M4 Public Inquiry – Proof of Evidence submitted by Pippa Bartolotti, Wales Green Party

Strategic Objectives – The Case for Integrated Public Transport

The aim of this submission is to prove that an Integrated Public Transport (Metro) System is better value, more resilient, and will more accurately reflect the strategic aims of the Welsh Government than any proposed motorway solution.

Metro - Current Situation

The Welsh Government (WG) has identified the South Wales Metro as its flagship infrastructure project for the next decade.

According to the WG the “Metro will significantly improve transport connectivity around the region by reducing journey times and increasing frequency of service.”

Work on the second phase South Wales Metro, with electrification of the Valley Lines, is due to commence in 2019 and be completed by 2022/23, with an indicative price tag of £734m. By contrast the M4 south of Newport is stated to cost £1.2b for just 19 miles of road. (other Metro costs Appendix 1)

Currently the railway line from Cardiff to the Severn Tunnel is being electrified, therefore some of the cost of the Metro on that route has already been paid for.

Debunking the case for the proposed M4 south of Newport

According to the WG website, the stated aims of the WG1 for the M4 Corridor around Newport are to:

a) Make it easier and safer for people to access their homes, workplaces and services by walking, cycling, public transport or road.

The proposed M4 will not provide public transport, cycleways or footpaths, and represents a failure to provide safe transit. The simplest, cheapest and healthiest solution to congestion (Metro) is blocked by a misplaced assertion that more cars on the road will solve congestion problems.

The South Wales Metro will deliver a viable public transport solution which will be safer, faster and cleaner than road travel, with the capacity to expand with demand.

b) Deliver a more efficient and sustainable transport network supporting and encouraging long-term prosperity in the region, across Wales, and enabling access to international markets.

1 http://www.m4newport.com/assets/the-plan---english.pdf Page 22
These aims are not met by building the proposed M4. Average occupancy of cars in the UK is 1.6. The undercapacity of the roads arises from the overcapacity of the vehicles that use them. Every coach/tram swallows up a mile of car traffic and reduces carbon emissions per passenger mile by an average of 88%, helping to achieve global warming reduction targets.

There is almost no traffic joining the M4 from the south due to the nature of the SSSI’s, the low population, and the potential for sea level rise affecting land less than 10ft above sea level discouraging further building. By contrast a Metro system with frequent stations (Fig 1) feeder bus routes, and more northerly position would create many more opportunities for employment along its route, and achieve greater ROI.

Long term prosperity in Newport will be increasingly dependent on the Port as international trade increases in a post Brexit UK. The growth of the Port will be stymied by the low height of the proposed M4 bridge.

c) To produce positive effects overall on people and the environment, making a positive contribution to the over-arching Welsh Government goals to reduce greenhouse gas emissions and to making Wales more resilient to the effects of climate change.

Increased traffic has a negative effect on the environment, on the health of people, and will increase greenhouse gases. The transport sector does not meet its full environmental costs or put a price on other peoples’ lives. The ‘social cost’ of global warming is estimated by the British Government Dept of the Environment to be £70 per tonne. Building more roads will encourage more cars and make Wales less resilient to climate change impacts. Induced demand is a feature of the WeITAG Stage 1 & 2 (Scheme) Appraisal.

Encouraging more cars on the proposed new road will exacerbate traffic congestion east of Cardiff.

The latest report from the intergovernmental Panel on Climate Change (IPCC) is unprecedented in its emphasis on how an urgent and rapid transition away from fossil fuels is a prerequisite of avoiding the 2°C characterization of dangerous climate change. A truly sustainable transport network would be frequent, affordable, and clean.

By building and operating a Metro system across South Wales, demand is likely to increase due to the Sparks effect.

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2 This well-established response is known in various contexts as the Downs-Thomson Paradox, The Pigou-Knight-Downs Paradox or the Lewis-Mogridge Position: a new road may provide motorists with some level of respite from congestion in the short term, but almost all of the benefit from the road will be lost due to increased demand in the longer term.

