svc/evidence/document/transport-committee/urban-congestion/written/44334.html>

- 3.3 Road-based modes create major negative impacts on the environment from pollution from combustion products, the tyre-road interface and runoff from roads. There is often consequential damage to human and wildlife habitats. They require the extraction and depletion of non-renewable natural resources.

Vehicles are responsible for the deaths and serious injury of thousands of our fellow citizens every year. Roads have displaced and severed communities, and traffic has disturbed sleep and increased stress.

Motor vehicles are inimical to, and parasitic on other transportation modes. Walking and cycling along roads is dangerous, and mass transit – except in London – is invariably poorly resourced. In encouraging low-density development, motor vehicles undermine access while necessitating mobility, and, in effect, reduce accessibility for all.

Highway investment promotes the least efficient transportation technology ever invented. As travel distance is correlated to income, it is the already well-off – usually white, middle-

aged men – who benefit the most from new roads. That it is usually members from this demographic that promote and plan highways is, no doubt, coincidence.

- 3.4 Investment in new highways can still have beneficial impacts, but in many cases their disbenefits outweigh them.

One might also note the geographic separation between the locations of the beneficiaries and where the disbenefits are often incurred... But this point is likely to be avoided by those with a financial stake in the investment – infrastructure providers, consultants etc – for whom highways are *bread and butter*.

- 3.5 In my submission to the HoC Inquiry (*ibid*), I noted that the...

“3.7 ...inefficiency of the dominant modes gives rise to massive cost and unproductive use of time. Consider the 40 million people who commute to work or schools every weekday morning, expending time, money and energy (both human and mechanical) before anything has been produced!”

One might add patience!

We contend that transportation – now so much of it – has undermined productivity. As the time and effort spent on transportation infrastructure and operation by the UK rises, production and productivity declines.

- 3.6 Finally, we respectfully remind the Welsh Government that one of its planning objectives is to reduce unnecessary traffic...

...minimising the need for travel while maximising the opportunities to do so...

The Welsh Government aims to extend choice in transport and secure accessibility in a way which supports sustainable development and helps to tackle the causes of climate change by...encouraging a more effective and efficient transport system, with greater use of the more sustainable and healthy forms of travel, and minimising the need to travel...this will be achieved through integration... within and between different types of transport...

Planning Policy Wales Edition 5 Chapter 8 Transport

We challenge the Welsh Government to show any evidence of their success in minimising the need for travel to date, to explain how they plan to keep doing so, and to demonstrate how the New M4 proposals would contribute to that objective.

4. Transportation – The New M4

- 4.1 Transportation has distributional effects. For example, any traffic engineer, citing their Gravity Model, would immediately assume that the major beneficiary of the New M4 would be Greater Bristol (population 1.6m) rather than Cardiff (population 0.5m).

The WG will present evidence to the Planning Inspector on this issue. We strongly suspect that the balance of benefits of the New M4 would lie mostly with England, rather than Wales. We ask, if this is the case, why is the WG proposing to build infrastructure in Wales for the primary benefit of England? Will Bristol and South Gloucestershire be asked to contribute to its cost?

- 4.2 If, on the other hand, the claim is made that this infrastructure will defy the Gravity Model and clearly favour Wales over England, this will follow the precedent of HS2.

Almost all major highways and highways in the south of the UK focus on London, which benefits handsomely from them in terms of commuting, distribution, commerce etc. However, it has been asserted that HS2 will work the other way around – it will benefit the North! Pace regards this assertion as risible. Ditto, in respect of the New M4 and Wales.

- 4.3 The WG does at least claim that a major proportion of the benefits of the proposed New M4 would favour Cardiff. Will increased traffic on Cardiff's often congested roads be considered a benefit?

Perhaps we could hear more about the nature of these benefits, and specifically to whom they would accrue? And about any disbenefits...

- 4.4 Not mentioned in this context is Newport, implying that the benefits to that city would be small. We concur. However, the disbenefits from the proposed New M4 to Newport and its residents would be substantial...

- the loss of significant open space and wildlife habitats near the city
- the visual intrusion of a very large bridge, its approaches and its year-round shadow of most of the city
- the creation of another pollution plume, originating on the windward (south/southwest) side of the city
- the health impacts of the plume for those with respiratory illnesses and children at home and school, as well as the newly-identified link with dementia
- the reduced air quality and its impact on the social and economic life of the city.

It is extraordinary that many Newport interests have been ambivalent towards, even supportive of, the New M4 proposal. Perhaps the Planning Inspector might enquire as to

how seriously Newport City Council, say, considers the above issues to be?

