Cynulliad Cenedlaethol Cymru
The National Assembly for Wales

Y Pwyllgor Amgylchedd a Chynaliadwyedd
The Environment and Sustainability Committee

Dydd Mercher, 2 Ebrill 2014
Wednesday, 2 April 2014

Cynnwys
Contents

In addition, a transcription of the simultaneous interpretation is included.

Aelodau'r pwyllgor yn bresennol
Committee members in attendance

Andrew R.T. Davies	Ceidwadwyr Cymreig (yn dirprwyo ar ran Antoinette Sandbach) Welsh Conservatives (substituting for Antoinette Sandbach)
Alun Ffred Jones	Plaid Cymru (Cadeirydd y Pwyllgor) The Party of Wales (Committee Chair)
Russell George	Ceidwadwyr Cymreig Welsh Conservatives
Julie James	Llafur Labour
Elin Jones	Plaid Cymru (yn dirprwyo ar ran Llyr Gruffydd) Party of Wales (substitute for Llyr Gruffydd)
Julie Morgan	Llafur Labour
William Powell	Democratiaid Rhyddfrydol Cymru Welsh Liberal Democrats
Joyce Watson	Llafur Labour

Eraill yn bresennol
Others in attendance

Yr Athro/Professor Phil Goodwin	Athro Trafnidiaeth, Prifysgol Gorllewin Lloegr Professor of Transport, Univeristy of the West of England
Dr Scott Le Vine	Y Ganolfan Astudiaethau Trafnidiaeth, Imperial College, Llundain Centre for Transport Studies, Imperial College London

Swyddogion Cynulliad Cenedlaethol Cymru yn bresennol
National Assembly for Wales officials in attendance

Alun Davidson	Clerc Clerk
Catherine Hunt	Dirprwy Glerc Deputy Clerk
Nia Seaton	Y Gwasanaeth Ymchwil Research Service

Dechreuodd y cyfarfod am 09:32.
The meeting began at 09:32.

Cyflwyniad, Ymddiheuriadau a Dirprwyon
Introductions, Apologies and Substitutions

[1] **Alun Ffred Jones:** Croeso i'r pwyllgor. Os bydd larwm tân, dilynwch gyfarwyddiadau'r tywyswyr. Diffoddwch eich ffonau symudol, fel yr wyf fi'n ei wneud rŵan. Mae'r pwyllgor yn gweithredu'n ddwyieithog, felly gallwch wrando ar y

Alun Ffred Jones: Welcome to the committee. If there is a fire alarm, please follow the instructions of the ushers. Please switch off your mobile phones, as I am doing now. The committee operates bilingually, and the interpretation is available on channel 1 on

cyfieithu ar sianel 1 y clustffonau. Peidiwch â chyffwrdd â'r botymau ar y meicroffon. A oes unrhyw fuddiannau i'w datgan? Gwelaf nad oes. Fel y gwyddom, mae lle gwag ar y pwyllgor ar ôl i Vaughan Gething adael. Rydym wedi derbyn ymddiheuriadau gan Llyr Gruffydd, ac mae Elin Jones yma yn ei le, ac mae Andrew R.T. Davies yma yn lle Antoinette Sandbach. Mae William Powell wedi cael ei ddal mewn traffig, a bydd yma rywdro. Nid ydym yn siŵr a yw Mick Antoniw wedi mynd i Ewrop ai peidio. Ond, fe wnawn ni ein gorau.

the headphones. Do not touch the buttons on the microphones. Are there any interests to be declared? I see that there are not. As we know, there is a vacancy on the committee following Vaughan Gething's departure. We have received apologies from Llyr Gruffydd, and Elin Jones is present in his place, and Andrew R.T. Davies is here as a substitute for Antoinette Sandbach. William Powell has been held up in traffic and will be here at some point. We are not sure whether Mick Antoniw has gone to Europe or not. However, we will do our best.

09:33

Cynnig o dan Reol Sefydlog 17.42 i Benderfynu Gwahardd y Cyhoedd o'r Cyfarfod ar gyfer Eitemau 3, 7 ac 8
Motion under Standing Order 17.42 to Resolve to Exclude the Public from the Meeting for Items 3, 7 and 8

[2] **Alun Ffred Jones:** Cynigiaf fod

y pwyllgor yn penderfynu gwahardd y cyhoedd o'r cyfarfod ar gyfer eitemau 3, 7, ac 8 yn unol â Rheol Sefydlog 17.42(vi).

Alun Ffred Jones: I move that

the committee resolves to exclude the public from the meeting for items 3, 7 and 8 in accordance with Standing Order 17.42(vi).

[3] A ydych chi'n cytuno â'r cynnig i wahardd y cyhoedd ar gyfer yr eitemau hynny? Gwelaf eich bod. Diolch yn fawr.

Do you agree with the motion to exclude the public for those items? I see that you do. Thank you very much.

Derbyniwyd y cynnig.
Motion agreed.

Daeth rhan gyhoeddus y cyfarfod i ben am 09:34.
The public part of the meeting ended at 09:34.

Ailymgynullodd y pwyllgor yn gyhoeddus am 10:18.
The committee reconvened in public at 10:18.

Ymchwiliad i Gynigion Llywodraeth Cymru ar gyfer yr M4 o amgylch Casnewydd: Tystiolaeth gan Dr Scott Le Vine
Inquiry into the Welsh Government's Proposals for the M4 around Newport: Evidence from Dr Scott Le Vine

[4] **Alun Ffred Jones:** Croeso. I welcome Dr Scott Le Vine to this session. Thank you for taking the trouble to come down to help us in our inquiry. The session will be bilingual, in that Members can ask questions in Welsh or English. We have a number of questions to ask you. Thank you, again, for coming down.

[5] I will start with a general question. Can you mention some of the factors that account for the apparent levelling of car usage and mileage in Britain in recent years?

[6] **Dr Le Vine:** Sure. I have prepared a three or four-minute statement, which does

precisely what you are asking.