3 [http://www.m4newport.com/assets/weltag-s1-2-report.pdf](http://www.m4newport.com/assets/weltag-s1-2-report.pdf)

4 Sparks Effect: When you electrify a service, even if the service level remains the same there is an increase in modal shift to rail. This is a proven phenomenon. It also appears when you open a tram stop at an existing railway station.
Ambition

In the last ten years, station footfall in Newport has grown by 35%, Cardiff by 63%, and Severn Tunnel Junction by 120% annually. Cardiff has a footfall of about twelve million, Newport two and a half million, Severn Tunnel Junction is a quarter of a million. Train travel in the UK has grown has grown 74% since 1995 and is increasing.

About 78,000 people commute into Cardiff to work every day; 80% do it by car, many from the east. Making it easier and quicker to do this journey by public transport will cut down car travel and reduce incentive for future travelers to commit to car journeys.

66% of the people who live and work in Zurich travel by public transport. By contrast Newport City has set its sights rather low by hoping to achieve 6 – 7 % of commuters traveling by other than car. This paucity of ambition, and bias towards roadbuilding, is hindering progress in the city.

WG Objectives for the Metro (Appendix 3) are that it should have high frequency, be fully integrated with other modes of transport, be extendable, and a catalyst for regeneration. The scope and ambition of these objectives, if achieved, far excel anything 19 miles of new motorway could deliver.

WG Transport Planning Objectives

By prioritizing early build of the Metro between Magor and Castleton, the existing M4 will be relieved of ever increasing amounts of traffic and therefore meet all Transport Planning Objectives (TPOs) (Appendix 2), negating the need for further roadbuilding.

Employment and Business Opportunities

Every person moving from unemployment into genuine full time employment saves the ‘State’ £78,000 at today’s prices. Getting just twelve unemployed people from Ebbw Vale into full time employment in Cardiff (which could not happen without public transport) would save the state around £1m. It is right that the valley line gets a high priority, but the economic opportunities for getting more people into work by extending the Metro service from Sudbrook Pumping Station to Cardiff and many points in between (Fig 1) are greater than the opportunities provided by the 19 mile M4 proposal – and more cost effective.

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5 Paul Mees – Transport for Suburbia Beyond the Automobile Age

6 http://gov.wales/topics/transport/public/metro/?lang=en

7 David Freud’s report for Secretary of State for Work and Pensions, 2007
The Railfuture (Fig 1) proposal deliberately does not follow the main line around the north of Newport, but picks up the area that at present is only really accessible by car. Maesglas Retail and Business parks, The Docks area, Newport Stadium and the National Velodrome, Nash Campus, Leeway and Queensway Industrial Estates, Spytty Retail Park. Further east it picks up the Wilcrick Distribution Depots (Tesco and Wilkos) that between them employ some 2,000 workers that are incredibly not served by any public transport whatsoever at present. It covers the areas of high population densities Duffryn, Maesglas, Liswerry, Magor, Undy, Caldicot etc. Further extensions (Severnside & Lower Wye) pick up the large Newhouse industrial estate and its associated Distribution depots which are equally not served by any public transport.

The WG has estimated that 7,000 new jobs would be created with the building of the Metro, with a further £8bn in additional economic impact. By contrast the Proposed M4 is claimed to bring 6,500 new jobs with £1.4 billion of increased benefits, but only if the Severn crossing toll is removed, which is unlikely.

Summary

In short, the WG aims for the proposed M4 are the same aims as for the Metro. Yet the overall financial situation in Wales is one of increasing government cut-backs. Wales cannot afford both.

On all measures of cost, return on investment, employment, safety, sustainability, resilience, health and climate change the Metro system outperforms the proposed M4.

The existing M4 is not going to be taken away, and long haul traffic will experience fewer delays and faster travel time across the contested 19 miles between Magor and Castleton if an effective Metro system is in place.