- 4.5 The WG suggests that the proposed South Wales Metro might capture 4% of M4 traffic. This is hardly significant, but serves to demonstrate, *inter alia*, that the Metro is not being designed to achieve modal shift.

That there is no link between these two major proposed investments is indicative of the planning deficit in Wales.

- 4.6 Of more concern is the potential impact of the proposed New M4 on public transportation in the Cardiff - Bristol corridor. It would undermine both bus and rail services.

It is currently proposed that rail services be expanded, with more stations between Cardiff and Severn Tunnel Junction, and that the Great Western railway be electrified.

Higher subsidies and/or higher fares are likely to become necessary for passengers in Wales, the latter already crippling bus ridership.

- 4.7 A consortium, led by Pace, is proposing a low-cost tram system for Cardiff. One route would extend to Newport along Newport Road and the A48, and then to Llanwern and Magor. We estimate that a well-designed tram system, and fewer new heavy rail (HR) stations, (in conjunction with reduced parking in Newport and Cardiff city centres) could reduce traffic on the M4 by up to 20%.

The New M4 is a threat to the tram proposal, and will contribute further to sub-optimisation of transportation networks in South Wales.

- 4.8 Broadband is the both the fastest and cheapest form of transportation. Commerce increasingly relies on the transfer of information. Home-based internet businesses have huge promise.

Given the potential for reducing traffic, especially during peak hours along major routes, by investing wholeheartedly in IT to encourage home- and remote working, one can only assume that the broadband lobby is not as influential as the highway advocates within the WG.

- 4.9 Should the proposed new M4 be constructed, the likely outcomes would be...

- induced traffic generation to the point where the M4 would just be as congested as now within 12months of opening
- more air pollution with increased impacts on health, especially in Newport
- the WG under financial pressure because of the costs of the transportation and other physical infrastructure it has chosen to support
- high opportunity costs for investments with better returns being forsaken

- further cuts in social programmes.

5. Environment and Sustainability

- 5.1 A curious and regrettable feature of the successive proposals for the New M4 (and other highways in Wales) has been the extraordinary willingness of the WG to set aside scientific and wildlife habitat designations in areas proposed for development including highways.

One might consider that such unique natural assets are regarded as simply road reserves by the WG!

- 5.2 As the previous Director-General of the United Nations, Ban Ki-moon, said...

...business as usual is not an option

- if we wish to achieve our sustainable development goals
- if we wish to contain climate change to less than 2°C.

www.timesofmalta.com/articles/view/20110115/opinion/that-business-as-usual-stand.345422

The proposed New M4 is very much *business as usual*.

Claims about improved air quality, for example, by WG consultants need to be set against the reports by the world-renowned Tyndall Centre.

www.wtwales.org/sites/default/files/ghg_and_m4_relief_road_finalv4_sept2015.pdf

- 5.3 The Well-being of Future Generations (Wales) Act 2015 is rightly proclaimed as being focused on...

improving the social, economic, environmental and cultural well-being of Wales.

<http://gov.wales/topics/people-and-communities/people/future-generations-act/?lang=en>

The WG claims that the proposed New M4 conforms to the principles of the Act. Surely, if a motorway can conform, is there anything that cannot?

There is no indication that the advent of the Act has altered the WG perspective towards its favoured high-carbon projects.

- 5.4 It does not appear that the WG is taking its responsibilities towards the natural environment, nor its own legislation, seriously enough.

We are reminded of Augustine of Hippo (354 – 430)...

Oh Lord, give me [sustainability], but do not give it yet.

6. Economics

- 6.1 It has been claimed that the New M4 would be beneficial to the economy of South Wales, even West Wales. Any benefit to the economy of Greater Bristol is seldom mentioned in media contexts. The following is typical...

Ministers believe the road will provide a significant boost to the South Wales economy. The Government has repeatedly been urged to deliver infrastructure investments for Wales, with business organisations highlighting improvements to the M4 around Newport and the electrification of rail lines in South Wales as key to the nation's economic prosperity.

www.walesonline.co.uk/news/wales-news/new-m4-relief-road-toll-2514377

The previous Prime Minister, David Cameron, even claimed that the Brynglas Tunnels were...

...a real foot on the windpipe of the Welsh economy...

www.southwalesargus.co.uk/news/10780574.Prime_Minister_David_Cameron_says_it_s_time_to_get_on_with_M4_relief_road/

- 6.2 But such delays that there were at the tunnels are comparable to Cardiff or Milford Haven being located a few kilometers to the west! Surely this issue has become wildly exaggerated?

Nevertheless, and putting the evidence to one side, the New M4 has become totemic for business interests. The CBI asks, is the WG pro-business or not? It is risible to imply that this is the most important issue facing business in South Wales! But such intense lobbying has the potential to destroy rational decision making.