[7] Good morning to you all. I am Dr Scott Le Vine, based at Imperial College's centre for transport studies. As I think you all know, I am here today to discuss travel trends and analytical practices for traffic forecasting. I want to be very clear upfront that I do not take a particular professional view on any particular scheme for the M4 corridor. So, the motivation for the line of research that I do, and my testimony here today, is that the official traffic forecasting procedures, as you will know, have been consistently overestimating what has actually happened in terms of traffic levels, and that is across Great Britain. It has also happened in the US, so it is not unique to here. The question is why. Your colleague, Andrew Minnis, asked me whether e-commerce and internet access could be serving to reduce traffic levels. So, this is fairly widely speculated, but, at present, the answer is that there is no reliable evidence, certainly of which I am aware, that shows this to be the case. In fact, there is evidence that suggests the opposite. Using data from Scotland, we have shown that people who are internet users drive more than otherwise identical people who are not internet users. Precisely why is a matter of speculation; we do not know.

[8] It has also been suggested that people might be driving less because they are becoming increasingly sensitive to environmental sustainability. This also does not seem to be the case. For better or worse, the evidence is that, across Britain, people have become less concerned about the environment during the 2000s. That information comes from the British social attitudes survey. So, as I think you will know, the national transport model is what the Department for Transport uses to develop the official traffic forecasts. There are two important issues that I want to highlight that are not properly represented in the national transport model. The first of these is a very sharp drop in company car traffic in the 2000s. So, this effect has been concentrated among a fairly small slice of the population; a fairly small group. However, it has been so significant that it accounts for much of the overall drop in driving mileage per head of population across Britain. We do not know whether that is true in Wales or not, but that is certainly the case across Britain. We know that that is not well represented in the national transport model. We also know that this cannot go on for ever. Company car use cannot fall below zero, so, at some point, the downward pressure that this has had on overall traffic levels has to come to an end. We do not properly understand how much of this drop has shifted into personal car use, but what we do know is that about a quarter of this drop in company car travel, specifically for business purposes, has turned up on the rail network.

[9] The second point that the national transport model, at present, is not properly equipped to handle is a sustained drop in how much young people drive, particularly young men. So, the average driving mileage for a British young man, under the age of 30, fell by about 30% before the recession, so in the mid-1990s to mid 2000s. During the recession, the downward trend has carried on and shows no signs of stopping. This is a trend that has been observed for Britain as a whole. It is much less clear whether it has happened in Wales, but the drop across Britain is completely unprecedented. It is consistent with contemporary evidence from other industrialised countries—the US, Japan, Germany, France et cetera. So, I will briefly explain what we know about this phenomenon. The first thing is that it is concentrated in Britain's big cities, particularly in London. This is also where international migrants, like myself, tend to concentrate, and we know that international migrants are less likely to hold a driving licence and likely to drive less mileage than otherwise identical people who were born and raised here. So, this is something that the national transport model does not take into account.

[10] Secondly, it has become much more difficult over time for young people to get a driving licence. The latest Department for Transport surveys show that learners passing the driving test have taken an average of 47 hours of paid driving tuition, which works out to be about £1,000 just in driving school tuition. We have calculated that the average British young

person spends 20 months learning to drive—that is more than a year and a half—before they succeed in acquiring a licence. We know that pass rates for the practical driving test have trended down since the 1990s. So, this is a big part of why they are driving less and, again, the national transport model does not take that into account.

[11] The last point I want to make is quite a stark one. Young people today face poorer economic prospects than earlier generations did. This is not simply due to the recession. It is much more structural, and it began many years before the 2007 financial crash. If we consider a British economy of only those aged under 30 and we strip out everyone over age 30, what we would find is that this young person's economy has been in recession since the year 2001. To put that another way, incomes for British adults under age 30 have been falling in real terms since 2001, whereas they have trended upwards for older people.

[12] So, young people today are simply less economically vibrant than young people in years past. We do not know, unambiguously, why this is the case, but we do know that the national transport model does not take into account the fact that there has been this divergence between younger and older people's economic performance. So, that is another area where this particular treatment requires refinement. That is what I wanted to say to start my testimony. Thank you.

[13] **Alun Ffred Jones:** Thank you very much. That was very interesting. I am sure that Members were quite astounded. What is the difference or the gap between what was projected and what has happened over the past five years? You said that there has consistently been overestimation of the growth in traffic. What is the difference?

[14] **Dr Le Vine:** In terms of numbers, I do not know, but, since the famous traffic forecast from 1989, each of the forecasts point ever upward, and what has actually happened in terms of traffic has been broadly stable and up at a much slower rate. I do not have a percentage gap that there has been. When I speak to my colleagues at the Department for Transport, their view is that, had they known in advance what would have happened to GDP and to fuel costs, they would have predicted what has happened better. That is their view.

[15] **Russell George:** Your summary was very interesting. You mention that there is no Wales breakdown and that it is UK data. That is right, is it not? You do not have a Wales breakdown.

[16] **Dr Le Vine:** Not for Northern Ireland; it is British data.

[17] **Russell George:** That is fine; British data. Do you have data broken down between urban and rural populations, because, clearly, the situation will be different between commuting in London and commuting in rural Wales, or rural mid Wales? So, is there a breakdown of data in that regard?

[18] **Dr Le Vine:** Yes, that is right. What has been happening over time is that place—where you live and where you go et cetera—has broadly become more important. There has been a divergence in the trends between the densest areas—London in particular—and the countryside. So, there has been a divergence over time between different types of places.

[19] **Russell George:** Are your data split between urban and rural areas?

[20] **Dr Le Vine:** That is right. In urban areas, again, and this is particularly strong in London, traffic levels have come down sharply. In rural areas, they have continued to track upwards.

[21] **Russell George:** Yes. Okay, that is all.

[22] **Julie Morgan:** I found that introduction very interesting. I was interested to hear you say that you did not feel that any environmental concerns had made any difference to the amount of cars on the road. I wondered whether you could expand on how you reached that conclusion.

[23] **Dr Le Vine:** Sure. This comes from two different data sources. One is in the UK and one is American. There is a question that the American polling outfit, Gallup, has been asking since 1984, and it asks a cross-section of the American public, which is: should we prioritise economic growth or should we prioritise environmental protection? Broadly, that is the wording. Over time, since the year 2000, the trend has become that people in the US have tended to say, 'We should prioritise economic development'. That is the US.

[24] In Britain, we do not have that direct data source to enable us to observe the trend over time. What we do have is the British social attitude survey, and, from that, if you take questions that were asked in the year 2000 against the year 2010, the questions were: are cars damaging to the environment? Are they very damaging, a little bit damaging, not so damaging, et cetera? The second question was: is human-induced climate change damaging to the environment? Is it very damaging, a little bit damaging, et cetera? Those have trended against the direction of rising environmental sensitivity. So, those are the data sources.

