

Adran yr Economi a'r Seilwaith  
Department for Economy and Infrastructure



**WG/REB/OBJ6905- Neil Anderson**

**Objection Ref OBJ6905**

---

Llywodraeth Cymru  
Welsh Government

**Response to Objector's Evidence: Neil Anderson**

(Pace Transportation Ltd)

## **1. GROUNDS FOR OBJECTION**

### **1.1. Details**

- 1.1.1. Neil Anderson has submitted a Statement of Evidence dated 7 February 2017 in relation to the draft statutory Orders associated with the Welsh Government's proposals for the M4 Corridor around Newport, which has been received via the Programme Officer.
- 1.1.2. The Welsh Government understands the evidence submitted within his Statement to be based on the following:
1. Stated that there is no national database of passenger and freight demand by road and rail along the major Welsh transportation corridors in 2017, considering the projections for 2025, 2040 etc.
  2. Stated that traffic growth forecasts showing growth traffic volumes do not represent growth that has actually occurred.
  3. Concerned that there will be induced traffic generated by the provision of a new or wider road. Within a year such new road space fills up and the previously congested conditions return.
  4. Stated that car use has declined in all UK demographics. Travel opportunities may be near saturation.
  5. Stated 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.
  6. Stated that 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.
  7. Concerned that there are no comparators, so that projects in mid-Wales or North Wales, say, never achieve appropriate priority and funding.
  8. Concerned that road-based modes create major negative impacts on the environment from pollution from combustion products, the tyre-road interface and runoff from roads.
  9. Stated that vehicles are responsible for the deaths and serious injury of thousands of our fellow citizens every year.

10. Concerned that transportation has distributional effects and suspect that the balance of benefits of the New M4 would lie mostly with England, rather than Wales.
11. Raised the issue whether increased traffic on Cardiff's often congested roads will be considered a benefit.
12. Stated that there are substantial disbenefits from the M4 to Newport and its residents including the loss of significant open space and wildlife habitats near the city.
13. Stated that there are substantial disbenefits from the M4 to Newport and its residents including the visual intrusion of a very large bridge.
14. Stated that there are substantial disbenefits from the M4 to Newport and its residents including the creation of another pollution plume.
15. Stated that there are substantial disbenefits from the M4 to Newport and its residents including the health impacts of the plume for those with respiratory illnesses and children at home and school.
16. Concerned that the proposed New M4 would impact on public transportation in the Cardiff - Bristol corridor. It would undermine both bus and rail services.
17. Concerned that the New M4 is a threat to a low-cost tram system for Cardiff and will contribute further to sub-optimisation of transportation networks in South Wales.
18. Concerned about the impact and setting aside of scientific and wildlife habitat designations in areas.
19. Claimed about improved air quality, for example, by WG consultants need to be set against the reports by the world-renowned Tyndall Centre.
20. Stated that the Welsh Government falsely claims that the proposed New M4 conforms to the principles of the Wellbeing Act.
21. Stated that there are substantial doubts about the economic impacts of strategies that promote investment in transportation infrastructure. Is there evidence in Wales to support their belief?

22. Stated 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, and similar for freight.
23. Raised the issue of improving the lives of people 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.
24. Stated that there is no integrated transportation plan for Wales, the National Transport Finance Plan was containing a list of projects to be funded by the Welsh Government, was seemingly disregarding of any coherent planning.
25. Stated that the M4 is a product of the do something do anything school of planning, often prodded by business interests.
26. Challenged 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.
27. Raised the issue of not having been made any improvements to the Brynglas Tunnels such as management of speed controls, individual lanes route guidance, better lighting.
28. Concerned that there has been no consideration of alternatives.

## 2. REBUTTAL

### 2.1. Points Raised

2.1.1. Some of the above points have already been addressed in previous correspondence. Others are dealt with by topic by the relevant witness in the following sections, in addition to their general proofs of evidence, to which readers should also make reference in their entirety for a full understanding of the Welsh Government's case. For ease of reference the places where the above points are addressed in this Rebuttal are listed in the table below:

Objector's point reference	Rebuttal paragraph reference	Objector's point reference	Rebuttal paragraph reference
1	2.3.1	15	2.1.2
2	2.3.2	16	2.3.8
3	2.3.3	17	2.3.9
4	2.3.4	18	2.1.2
5	2.3.5	19	2.1.2
6	2.2.1	20	2.1.2
7	2.2.4	21	2.2.4
8	2.1.2	22	2.1.2
9	2.3.6	23	2.1.2
10	2.2.3	24	2.1.2
11	2.3.7	25	2.1.2
12	2.1.2	26	2.1.2
13	2.1.2	27	2.1.2
14	2.1.2	28	2.1.2

2.1.2. The Objector's points that have already been covered in proofs of evidence are as follows:

1. **Points 8 and 12** (Concerned that road-based modes create major negative impacts on the environment from pollution from combustion products, the tyre-road interface and runoff from roads), (Stated that there are substantial disbenefits from the M4 to Newport and its residents including the loss of significant open space and wildlife habitats near the city) / The effect of building and operating the new section of motorway on the environment is set out in the Environmental Statement (Document 2.3.2) and its Supplements (Documents 2.4.4 and 2.4.14). The Environmental Statement clearly identifies the magnitude and significance of effects on a wide range of environmental features and assets.

2. **Point 13** (Stated that there are substantial disbenefits from the M4 to Newport and its residents including the visual intrusion of a very large bridge) / The extent of visual intrusion into Newport is described in Chapter 9 of the Environmental Statement (Document 2.3.2). Whilst adverse visual effects are noted, the River Usk Crossing can also be considered as a positive addition to visual amenity from some locations, including Belle Vue Park. The effects on visual receptors are described in Chapter 9 and Appendices 9.7 - 9.12 of the Environmental Statement.
3. **Points 14 and 15** (Stated that there are substantial disbenefits from the M4 to Newport and its residents including the creation of another pollution plume.), (Stated that there are substantial disbenefits from the M4 to Newport and its residents including the health impacts of the plume for those with respiratory illnesses and children at home and school) / Proof of Evidence of Michael Bull, WG 1.12.1 paragraph 1.2.4 and detailed in Appendix A.
4. **Point 18** (Concerned about the impact and setting aside of scientific and wildlife habitat designations in areas) / The effect of building and operating the new section of motorway on the environment is set out in the Environmental Statement (Document 2.3.2) and its Supplements (Documents 2.4.4 and 2.4.14). The Environmental Statement clearly identifies the magnitude and significance of effects on a wide range of environmental features and assets.
5. **Point 19** (Claimed about improved air quality, for example, by WG consultants need to be set against the reports by the world-renowned Tyndall Centre) / The Tyndall Centre Report was written by Professor Kevin Anderson. We are providing a response on all carbon aspects of his objection separately. Please refer to the evidence of Tim Chapman, WG1.13.1, for further information about carbon matters.
6. **Point 20** (Stated that the Welsh Government falsely claims that the proposed New M4 conforms to the principles of the Wellbeing Act) / Proof of Evidence of John Davies, WG 1.23.1 paragraphs 26-48 addresses the Well-being of Future Generations Act 2015.
7. **Point 22** (Stated 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, and similar for freight) / The South Wales Metro and public transport improvements have been taken into account as set out in section 9 of Matthew Jones's evidence, WG1.1.1, and further explained in the evidence of Bryan Whittaker, WG1.2.1.

8. **Point 23** (Raised the issue of improving the lives of people 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) / Proof of Evidence of John Davies, WG 1.23.1 paragraph 46 deals with the Welsh Government's well-being objectives relating specifically to the importance of improving prosperity, tackling poverty and reducing inequalities, whilst paragraphs 170-197 set out the economic arguments. Further information is provided by Stephen Bussell (economics) at 2.2.4 of this document. It is not for the inquiry to adjudicate on the relative merits of different forms of public expenditure – Bushell principle.
  9. **Point 24 and 26** (Stated that there is no integrated transportation plan for Wales, the National Transport Finance Plan was containing a list of projects to be funded by the Welsh Government, was seemingly disregarding of any coherent planning), (Challenged 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) / Proof of Evidence of Matthew Jones, WG1.1.1 sections 3 and 9.
  10. **Point 25** (Stated that the M4 is a product of the do something do anything school of planning, often prodded by business interests.) / Proof of Evidence of Matthew Jones, WG1.1.1 sections 3 and 8.
  11. **Point 27** (Raised the issue of not having made any improvements to the Brynglas Tunnels such as management of speed controls, individual lanes route guidance, better lighting) / Proof of Evidence of Matthew Jones, WG1.1.1, sections 3 and 23.
  12. **Point 28** (Concerned that there has been no consideration of alternatives) / Proof of Evidence of Matthew Jones, WG1.1.1 section 3 and 23.
- 2.1.3. The other points are responded to by specialist topic in turn in the sections following.