Meanwhile, the better-advised Federation of Small Businesses Wales, does not accept the case for the New M4.

- 6.3 More dispassionate observers might reflect on the advent of variable speed controls on the M4 near the tunnels, and the consequential reductions in delays and incidents.

They might also wonder why further improvements have not been made by the WG to reduce delays...

- more sophisticated management of the speed controls
- improved traffic management in terms of individual lanes and route guidance
- better lighting in the tunnels.

These could all be achieved for about 1% of the cost of the proposed new M4.

Furthermore, the WG's own data shows that by closing selected junctions with the M4, traffic could be reduced by 5%, which would be helpful at peak times. Yet this has not occurred either.

- 6.4 There are substantial doubts about the economic impacts of strategies that promote investment in transportation infrastructure. I have drawn attention to these elsewhere (HoC Transport Committee Inquiry on Urban Congestion 2017 *op cit*), viz.

"5.5 For much of the latter half of the twentieth century, a very high correlation existed between (surface) transport volume growth and economic growth. It was tempting for politicians, and self-serving for the construction sector, to believe that not only was the relationship causal, but that highway and railway investment would increase economic growth. The former has proved counter-productive, while the latter is elusive.

- 5.6 In recent years, transport volume growth has levelled off, while economic growth has continued. The issue was stated most succinctly in the Open Letter written by 32 Professors of Transport in 2013 to the then Secretary of State for Transport, confirming that...

Recent evidence from the UK and internationally shows signs of road traffic growth levelling off, even after accounting for lower than anticipated economic growth... which the Department for Transport has never forecast...

Nevertheless, the DfT's models continue to predict rising traffic growth with continuing economic growth. Second, the professors noted...

*...a range of views as to the importance of new transport infrastructure in stimulating economic growth. **The evidence base is not as strong as you, or we, might wish it to be.***

Where real and substantial gains in connectivity and accessibility can be achieved...the potential to unlock employment seems clear.

As the 2006 Eddington Review pointed out however, the UK is already comparatively well connected, rendering the employment gains promised for many schemes difficult to realize [emphasis added].

(www.bettertransport.org.uk/blogs/roads/210113-profs-letter)"

The implications of the Letter suggest that investment in transportation infrastructure (notably highways and heavy rail) will not produce much, if any growth or many jobs.

Yet, plainly, the WG believes...

- 6.5 Perhaps the WG might be encouraged to review the progress that has been achieved by their past investments in transportation infrastructure. Is there evidence in Wales to support their belief?

Does the A40/Heads of the Valleys Road or the A449 demonstrate how new and thriving businesses have been created along their lengths? Did the Second Severn Crossing bring prosperity to areas east of Newport? Is Newport, surely the best-connected city in Wales, a beacon of economic progress? And what about the huge EU investment in roads in the Valleys – funds squandered, or funds well spent?

- 6.6 Should the proposed New M4 *improve access*, and should the bridge tolls be reduced (or eliminated), further disincentives to employment beyond Wales would decrease.

While we are not suggesting that individuals should not pursue their best employment prospects, it is another matter for the Welsh Government to be actively facilitating access to employment or shopping in Aztec West, Filton or Cribbs Causeway at a cost to our own economy.

- 6.7 Historically, the major transport routes in Wales have been east-west. But the traffic has never been evenly balanced – wealth and opportunity has gone east.

No longer exporting much mineral wealth (the most valuable deposits have been exhausted), its major export is now people – our best and brightest head for Manchester, London and Bristol every weekday.

They contribute to the GVA of where they work – not to that of Wales. True, they may spend a proportion of their salaries in Wales. However, policies that act to encourage commuting out of Wales for work impoverish this country by reducing our GVA/capita.

- 6.8 If it is transport capacity we need in Wales (and some doubt it), we need to understand that a kilometre of motorway lane costs about as much as a kilometre of railway track.

However, the capacity of rail is 8 – 20 times that of roads for passengers (Newman), and similar for freight (Lesley). Highways are high-carbon investments, while railways need not be. Clearly, rail offers much better value for money.

Heavy rail will always be more efficient than inter-city motorways, and on-street light rail more efficient than buses and cars in urban areas. In time, we envisage high-speed trams operating on motorways.

- 6.9 Taxpayers might expect that governments would invest where the need was greatest, and/or where the returns are best and/or where the benefits were immediate and obvious.

Clearly, the WG is playing a subtle game!

There appears to have been no consideration of alternatives. Yet well-planned public transport could reduce traffic on the M4 and increase efficiency. Similarly, prioritisation of broadband deployment would reap much greater rewards than a bypass of a bypass.

- 6.10 It is understood that the proposed New M4 may be financed in part by a loan from Westminster. This begs the question of when the loan would be repaid, and how?