10:30

[25] **Julie Morgan:** There does appear to be, very recently, a significant increase in cycling, for example. So, that has not impinged on your data.

[26] **Dr Le Vine:** These data sources are what they are and they say what—

[27] **Julie Morgan:** Yes, I see that.

[28] **Dr Le Vine:** People cycle for lots of reasons. Environmental sensitivity is one of them, but there are others as well. So, the two can be reconciled.

[29] **Julie Morgan:** Right. Thank you.

[30] **Alun Ffred Jones:** I now call Julie James.

[31] **Julie James:** In terms of the reconciliation that you were just talking about, and some of the stuff that you were saying in your paper as well—which I read—I was really interested in the driving trends. So, you are saying that company car usage is falling, but that the number of women holding licences is increasing, and that they are sort of balancing each other out. Forgive me, but I am not in any way a statistician. You say that the company car falling model has to go somewhere; it has to stop at some point. I did not quite understand what you were saying that we should deduce from that, really.

[32] **Dr Le Vine:** What I am saying is that there cannot be a negative number of driving miles in company cars. At some point, that must come to an end. Since there has been a sort of suppression of overall traffic growth for some time, when that does come to an end the trend will look a bit different.

[33] **Julie James:** So, presumably, it will then start to rise again. Is that what you think might happen?

[34] **Dr Le Vine:** Whether it rises or not depends on a lot of things, but it will be tilting.

[35] **Julie James:** Then, in terms of the urban stuff that you were talking about, that is because of modal shifts, is it not? It is because it is so difficult to drive in London and it is much easier to go on public transport—just to be colloquial about it for a minute.

[36] **Dr Le Vine:** There is a lot of speculation. The truth is that we just do not know whether it is mostly this or mostly that. We know that the road network in London has changed enormously over this period of time. Lots of road spaces have been re-allocated to cyclists and bus lanes et cetera, away from the park and away from general traffic lanes. We also know, as I mentioned, that international migration is changing the face of London, which has impacts on how people get around, et cetera. So, there has been a change in the economic structure of the types of work that people do. Again, particularly in London, it has changed over this period. There is no evidence that states that it is mostly this or mostly that. These have all happened together; so, we have a tough time picking out which one of them is most important and which is less important.

[37] **Julie James:** So, we are struggling with what to do about various infrastructure projects that are being proposed here and we are getting quite a lot of complex information, it seems to me, about it. One of the arguments that we have had put in front of us by a number of people is that if we have much improved public transport systems—electrification of the railways and so on—we will have modal shift from the M4 corridors onto that and that will decrease, or ought to decrease, the traffic projections. However, using these models that you discussed with us, that does not appear to be happening inside those models, as I understand it, at the moment.

[38] **Dr Le Vine:** Again, for company cars specifically, there has been a very sharp policy stimulus, and we know that some of that mobility has shown up on the rail network. So, there is evidence of some shift between the two. It is intuitive; it makes sense.

[39] Let me talk about the scale of the mobility that is on the road network versus the rail network in Wales. Average driving mileage per head of population in Wales is around 3,700 miles per year. Average mileage on the rail network per head of population is around 300 miles per year. If, for argument's sake, you were to double the amount on the rail network, it would be less than 10%, if it was just a pure shift of a reduction on the road network. That is the scale of the issue.

[40] **Julie James:** That is really interesting. Thank you.

[41] **Alun Ffred Jones:** I wish to ask you about the implications of future traffic trend uncertainty for future transport planning in the UK. At the moment, with the way that matters are taken forward, is there a risk of over-provision or under-provision because of the way that Government measures future trends?

[42] **Dr Le Vine:** Well, there is. We are living in what the Chinese would call interesting times. There is genuine uncertainty. The relationships that seemed to hold—there were such tight statistical relationships for a long period of time—seem to have changed, looking backwards forensically at the 1990s and 2000s. No-one has a handle—I do not and no-one else does, to my knowledge—on what the future will hold. We know that things have changed, but we do not know what the implications are for the future. I think that is fair to say.

[43] **Joyce Watson:** Moving on from that, you are where you are, but we need, in Government, to try to do a little bit of prediction. So, are there any alternative approaches to traffic forecasting and modelling that are either available now or that might be available in the very near future that might help us with that?

[44] **Dr Le Vine:** That is a very good question. There are a couple of different ways to look at this. The first is that there is no single right way to forecast traffic—there is no single right way. We do it one particular way because it is standardised et cetera. In the US, which I am very familiar with, they do it in a very different way. It is a decentralised process. Every city does it differently, et cetera. We know that any technique has statistical weaknesses, and we can identify them. We know that; there is nothing that does not have these weaknesses. That said, just because a model has a particular statistical weakness does not mean that it would do a bad job of making predictions. The question is: what has changed, and can we represent that? Let me give you a couple of examples of what other places do. In Dallas, Texas, they maintain two transport models, one of which is practical and that city staff can run—it is easy to do, they can do it fast and get answers quickly—and the second model is based on experimental techniques. That is one way of dealing with this. It costs money and it takes time, et cetera. That is one example of what is done.

[45] I think that it is a genuinely difficult problem. It is relatively easy to look back forensically and it is relatively hard to predict the future. I think that what we need to do more of is scenario analysis, scenario planning, saying, 'Under these circumstances in the future, this would be the set of outcomes, and, under different circumstances, these would be the outcomes'. As it stands now, we do too much of saying, 'We have one official forecast of the price of fuel and we have one official forecast of incomes in the year 2035'. We need to experiment with more possibilities of alternative futures. Technology is a big one here. The traffic forecasts do not take into account electric vehicles. They do not take into account—. You may have seen Google's cars, automated cars and all of that. We know that the future will look different. Electric vehicles are much cheaper to operate. Hence, they could stimulate more driving. So, there are enormous uncertainties and I think that the way to think about those is in scenarios.

[46] **Joyce Watson:** Okay, thank you.

[47] **Alun Ffred Jones:** You have referred quite a lot to London and, obviously, there are particular circumstances around that large conurbation. You referred to inward migration changing patterns of behaviour in terms of, I think, public transport and so on. I presume that the same patterns would apply to any of the large conurbations in the UK. Is the pattern very different outside those large conurbations in terms of car usage?