## 2.2. Stephen Bussell (Economics)

2.2.1 Response to **Point 6** (Stated that 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):

1. The valuation of travel time savings was the subject of a major review and consultation exercise undertaken by the Department for Transport in 2015<sup>1</sup>. The resultant values of time were incorporated into WebTAG guidance in July 2016 and the economic appraisal of the Scheme has been undertaken on the basis of the updated values. The Department for Transport's work on values of travel time savings takes into account opportunities (enabled by technology) for travellers to use time spent in transit more productively. The Department for Transport also found that 'while the use of mobile technologies has increased, not all travel time is used productively, even on rail trips where the opportunities to work whilst travelling has been most affected by technological developments...whilst travel time is not 'dead time', it is not necessarily as productive as other 'work time'.

2.2.2 Response to **Point 7** (Concerned that there are no comparators, so that projects in mid-Wales or North Wales, say, never achieve appropriate priority and funding):

1. The purpose of the Scheme's economic appraisal (Document 2.4.12) is to assess the value for money of options that address the specific problems and objectives that the Scheme is trying to address. There is no requirement to appraisal alternative options that meet some other objectives.

2.2.3 Response to **Point 10** (Concerned that transportation has distributional effects and suspect that the balance of benefits of the New M4 would lie mostly with England, rather than Wales).

1. The economic appraisal of the Scheme (Document 2.4.12) does not explicitly deal with the distribution of benefits. The relationship between

---

<sup>1</sup> Understanding and Valuing Impacts of Transport Investment: Values of Travel Time Savings (October 2015)



transport and the economy is complex and it is difficult to be precise about how economic benefits will be distributed spatially. We can draw inferences about the distribution of user benefits based on the origins and destinations of trips that would benefit from the new motorway, although even this needs a note of caution because of the way transport cost savings may be 'transmitted' from one firm to another through the supply chain.

2. Notwithstanding this complexity, our analysis indicates that over 70% of direct transport cost savings for business and goods vehicles would accrue in Wales. For commuters and other non-work car travel, the proportion of benefits accruing in Wales is roughly 80%. Residents and businesses in Bristol and Gloucestershire who use the M4 will also benefit from the Scheme. Responsibility and funding for the highway network in Wales is devolved to the Welsh Government. Bristol and Gloucestershire (presumably the City and County Councils) are not being asked to contribute to its cost. Equally, the Welsh Government does not contribute to the cost of transport improvements which benefit residents and businesses in Wales for which it does not have responsibility. This applies both the infrastructure located in England and in Wales (such as the Severn Crossing Tolls or the Great Western Main Line Electrification).

2.2.4 Response to **Point 21** (Raised the issue of improving the lives of people 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):

1. In 2014, the Department for Transport commissioned a review of the linkages between transport and the economy. The Transport Investment and Economic Performance: Implications for Appraisal (TIEP)<sup>2</sup> review found substantial evidence that transport improvements do lead to improved economic outcomes in the local area. It concludes that, '[studies which look at the effects of specific projects] generally find positive effects of large transport projects on measures of economic performance such as local area employment or GDP, although effects for smaller projects are

---

<sup>2</sup> [www.gov.uk/government/uploads/system/uploads/attachment\\_data/file/386126/TIEP\\_Report.pdf](http://www.gov.uk/government/uploads/system/uploads/attachment_data/file/386126/TIEP_Report.pdf)

harder to tease out'. There is also a range of econometric evidence on the linkages between transport and employment or GDP.