The Metro brings a measurably more valuable, cost effective, and sustainable solution for increasing prosperity than the proposed M4.

http://www.m4newport.com/assets/weltag-s1-2-report.pdf Table 6.7
Appendix 1

Metro systems across the UK

MetroLink Greater Manchester
- Opened: 1992
- Route: 92km, 92 stations
- Extended to Eccles, Media City, Rochdale, Oldham, Airport

Cost: £145m, other phases £160m. £1.4bn
Funding: UK Government, EU, private funding
City Deal: £1bn Bank Investment
Owner/Operator: TFGMD - 10 councils, RATP Dev - French company franchise operator
Time to build: Initially 10 years and phased expansion
Easy ride? UK first modern street running light rail, gradually expanded. Airport link ahead of schedule
Future: Trafford Park line, tram-train expansion

Metro Edinburgh Trams
- Opened: 2004
- Route: 14km, 16 stops
- Airport to city centre

Cost: £276m plus £200m interest on 50 year loan
Funding: Council loans, Scottish Govt
Owner/Operator: Council, Edinburgh Trams
Time to build: 11 years, five years behind schedule
Easy ride? Rows over its cost, route and construction project described as "a hell on wheels" by one executive
Future: Extension would cost £78.7m-£144.7m

Metro Nottingham Express Transit
- Opened: 2004
- Route: 14km, 23 stops growing by 17.8km and 26 stops, now to Chilwell/Clifton

Cost: £200m and £570m for extension
Funding: Council, UK Govt, fare revenue, PFI
Owner/Operator: Public/private mix, Translink
Time to build: 10 years, new phase 4yrs - 6 months late
Easy ride? Extending expecations - now 4 years a year
Future: Possible extension to link HS2

Midland Metro
- Opened: 1994
- Route: 29km and 48 stations
- Around Sheffield and suburb

Cost: £249m
Funding: UK Government
Owner/Operator: SYPTE - four councils - operated by Stagecoach, which owns the trains, until 2024
Time to build: 10 years
Easy ride? Profitable, usually has more than 11m journeys a year
Future: Possible connect with Meadowhall/HST £80m tram-train project plan to Rotherham by 2023
Appendix 2

• TPO 1: Safer, easier and more reliable travel east-west in South Wales.

• TPO 2: Improved transport connections within Wales and to England, the Republic of Ireland and the rest of Europe on all modes on the international transport network. Welsh Government M4 Corridor around Newport Economic Appraisal Report M4CaN-DJV-GEN-ZG-GEN-RP-TR-0001 | March 2016 Page 4

• TPO 3: More effective and integrated use of alternatives to the M4, including other parts of the transport network and other modes of transport for local and strategic journeys around Newport.

• TPO 4: Best possible use of the existing M4, local road network and other transport networks.

• TPO 5: More reliable journey times along the M4 Corridor.

• TPO 6: Increased level of choice for all people making journeys within the transport Corridor by all modes between Magor and Castleton, commensurate with demand for alternatives.

• TPO 7: Improved safety on the M4 Corridor between Magor and Castleton.

• TPO 8: Improved air quality in areas next to the M4 around Newport.

• TPO 9: Reduced disturbance to people from high noise levels, from all transport modes and traffic within the M4 Corridor.

• TPO 10: Reduced greenhouse gas emissions per vehicle and/or person kilometre.

• TPO 11: Improved travel experience into South Wales along the M4 Corridor.

• TPO 12: An M4 attractive for strategic journeys that discourages local traffic use.

• TPO 13: Improved traffic management in and around Newport on the M4 Corridor.

• TPO 14: Easier access to local key services and residential and commercial centres.

• TPO 15: A cultural shift in travel behaviour towards more sustainable choices.
Appendix 3

WG Transport Planning Objectives for the Metro

High frequency
Metro will run at least four services an hour across the whole network when needed and even more on busy sections. This gives a 'turn up and go' experience for passengers using vehicles designed for speed and capacity.

Integration
Metro combines heavy rail, light rail and buses to deliver a seamless network. With just one ticket, people will be able to move quickly and easily across the region. It also links with active travel – cycling and walking – to create a completely integrated network.

Extendable
Metro is designed so it can grow to make it even more accessible. New stations, new routes, increased frequencies – in future, the network can bring better public transport to more communities and economic centres.

Regeneration
Metro will deliver better passenger facilities and community focal points around key stations, and stimulate opportunities for more strategic development and regeneration across the region.