[48] **Dr Le Vine:** London is a beast unto itself. The second-tier cities of Birmingham, Manchester, et cetera, are very different from London. I think that the most straightforward way to answer that is to say that what has happened in London is at one extreme of the spectrum and what has happened in the countryside is at the other extreme and there is a continuum between them. Second-tier cities are a bit to the left of London, if you will.

[49] **Julie James:** I was just going to go back to the answer that you gave to Joyce about scenario planning. I confess that I am really struggling with some of this analysis that we have been given, but I understand that the Welsh Government is currently using a traffic model called TEMPro, which I presume that you have come across. We have had evidence from environmental groups that were vehemently anti using that model, that do not like its outcome and that have suggested modifications to it and so on. How would we build your suggested scenario planning into that? I think that the Government is currently using this model to predict the rise in M4 traffic and so on. I admit freely that I am really struggling to understand what the difference between those two things is.

[50] **Dr Le Vine:** TEMPro is sensitive to certain external factors: incomes and population growth, et cetera. So, you can change the inputs and you will get different outputs. That is one possibility. The second possibility, which means more money, more resources and more time, is to look at a different type of model. TEMPro has been developed over a long period of

time, its properties are well understood and it is standardised, et cetera. Some of its weaknesses are that it includes, and this is a quote from its documentation, 'a strong time trend' of increasing car ownership in future years. I think that it is difficult to justify an all-else-equal assumption of growth in car ownership. In a perfect world, where there was the time and money to rethink that, I think that you would want to make the model sensitive to policy and to a wider range of inputs, rather than having that as an assumption.

[51] **Julie James:** Professor Cole has told us in written evidence and in oral evidence that a large part of the problem with this forecasting model is the variables that are being fed in at the other end. Is it possible to get any kind of consensus about what those variables ought to be to get the best forecast?

[52] **Dr Le Vine:** You can get an answer, but whether you can get consensus is a different question. The model does a reasonable job. It is based on historical patterns, et cetera. Again, we just do not know whether those will hold into the future, and different groups with a different perspective will think that the future will look different. I think that it is a reasonable place to start. Do I think that it is the final answer? No.

[53] **William Powell:** A number of my questions have already been answered, but I would like to drill down to a little more detail on the potential impacts of public transport investment, specifically. Professor Cole's work has already been referenced on a number of occasions. Professor Cole suggests that the investment that has been the subject of considerable debate in recent days and weeks, particularly around the source of the funding, into the south Wales rail electrification could have an impact of up to 15% on traffic levels on the M4. Similarly, in terms of the south Wales metro project, he has spoken about a potential transfer of between 20% and 30% of traffic at peak times. Do you consider those estimates to be realistic? To what extent do you think that they should be fed in as a reliable part of the context of planning the M4 proposals?

[54] **Dr Le Vine:** I have seen Professor Cole's evidence. I cannot take a view on whether 15% is a reasonable number or not, because I have not seen how he came up with it. If I were to see the methodology, I would be able to come to a view. Again, the scale of the issue, as I said to your colleague earlier, is that if you were to double the amount of rail mileage in Wales, you would get less than a 10% reduction in overall car driving mileage, if there were simply a one-for-one transfer, mile to mile, from car to rail.

[55] **William Powell:** That is helpful, thank you. We think that we need to secure the back evidence that sits underneath Professor Cole's—

[56] **Dr Le Vine:** I would be happy to send written correspondence on that.

[57] **William Powell:** That would be helpful, thank you. Diolch.

[58] **Alun Ffred Jones:** Julie James, in her question, asked whether there were any variables that could or should be included in any projection. Are there any things that stand out that you believe we could be asking for?

10:45

[59] **Dr Le Vine:** Yes. This driving licence acquisition process is something that is much more important than we previously realised. It is hard to get a licence today. In international terms, it is hard to get a British licence. We do not take account of that, and we should. Another thing is that we treat income at the household level, so how much income your household makes informs what your travel is likely to be. However, as I said in my introductory statement, there has been this divergence between older and younger people's

economic fortunes. What that tells us is that we really should be looking at income at a personal level, not at a household level. There is evidence from other places as well that the distribution of income matters in ways that we were previously insensitive to. So, if GDP grows, but the median income does not grow, that probably has a different implication for traffic than if the median income does grow.

[60] **Alun Ffred Jones:** So, presumably the median income would suggest that more people have the capacity to buy cars and drive them. Is that the case?

[61] **Dr Le Vine:** That is right. If you have economic growth over the next few years but it is primarily the better off who are getting better better off, that has different implications than if it was the lower middle who are seeing their incomes rise.

[62] **Alun Ffred Jones:** That makes sense. Julie Morgan is next.

[63] **Julie Morgan:** Going back to what you said, you cannot over-emphasise the difficulty in obtaining the British driving licence. Do you think that it has become more difficult?

[64] **Dr Le Vine:** 'Difficult' is a subjective term. What is known is that the pass rate for the practical test, the main test, the on-road test, has fallen over time, and today the number is 40-something per cent of people who take the practical test are passing it. We know that that rate has trended down since the 1990s.

[65] **Julie Morgan:** Down from what?

[66] **Dr Le Vine:** Oh, the high 50s—I do not recall off the top of my head.

[67] **Julie James:** Is that true in other countries?

[68] **Dr Le Vine:** Other countries have been changing their licence acquisition regime in other ways. So, again, in the US, they have instituted, in 49 out of the 50 states, what is called graduated driving licensing, which means that when you turn age 16 or 17 or whatever, you do not get a licence to go out and drive wherever you want, whenever you want. You might get a licence that says you can drive, but not between 11 p.m. and 5 a.m., or you can drive, but not with other teenagers in the car who are not your brothers and sisters, or something like that. Those restrictions will, over 18 months or whatever, be lifted. So, there is a graduated process of licence acquisition. That has just come on-stream in most of the US states in the past 10 years. So, different things are happening in different places.

[69] **Alun Ffred Jones:** Joyce Watson is next.

[70] **Joyce Watson:** On driving licences, if you are measuring—if I understood rightly—car usage with acquisition of licences, particularly among the young group, is there further research that says that they are actually using that licence? Some will acquire a licence even before going to university, but they might not use it for another x number of years because of that study, or the cost of insurance, or the cost of running a car, or whatever it might be. Is there any research on whether you actually use your licence?