2. Key evidence identified in the TIEP report is as follows:
  - a) McQuaid et al (2004) consider the influence of transport on business location decisions. They find that transport improvements are unlikely to cause firms to move but, for firms who are looking for new premises, accessibility is one of the key factors influencing their choice of a new location;
  - b) Research for the US by Strauss-Kahn and Vives (2009) find that good transport links are one of the main factors attracting office headquarters to second- tier US cities.
  - c) A number of studies from the US find a positive relationship between improvements in accessibility and the density of local employment.
  - d) In the UK, the most comprehensive investigation of the spatial impacts of highway improvements has been undertaken by the Spatial Economic Research Centre (SERC) in 2012. The SERC study finds 'strong effects' of transport improvements on area employment and on plant counts with a 10% improvement in accessibility leading to an approximately 3% increase in the number of business and employment. SERC conclude that increases in employment are a result of firm entry rather than an increase in the size of existing firms.
3. That highway improvements can lead to positive local economic outcomes is also supported by evidence closer to home. For example, a study undertaken by the Welsh Economic Research Unit (WERU, 1996) the effects of improvements to the A55 North Wales Expressway, which found that more than half of businesses in Gwynedd reported that improvements to the road had reduced their input costs, and improved both their ordering times and delivery management.
4. Another study of road improvements of road improvements around Merthyr (WERU, 1997) found evidence that the most recent inward investors into Merthyr might not have considered the area if it were not for the improvements made to the A470.

5. In reference to the Severn Crossings (identified by Mr Anderson), there is also evidence that the construction of the Severn Bridge has been positive for the economy of South Wales. A survey of firms carried out by the Welsh Office (1980), found that:
  - 47% of large manufacturing establishments, 84% of small manufacturers and 85% of distributive firms considered that easier access to markets had “helped to increase business”.
  - Of manufacturing firms which had opened factories since the opening of the Bridge, 79% said that access to the (English) motorway network via the M4 and Bridge had been a factor in their choice of location, and 51% said it had been a major factor – though it was thought unlikely that it had been a key factor in many cases. The availability of labour and government financial assistance were the most frequently mentioned factors (Ibid).
6. A further study carried out by Cambridge Economic Consultants in 1987, attempted to estimate the long-term employment effects of the construction of the Severn Bridge and the M4. This study found that the Severn Bridge and M4 increased economic activity and employment in South Wales by about 4% (footnote: Cambridge Economic Consultants (1987): Case studies of the role of infrastructure projects in local and regional economic development. Unpublished report to the Department of Transport.).
7. Whilst these examples are instructive, it is important to consider the challenges associated with making ex-post assessments of the impact of transport investment. For large, complex economies, economic performance is determined by a wide range of factors of which transport is just one. Assessing the impact of a transport intervention requires us to establish the ‘counterfactual’ – the economic outcomes that would have been realised had the improvement not been delivered. In practice, it is highly challenging to separate out the effects of transport from other factors.
8. These challenges are noted in the recent review of this topic, Transport Investment and Economic Performance: Implications for Project Appraisal (the TIEP review). The TIEP report states:

‘The effects of transport on investment, employment and GDP – nationally and broken down by area – are also widely researched, but the literature does not supply robust answers to many of the key questions. Establishing evidence is extremely demanding for two fundamental reasons. The first is that of the counterfactual; the outcome of a project is observed, but assessment of what would have happened in the absence of the project has to be inferred in some way. The second is that, even if this can be done with any accuracy for some set of completed projects, experience is only partially transferable to prospective projects.’

9. The relative merits of alternative forms of public expenditure e.g. on the salaries of teachers or medical professionals is not a matter for the inquiry – Bushell principle.

2.2.5 I confirm that the statement of truth and professional obligations to the inquiry from my main proof still applies.

### **2.3. Bryan Whittaker (Traffic)**

2.3.1 Response to **Point 1** (Stated that there is no national database of passenger and freight demand by road and rail along the major Welsh transportation corridors in 2017, considering the projections for 2025, 2040 etc.):

1. Whilst there is no national database of passenger demand by road, passenger demand is collected by way of surveys specific to the location and geography where any proposed infrastructure is to be developed. In the case of the M4CaN model, all trip movements in the Area of Detailed Modelling were collected by means of mobile phone and roadside interviews. For freight, data was extracted from the Department for Transport’s Base Year Freight Matrices which are a national database for freight. For rail, station to station demand was extracted from MOIRA. Future year demand forecasts are produced from Department for Transport’s TEMPRO for passengers and from the Department for Transport’s National Road Traffic Forecasts for freight forecasts. In terms of rail, forecasts are taken from Network Rail Route Strategies.