The balance (£0.6 – 1.6b, depending on which estimate one believes) would come from WG funds. No repayment required there!

Just reduced funding for schools, hospitals and care homes...

- 6.11 The opportunity costs of the New M4 are indeed substantial. A minimum of £1.1b (some say the outturn cost would be double that) would fund many more and very worthwhile projects over the whole of Wales to much greater effect. And fewer disbenefits.

Almost any social investment would provide a better return than investment in transportation infrastructure. Just as pertinent is to whom the benefits of each would accrue – the first directly to real people in Wales, the second indirectly and nebulously to...whom exactly?

31% of children in Wales live in poverty. How exactly are their lives to be improved by a highway and a bridge either a few or many kilometres away, compared with, say, higher wages for their parents, or better salaries for their teachers, doctors, nurses and care workers?

The disconnect is palpable, and the WG should review its investment priorities.

- 6.12 While any expenditure will have multiplier effects that may be beneficial to specific and/or local areas, with variable duration and intensity over the life of a project, the major return would be to the suppliers of the raw materials for the components.

In the case of the New M4, and despite what procurement strategy is utilised, these are likely to be company shareholders who are not based in Wales.

So funds that may come into Wales (from the UK Government) will quickly flow out again.

- 6.13 The saddest part of the New M4 saga is the willingness of the WG to again tradeoff a few minutes' travel time against substantial environmental damage during both its construction and operation. This would prove self-defeating for our country.

With climate change and species loss, humankind is beginning to learn that we cannot harm our environment without the environment harming us.

- 6.14 Unfortunately, the WG is a slow learner, and very reluctant to recognise that the game has changed. Economic growth, always difficult to generate, will be lower for the remainder of this century than for the previous (Piketty). All the cheap resources have gone, and no amount of road-building would assist.

When my information changes, I alter my conclusions. What do you do, sir?

J M Keynes (attrib)

The challenge for the WG to understand more, respect the environment more, pay more than lip service to their own legislation (eg. Active Travel, Well-being of Future Generations), and to focus on social infrastructure.

6.15 Where is the benefit to Wales, from a new road and a new bridge that we do not need?

7. Conclusions

7.1 Over the decades since the proposed New M4 was first conceived, the Welsh Government has not initiated any effective policies or strategies designed to...

- promote housing development and street patterns that would facilitate efficient public transportation use
- increase the number of passengers/vehicle, encourage modal shift or reduce trip distances
- reduce car park provision in urban centres and at workplaces in Wales.

In a complete failure of spatial and transportation planning, the Welsh Government are continuing to commit commuters and travellers to high-cost travel by inefficient road-based modes (cars, buses) that also have large-scale environmental impacts.

7.2 The Welsh Government now proposes to perpetuate and compound our reliance on inefficient and damaging motor vehicles by constructing the proposed New M4, and an egregious bridge that would blight Newport.

That investment in highways benefits the already well-off undermines the drive towards a more equal society.

7.3 The assumed benefits from the New M4, even to people living along the relatively well-off southern coast of Wales and close to it, would be negligible, if either detectable or measurable.

There is no distributive mechanism in place that could ensure that any benefits would reach those most in need.

7.4 The Welsh Government purports to believe that their sustainable development goals, and the objectives of the Well-being of Future Generations Act are met by constructing motorways, in this instance, the proposed New M4.

This strains the credibility of the Welsh Government beyond breaking point.

7.5 The Welsh Government exists in a time-warp, as if climate change is not happening, as if air pollution is not damaging the health of our people, and as if sustainability is a luxury.

- 7.6 The economic growth the Welsh Government is attempting to achieve by funding physical, and especially transportation infrastructure will be elusive.

It is social infrastructure that our country desperately needs.

- 7.7 To permit the construction of the proposed New M4 would be a powerful endorsement of *business as usual*, and give licence to the Welsh Government to continue on an unsustainable pathway.

- 7.8 The Paris Agreement on climate change commits the UK Government to make a *nationally determined contribution* (NDC) that is *ambitious and represent[s] a progression over time... with the view to achieving the purpose of this Agreement (ie. to hold the increase in the global average temperature to well below 2 °C above pre-industrial levels)*.

All organs of government in the UK will be expected to facilitate the achievement of this and related targets.

To decline the planning application by the Welsh Government to construct the proposed New M4 would respect the overwhelming case against it. This case rests on many grounds, some of which are outlined herein.

Refusal would create a new opportunity for Wales to achieve the intentions of its pioneering legislation, and move towards a sustainable and equitable society and economy, while adhering to the spirit of an extremely important international agreement.

Cardiff, Wales
07 February 2017