[71] **Dr Le Vine:** What is known is that, if we go back to the 30% drop in mileage by young men in their 20s from the mid-1990s to the mid-2000s, pre-recession, about half of that can be accounted for by fewer of them holding licences. The other half is accounted for by those who have licences driving less. Again, precisely why—the models that you have been given are the best available. There is nothing better. We know that their income has fallen quite substantially. Again, since 2001 their income has trended down year on year.

[72] **Alun Ffred Jones:** That reference to income for the under-30s dropping relatively speaking, presumably, from 2001—can you point us to the evidence on which that is based? You do not have to do it now, but perhaps you could drop us a note.

[73] **Dr Le Vine:** Yes, I will be in touch with Andrew Minnis. The evidence comes from the survey of personal incomes, which is a HM Revenue and Customs data set. So, when I say 'real income', it is corrected for the erosion of incomes through inflation. That is where that evidence comes from. We observed it in the national travel survey data set, but we did not trust it, so we went to the HMRC data set, which confirmed it.

[74] **Alun Ffred Jones:** Okay; thank you very much. Are there any other questions? I see not. Therefore, we thank you for coming here and for being so brutally honest. It has been a most refreshing session, and we really appreciate it. Thank you very much for taking the trouble to come down here.

[75] **Julie James:** I am sorry; may I ask one last question? The statement that you read out at the beginning is slightly different to the written stuff. I would like a copy of that, if that is possible.

[76] **Dr Le Vine:** I will send that to you.

[77] **Alun Ffred Jones:** It will be in the Record anyway. However, yes, you will get that.

[78] **Dr Le Vine:** I have it as a Word file.

[79] **Alun Ffred Jones:** Thank you.

10:53

Ymchwiliad i Gynigion Llywodraeth Cymru ar gyfer yr M4 o amgylch Casnewydd: Tystiolaeth gan yr Athro Phil Goodwin
Inquiry into the Welsh Government's Proposals for the M4 around Newport: Evidence from Professor Phil Goodwin

[80] **Alun Ffred Jones:** Good morning, Professor Goodwin. We are very pleased to welcome you here. Croeso. We are looking forward to this session with you, which I am sure will prove to be very enlightening, as we try to work our way through this inquiry. Thank you very much for the paper that you provided. We will use that as the basis for our questioning.

[81] I will kick off, but would you like to make an opening statement?

[82] **Professor Goodwin:** Yes, please, if that is all right by you. I will not cover again the issues that I was able to hear you discussing. There is clearly very much more to say about that in terms of the research background nationally and internationally, but it is silly just for me to give you my specific take on all of those issues. The question in my mind is this: given that we have to say that the reconsideration of forecasting has been a troublesome matter for all serious professionals, not just a few academics, and that there is simply no longer a professional consensus about where the future track of traffic growth or decline is going to be, what follows from that in terms of the appraisal of specific projects, specific plans and policies?

[83] My reading is that the draft plan consultation document that you are considering broadly in the committee, without me trying to say exactly what I think about the merits of

the issues, has three very important technical issues that follow from the analytical research on demand and forecasting about how one carries out a reliable appraisal of the alternatives in front of you.

[84] There are three particularly weak technical problems that need quite difficult and close scrutiny. The first problem is that all the appraisal that has been carried out up to now on the main policy and the variant alternatives to it has been based on and is completely dependent on the confidence that you place in the Department for Transport regional trip rate forecasts, the implication that traffic growth future will follow this track for the next quarter of a century and beyond and the implication that only the recession and roadworks have stood in the way of such growth until now.

[85] Actually, the levelling off of traffic growth started 10 years before the recession. It is simply not credible to presume unchallenged a single future of continued, uninterrupted traffic growth forever. The world has changed. As my colleague Scott has discussed with you, we do not fully understand why or how it has changed, but planning now has to be robust for low traffic road traffic growth, none at all, or even a decline, and not only continued uninterrupted fast growth into the future. So, that affects how one does the appraisal.

[86] The second problem is that, just supposing that the forecasts on which the current appraisal is based on are correct, which is a possibility, the planned expansion of road capacity that you are considering is not nearly enough to improve traffic conditions. The appraisal implies, though it does not say so quite as explicitly as I am going to, that even with the planned expansion of road capacity, overall traffic congestion—if the forecasts are right—will get worse year by year, not better. The improvement that is considered in the appraisals does not mean things getting better—it means that things will get worse less slowly than without that extra road capacity. To me, that means little patches of fast travel surrounded by progressively slower and slower door-to-door journeys. It is not a recipe for the contribution of transport to economic growth.

[87] On the political slogan, well, I suppose that is for you rather than people like me, but thinking as a voter, the slogan ‘Vote for us, we will make things worse more slowly than the other parties’ is not really a recipe for victory. [*Laughter*.] Maybe this is the best that we can hope for in the world as it is now. However, the plan ought to be about how to make things better, especially if we want to contribute to economic prosperity.

[88] The third problem is an issue that the Department for Transport is still wrestling with, and simply does not know the answer to. It is called ‘the two-way road problem’. All roads go in two directions, not one, and even if the forecasts are correct, which I think that they probably are not, and even if the capacity increases could reduce congestion overall, and I do not think that they are enough to do that, there is no guarantee at all about which end of the road the benefits would accrue to. Roads can suck development out of one area and into another, but only in very special circumstances do both ends benefit equally.

11:00

[89] I do not want to pretend greater knowledge than I have: I do not live in the region; I do not have that local specialist knowledge; and, I have not yet had the opportunity to make a very detailed professional scrutiny that would enable me to do a new appraisal among the options, although I do think that it is necessary for you to do that. Subject to that, I would say tentatively that I think that policies and projects that are geared to recognising or achieving lower road traffic growth and that are more robust to grievous forecasting errors are likely to perform very much better than is implied in the rather elaborate coloured pictures in the report. I had great pleasure in looking at them, but if the forecasts are unreliable, they are basically just colouring in. That is as much as I wanted to say at the start. I will try my best to

answer whatever questions you have.

[90] **Alun Ffred Jones:** Thank you. May I start by challenging one thing? You seemed to imply that the growth forecasts are wrong, but that things would get worse anyway. If the growth forecasts are wrong and there is a reduction, then surely things will get better.