2.3.2 Response to **Point 2** (Stated that traffic growth forecasts showing growth traffic volumes do not represent growth that has actually occurred):

1. Transport Statistics Great Britain shows that between 1985 and 1990, traffic in Britain grew by 33%, greatly exceeding the forecasts. Between 2007 and 2012, traffic in Britain fell by around 3½%, falling significantly short of the forecasts. In both cases, I believe a major cause to be economic – the credit boom in the first instance and the credit crunch in the second instance.
2. These periods can be seen to be exceptions to the general case in which traffic grows steadily, paralleling long-term growth in the economy.
3. The DfT traffic forecasts are long-term forecasts, used for the appraisal of road schemes over a long period. However the DfT do revise their forecasts when the needs arises. The DfT use a broad range of evidence and data on travel behaviour and the factors that influence it, based on;
  - An understanding of how people make travel choices
  - The expected path of key drivers of travel demand
  - Any assumption of no change in government policy beyond that already announced.
4. National Road Traffic Forecasts 2015 is an update to the earlier version of 2013 recognising a general concern around how the forecasts of significant traffic growth fit with recent data showing a largely flat trend over the last decade. The 2015 forecasts recognise that the factors that are highlighted as being key drivers of road demand – incomes, costs and population have been important drivers in recent trends, but that other factors such as increasing concentrations of people living in urban areas, increased costs such as company car taxation and insurance, capacity constraints, technological developments which allow for homeworking and online shopping. Related to this, the number and nature of the journeys that people make, may also be playing a role.
5. The National Travel Survey (NTS) data has shown that the average number of trips have been falling and that there has been a general downward trend in trip rates. The two most common journey purposes (shopping and commuting), exhibit statistically significant downward trend with reductions of 6% and 10% respectively between 2003 and 2010. The trends in this data are not uniform and vary according to purpose and

segmentation (e.g. gender, area and household type). For example, the personal and employers' business purposes are stable while the holiday trip rate is increasing, and the trips that are reducing tend to be shorter trips.

6. The recent decline may also be partly due to economic conditions, and as these are forecast to improve in the future, the DfT take the view that there is reason to believe the decline will not continue at its current rate in the long term and this view is reflected in the NTEM central growth forecast. The NTEM central growth scenario therefore is based on the latest trip rate data collected in the trip rate review assumes a declining trend in trip rates between its base year of 2011 and 2016 and then constant trip rates thereafter.
7. The NTEM forecasts are designed to provide a national view of possible future trends in road traffic. They provide a tool to understand the case for, and impact of, investment in the road network across the country as a whole, and other road transport policies. Analysis of specific schemes use bespoke models fitted to local conditions to inform decisions.

2.3.3 Response to **Point 3** (Concerned that there will be induced traffic generated by the provision of a new or wider road. Within a year such new road space fills up and the previously congested conditions return):

1. In principle, any change to journey times and costs of travel influences the level of demand for travel as a consequence. Providing new road capacity or service improvements to public transport can elicit a number of responses by travellers, including reassignment, redistribution and modal split. Such a change in behaviour response could result in additional trips and or additional vehicle mileage, which collectively are referred to as 'induced traffic'.
2. Given the major change in the network resulting from the scheme and the re-classification of the existing M4, the transport model has been developed in such a way that it can capture a range of behavioural responses to these changes which include reassignment, the switching of trips between highways and public transport and changes in trip destination.

The future year forecasts for the proposed scheme therefore take into account the 'induced' effects of the proposed scheme. There would not be a return to previously congested conditions within a year or anything like a year.

2.3.4 Response to **Point 4** (Stated that car use has declined in all UK demographics. Travel opportunities may be near saturation):

1. There is no evidence to suggest that car use has declined in all UK demographics. According to provisional figures published by the DfT, road traffic in Britain hit a record high in 2016. The estimate of 320.5 billion vehicle miles is 1.2% higher than 2015 and 2% higher than the pre-recession period. Car traffic increased by 0.7% to a record 249.5 billion vehicle miles, 1.3 billion more vehicle miles travelled than the pre-recession peak. Van traffic (LGV) continued to rise, increasing by 3.4% to a new peak of 48.5 billion vehicle miles. HGV traffic grew by 2.8% overall to 17.1 billion vehicle miles. Traffic on motorways and rural 'A' roads increased to new record levels, rising by 2.1% and 2.5% respectively. Over the last 6 years, motorway traffic has increased on average by 1.8% per annum.