[91] **Professor Goodwin:** I am sorry if I was unclear on that. I think that the growth forecasts are wrong; I think that they are too high and that we will not see traffic growth rates in the next 10 or 50 years analogous to the traffic growth rates that we saw during the 1980s. That is a transition that took place, not recently, but in the mid-1990s. Given that, if they are wrong, then what you say is completely logical—congestion will not get worse in the way that is forecast and there are other things that one ought to do to maintain the quality of travel, its reliability and the alternatives that are open to people. The need for extra road capacity is simply not demonstrated.

[92] What I had intended to say was that that outcome, which I think is the more probable one, is also not certain. It is possible—we have to say—that the Department for Transport forecasts are right. In that case, if they are right, the traffic forecasts mean that traffic volumes for the region as a whole would be going up very much more than any feasible prospect you have of expanding road capacity to match the forecasts. In that case, congestion is going to get worse year by year.

[93] In a sense, I suppose that we are saying is that there are two views of the future. If the forecasts are wrong, there is not the need for the extra capacity that they are predicated on—that is view one of the future. View two of the future is that the forecasts are right and, in that case, if you want road capacity to match those forecasts, you ought to be doing very much more road building than is down in the plan. These are two different views of the future.

[94] **Alun Ffred Jones:** Thank you. In your opening remarks you mentioned trip rate forecasts from the Department for Transport. What are those?

[95] **Professor Goodwin:** These are the ones in your consultation document. It is figure 5, if I remember correctly. It is the rather fine glossy document that has been put out for consultation. Let me just pause for a moment. Yes, it is in a section called the ‘Consequences of Doing Nothing’—well, nobody does nothing, but it is on the consequences of not having a major plan—and figure 5 in that document has observed and forecast traffic growth. For the region concerned, the observed traffic has a rather stable level of traffic over the last 10 years, with some ups and downs, which you would expect, and some particular observations during the M4 roadworks, which you would also expect, but, broadly speaking, it is stable. Then there is a projection, often to the future, joining on to that rather stable observed traffic, which, when you look at it closely, is not forecast traffic, but forecast trip rates. These are based on the Department for Transport forecasting model, which is driven mostly by income, therefore economic situation and population and some workplace and resident projections. They show, pretty well, a straight-line increase—about a 25% increase from now until 2030, and there is no evidence that it is coming down. So, one thinks that that is a curve that is going up for another 20-odd years or so afterwards. That is the starting point for the appraisal of the options: this is what is going to happen in the future and, therefore, that is the basis for the forecasts of additional stress on the network, more traffic congestion, a greater proportion of the network being close to its maximum capacity and so on.

[96] **Alun Ffred Jones:** Diolch yn fawr. Russell George is next.

[97] **Russell George:** Thank you, Chair. Why is it that Governments, current and past, have performed so badly in their forecasting? What are the factors, in your view, that have led to them doing such a bad job?

[98] **Professor Goodwin:** My goodness. I would say that a very large part of the profession involved in transport planning at the moment, making perhaps one exception—that important part of the profession who are consultants working out projects that are based on the forecasts, who have a special relationship with them because they are their bread and butter—do not really understand why the Department for Transport officials seem so wedded to knowing that there is nothing wrong with their forecasts. The proposition that I have heard Department for Transport officials say is, 'Yes, we have overestimated the long-term traffic growth in every single forecast that we have made since 1989'—they say that; there is no doubt about it—'but it wasn't our fault. The main problem was not that our model is wrong, but that the Treasury gave us the wrong information about the state of the economy and the Office of Population Censuses and Surveys gave us the wrong projections about population. If they'd told us right, then we would've got the traffic forecast right as well'.

[99] **Russell George:** So, that is their view. What is your view on their view?

[100] **Professor Goodwin:** My view is that they have a view of the driving forces that drive future growth in traffic that is much too narrow. They only have economics and population as the most influential forecasting variables. They do not consider motivations, a desire for health or changes in fashion, and they do not take account of the redevelopment of inner cities, and the analysis of past traffic growth has been largely driven by a long-term shift from the towns to the suburbs of populations, and that is not happening now; the shift is in the opposite direction.

[101] **Russell George:** Yes. So, the civil servants are effectively saying, 'Our forecasts are right, but the data that we have been provided with to put into our models and the predictions are incorrect'.

[102] **Professor Goodwin:** Yes.

[103] **Russell George:** What alternative models could be looked at or developed? What should they be looking at for the future? Do you have a suggestion as to how they can model better?

[104] **Professor Goodwin:** I have made many suggestions to them over many years. I think that they need to change the way they operate on demand elasticities and look at how sensitive travel behaviour is to policy initiatives. The evidence seems to be that it is a lot more sensitive. The influence of initiatives such as the ones that involve cycling, walking and pedestrianising town centres, and the cost of fares, parking charges and even petrol, and all such parameters, is rather higher than the Department for Transport assumes.

[105] There is a problem in that it is only a body like the Department for Transport that has the resources to employ the major analytical effort to do working models like that. Its own model is in-house and it will not let anybody else inspect the workings of it. So, you cannot take over the model and do a few tweaks yourself; you have to build one from scratch, if you want one. I do not think that that is good practice, but that is a relatively minor argument.

[106] **Russell George:** So, it will not show the detail of its modelling.

[107] **Professor Goodwin:** You cannot get your hands on the model. If, for example, you want to make your own economic forecasts for the state of the economy as a whole, provided that you have reasonable credentials and that you make some commitments about what you will do with the data on so on, you can have the Treasury's model. You can put new modules in of your own, you can change the parameters and you can do what you like. This is what you often see before budgets: all sorts of different organisations have their own alternative

forecasts.

[108] The Department for Transport has a monopoly on worked-through, detailed, traffic forecasts. It does not have a monopoly on local forecasts and London, for example, has its own model and it makes forecasts for London that are quite different to the Department for Transport's.

[109] **Alun Ffred Jones:** I will interrupt you there because a lot of people want to come in.

[110] **Russell George:** I have had my answer.

[111] **Professor Goodwin:** I am sorry, but may I just say something, because there was one crucial point on what to do instead? My view is that the situation we are in now is not a choice between two models, but a choice between two or more views of the future. Therefore, appraisal ought to be carried out in the context of the question of what if this view of the future is right, and what if that view of the future is right, to see which policies come out well on both criteria.

[112] **Russell George:** Except there are only two views, of course.

[113] **Professor Goodwin:** No. In fact, there are about three and a variant, which may make four. That is the world that we are in.

[114] **Julie Morgan:** In the situation that we are in and where we are giving our views on the consultation that you have read, you said that there were two things to take into consideration: either the predictions were right, in which case there would not be enough expansion in road capacity, or they were wrong, and it was going to be less. Do you suggest that there should be an appraisal model of both options? Is that what you are saying?

[115] **Professor Goodwin:** Yes.

[116] **Julie Morgan:** We do not basically have an appraisal option of the prediction that traffic will not grow.

[117] **Professor Goodwin:** Technically, it is very easy to do. It is very difficult to make a prediction and to say with confidence, 'I am certain that traffic will not grow, or that it will only grow by 5% instead of 25% or whatever'. However, it is very easy to do an appraisal stating that, let us say, in 2030, or whichever the appraisal year is chosen to be—normally there is a 60-year appraisal period for major road schemes—the traffic patterns are as predicted by the Department for Transport, which is one option, or let us say that they are much the same as they are at present. You clearly want to say, 'Yes, but there are some new developments coming along and that will affect exactly where people live'. You know something about those because they are within the control of the local authority or the Senedd. Once you have that, it is relatively straightforward to turn the appraisal handle and say, 'Yes, this means that traffic congestion is going to be this big a problem, and there will be so many journeys', and so on. That is not technically a very difficult problem. It is no more difficult than the sort of colouring in, as I call it, in the consultation document. It simply means that a lot of the tables that are coloured green are going to be coloured red, and many of the ones that have '++' are going to be '-' and so on. That is done at a level of a sort of qualitative professional judgment.

11:15

[118] **Julie Morgan:** It did seem to me that, when you presented those two alternatives, you did say 'but of course, it may be right', in terms of the Department for Transport.

[119] **Professor Goodwin:** I cannot exclude the possibility of that. However, I believe that it is wrong. That is a different question. I think that my reading of the evidence is that something very big, important and fundamental is going on in the current decade about people's attitudes to car use, walking and cycling, cities and the country, mobile communications and the internet, and the right of passage—when I was a 17-year-old, getting your licence was the demonstration that you were an adult.

[120] **Julie Morgan:** Just to conclude, you are saying that the predictions that we have been presented with are of the past and have not taken into account these things.

[121] **Professor Goodwin:** Yes.

[122] **William Powell:** Good morning, Professor Goodwin. I found your opening remarks and presentation to be really fascinating. You have told us quite clearly that the Department for Transport has consistently been fairly flaky in its estimates of traffic growth, at the same time as being fairly coy about its methodology. Is there any good practice that you would point us to, either elsewhere in the European Union or in the United States of America, where there is a better track record of robust estimates that have proven to be closer to reality than we have been relying on in this country for many years?

[123] **Professor Goodwin:** I cannot give you a very good answer on that because I have not done that sort of level of detail of comparison of practice in different countries. Although most Governments, naturally enough, are interested in future traffic projections, I think that the Department for Transport in the UK is more—what is the word? 'Controlling' is too strong a word. The status of the Government projections, I think, and the weight that they are accorded in policy is greater in the UK than it is in many other countries where decisions—it comes into the whole regionalism and the status of cities and so on—are not made at the national Government level.

[124] **William Powell:** Thank you for that. With emerging policy priorities coming up from the Welsh Government, and indeed the UK Government, in terms of rail electrification and, specifically here in the Welsh context, the development in the coming years of the south Wales metro system, how realistic do you consider the estimates that Professor Stuart Cole has come up with, with respect to the south Wales metro impact specifically, in that it could lead to a reduction of 20% to 30% in overall traffic loads on the M4? Do you think that that should be taken account of in our planning in our consideration of coming proposals?

[125] **Professor Goodwin:** As a matter of principle, I absolutely agree that it does not make any sense to appraise major road schemes, major rail schemes and major policies on traffic, traffic control and demand management in separate packages, because it is the combined effect of all of those things that is going to affect travel conditions and travel reliability. So, from that point of view, I would be absolutely in favour of including not only the metro plans but, in detail, the other plans on sustainable transport in the appraisal package of the road schemes. In terms of the actual numbers—. I should say that I have known Professor Cole—we are of the same generation—as long as I can remember, and I have always enjoyed his presentations. I will not write a blank cheque saying that his numbers are all absolutely fine and that I will endorse every one of them, but I do think that he has got the orders of magnitude right. The experience of European cities is that well-designed, reliable and ambitious metro schemes, even in quite small cities—ones that we would not think justify a metro system, light rail system, street-running trams, the whole package—have had a very much bigger effect in terms of economic impact, property values and attitudes to public transport than was expected.

[126] I think that we tend to underestimate the impact of these alternatives on road traffic

because of a particular methodology of assuming that only journeys of a particular length—. People assume that it is only if the journey is less than three miles that people will be attracted to use a bike or that it is only if the journey is between five and 10 miles that people will be attracted to using the metro and so on. I think that that is quite wrong. What happens with a major new piece of transport infrastructure is that the destinations people choose to go to change. It is quite common that a 15-mile car journey will not be replaced by a 15-mile rail journey—few of those happen—but many more people will replace a 15-mile car journey with a four-mile metro journey or a one-mile walk. Once you have included that, I think that it is really quite substantial.

[127] **William Powell:** Chair, I have one final question, if I may, and that relates to the fact that the Welsh Government has recently acquired Cardiff Airport, with the intention of developing the number of routes flying out of it. To what extent do you think that there is potential for that, if that strategy continues to prove successful, to bear down on traffic growth on the M4, particularly looking at leakage across to Bristol Airport and hub airports further afield?

[128] **Professor Goodwin:** The first thing to say is that any impact of airport development on road traffic is clearly quite dependent on the provisions made for access to the airport, for obvious reasons. However, I think that what you are talking about is not so much the access to the airport issue as people actually changing their destinations and their mode of transport. I would record that one very serious international study was done some 10 years ago or more and it was one of the first to forecast a decline in car use attributed to the car becoming the slow mode of the future. The report recorded it as being replaced by progressive choice to travel by air to other destinations, as people got richer. I thought at the time that it was a daft idea, but the forecast did predict a decline in car use at a time when everybody else was predicting an increase. I think that it is a serious point. My feeling is that there is a similar problem with the presumption of future aviation growth as with future road traffic growth. The debate, the research and the data are less mature and we have not progressed so far in understanding what happens.