Road traffic trends are affected by a wide range of factors, including population levels, personal travel choices and the demand for goods and services.

2.3.5 Response to **Point 5** (Stated 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.):

1. Variation in end to end travel times arise out of day to day variations and more significantly when congestion occurs other than being recurrent and during periods when incidents are evident. Under these conditions journey time reliability is severely impacted. The transport model represents normal operating conditions in which journey times are fairly stable. With the new M4 in place, greater journey time reliability is achieved in normal operating conditions.

2.3.6 Response to **Point 9** (Stated that vehicles are responsible for the deaths and serious injury of thousands of our fellow citizens every year.):

1. Road traffic accidents are caused in the main by the behaviours of drivers and not directly by the vehicle except in rare instances. Other contributory

factor are road alignment, both vertically and horizontally and road condition and in many cases the weather.

2. Motorways are inherently safe – at least 3 times safer than ordinary 2-way roads. That level of safety is achieved by a combination of;
  - A high standard of road design; and
  - Reducing conflicting movements to the minimum.
3. Any shortfall in any of these aspects is a risk factor. In this respect, the M4 around Newport does not incorporate a high design standard. Some sections have alignments that are below current motorway standards and in places there is no hard shoulder. In addition, there are frequent junctions resulting in many weaving sections with vehicles accelerating, decelerating and changing lanes over relative short distances. In a number of instances vehicles are forced to queue back onto the main carriageway of the motorway where other vehicles are approaching at high speed.
4. Some sections on the M4 do have a lower collision rate following the introduction of Variable Speed Limits than the average link and junction collision rate. The sections of M4 which are higher are between Junctions 24 and 25 and Junctions 26 and 27, whilst between Junctions 27 and 28, the observed accident rate is close to WebTAG.

2.3.7 Response to **Point 11** (Raised the issue whether increased traffic on Cardiff's often congested roads will be considered a benefit.):

1. The traffic forecasts indicate that, with the scheme in place, the average daily traffic levels along the A48 (M) would be expected to increase by around 2% in the opening year of 2022 and 5% in the design year of 2037 compared to the situation without the scheme. Although the A48 (M) currently experiences operational problems, particularly during peak periods on weekdays, the scheme is not expected to materially affect those operational problems.

2.3.8 Response to **Point 16** (Concerned that the proposed New M4 would impact on public transportation in the Cardiff - Bristol corridor. It would undermine both bus and rail services):



1. The Scheme takes into account strategic public transport improvements that may have an impact on the M4 comprising of Great Western Route Modernisation including the electrification of the Great Western Mainline from London Paddington to Cardiff by 2027 which reduces M4 traffic by around 3% in 2037. In addition, the transport model also takes into account;
    - Opening of new stations on the Valley Lines (Metro Phase1) and the Valley Lines electrification (Metro Phase 2)
    - Outside of the transport model, an alternative approach has been developed which assumes further rail elements of a South Wales Metro and a strategic Park and Ride site at Llanwern (Metro Phase 3) Together with Newport Bus Rapid Transit in order to assess the potential effect on traffic flows on the existing M4 corridor.
  2. The results show that the combined effect of these public transport schemes is to reduce M4 by a maximum of 6%. Whilst achieving increased patronage and other benefits, the results indicate that the South Wales Metro would provide relatively minor reductions in motorway traffic volumes and does not resolve the problems on the M4 and therefore does not markedly alter the case for the M4 scheme proposal.
- 2.3.9 Response to **Point 17** (Concerned that the New M4 is a threat to a low-cost tram system for Cardiff and will contribute further to sub-optimisation of transportation networks in South Wales):
1. As stated above, a set of measures representing the delivery of all rail elements of a South Wales Metro together with a strategic park and ride at Llanwern has been used to estimate the potential effect on traffic flows on the existing M4 corridor in a 2037 forecast year.
  2. Whilst the reduction in flow arising from a switch of trips to public transport is modest, it nonetheless represents a significant increase in public transport patronage and it is recognised that the South Wales Metro will impact a wide range of movements in the region, many of which will be north-south rather than east-west.

3. The assessment that has been undertaken confirms the Welsh Government position that the M4 proposal and the Metro schemes are complementary to each other.

2.3.10 I confirm that the statement of truth and professional obligations to the inquiry from my main proof still applies.