[129] **Julie James:** Good morning. We have heard things in the course of this inquiry around how we would encourage people to make the modal shift that you have talked about. Dr Le Vine, who was here earlier, said that people travelled per year an average of 300 rail miles and 3,700 road miles—I must be putting that up myself quite a lot. He said that if you were to double rail growth, you would be taking very few of those miles off the roads. That is in huge contrast to what you were just saying.

[130] **Professor Goodwin:** The basic arithmetic says that if you look at mode use as a whole—the annual mileage by the average member of the population—you would have to increase rail use by an enormous proportion if that were the only lever to reduce car use. By exactly the same arithmetic, you only have to reduce car use by a very small proportion to double and treble rail use. So, it is a double-edged argument. The averages are not terribly helpful here. There are two specific situations where rail use already has a significant mode share—one is medium and long distance inter-city trips, the other is trips within urban areas of those towns that have urban rail systems. In those cases, the arithmetic is quite different. At one extreme, you have the London case, where the percentages are reversed, and a very small increase in rail and bus use can make a disproportionately big impact on car use.

[131] The general point is wider than that. The alternative sustainable transport strategy most frequently discussed—and given some credit in the consultation document principles, though there is no detail about what it means in practice—is almost never, ‘Well, we must rely on rail’ or ‘Well, we must rely on bicycles’. It is some combination of walking, cycling, rail use, bus use, pricing, information systems, development control of where you put new residents, where you permit new supermarkets and all the rest of it. The combined effect of

those is what seems to have a disproportionately large effect on travel behaviour.

[132] We get a bit hung up on, 'Oh, it's very difficult to change travel behaviour'. We have our habits—one can understand that—but if you are talking about a 10, 20 or 30-year time period, it is not about changing travel behaviour; it is about forming new habits and new patterns of people who had not made their choices yet.

11:30

[133] **Julie James:** On that point, there have been quite good bits of research done by people like Sustrans about personal journeys, perception and so on. One of the things that I was most struck by in that regard was that most people would only modal shift, or develop new habits, if they had certainty. So, for example, you knew that, if you did not buy a car, you could continue to make that journey for the next 10 years without any major implications such as that the route would close or be diverted or whatever. Is that your perception as well?

[134] **Professor Goodwin:** Yes, and there is some evidence for it. Especially in urban areas, it is one of the reasons why it seems to be easier to get a shift from car to rail, metro or tram systems than to bus systems, because people have more confidence that once you have the rail system in an area, it is going to be present. However, there is the point that that analysis is all about people's motivation at this moment and at this point in time. People live on average in the same house for some seven years. Sooner or later, they will move to a new area and then they have to make decisions anew about what mode they are going to use and what their journey pattern is going to be, and things are up for grabs. What it means is that, over a 10-year period, 90% of the population is going to have made some big shift, which has forced them to make some changes. That means that, in the long run, the flexibility of behaviour to change is substantially greater than in the short run. There is evidence on that. In 10 years, the sensitivity is about twice as big as the one year.

[135] **Joyce Watson:** What would happen if we did nothing?

[136] **Professor Goodwin:** With the particular meaning of 'do nothing'—

[137] **Joyce Watson:** If we changed nothing—all modes of transport; the trains were running the same and the road was not altered. So, if we as a Government did nothing in terms of building infrastructure or capacity, what would happen?

[138] **Professor Goodwin:** It is as difficult a question to answer as what would happen if we did something.

[139] **Joyce Watson:** But it is reversed.

[140] **Professor Goodwin:** It is obviously much cheaper. You save a lot of money in that way. I think that one thing you can say is that that does not mean that people are not going to change. There are going to be new products on the market. There will be new tastes, new preferences, new cultural norms, and the mood of healthy exercise may get more or less. All those things keep on changing, so you do not have the option of saying, 'Could 2030 be identical in every respect to 2014?' However, I think that what you do have by carrying out the mental exercise, which is a useful one, is the question, 'So, are there better things we could do with at least some of the money that would take things in the direction that we want to go?' That is an evasion of your question, but then you did not really expect me to give you a firm answer to the question anyway.

[141] **Joyce Watson:** I thought I would pose it anyway.

[142] **Professor Goodwin:** It is a very important question, and it is just as important a question as 'What would happen if we built a motorway, or if we built a metro, or if we have road pricing or whatever?'

[143] **Alun Ffred Jones:** You suggested a strong preference for policy implications that are flexible. Is it possible to have flexibility in terms of heavily congested major infrastructure like the M4, where there is general acceptance that something has to be done? Where does flexibility come in at that point?

[144] **Professor Goodwin:** I accept the point entirely. Generally speaking, investment in infrastructure, once you have done it, is inflexible, and if you get it wrong, there is a downside of spending a lot of money on maybe the wrong thing, or on the right thing but in the wrong place, which could otherwise have been used for other purposes.

[145] By contrast, there are many categories of expenditure and policy that are flexible in the sense that, if you get it wrong one year, you can adapt and modify your plans the following year; maintenance is the classic example of that. With maintenance, you can increase or reduce it and you can change the focus of where it is. Management options to control traffic flow include signalling, information and pricing, and, all of those things, if you get them wrong, you can adjust.

[146] A major motorway provision is flexible only in the very long term. Think of what Birmingham did about the Bullring—they decided that they had got it wrong and they took it out, but it was very expensive to take it out. A metro system is not flexible in that sense, and that is one of the reasons why people are prepared to make their decisions in favour of it, precisely because it is not so flexible. However, generally speaking, what we do that affects the operation, reliability, quality and pricing of travel is flexible, and that is why they are more likely to be robust, even if the forecasts are wrong.

[147] **Alun Ffred Jones:** Are there any other questions? This is the last opportunity. I see that there are none. I thank you, Professor Goodwin, for coming here and providing some fascinating evidence; let us hope that we can make use of it in our report. Thank you very much. Diolch yn fawr. We will just allow Professor Goodwin to leave before we move on.

11:37

Papurau i'w Nodi
Papers to Note

[148] **Alun Ffred Jones:** There are four papers to note; I will not go through them. Are Members content? I see that you are. So, we now want to move into private session. I see that you are content to do so, so I ask for the gallery to be cleared.

Daeth rhan gyhoeddus y cyfarfod i ben am 11:38.
The public part of the meeting ended at 11:38.