

The South Wales Metro rail project needs to do far more for Cardiff

The Welsh Government and its transport body, Transport for Wales (TfW), can't claim to be delivering Metro services for Cardiff, if half of its stations (10 out of 20) are only getting two trains per hour (2tph) once the Core Valley Lines (CVL) transformation is completed and new Stadler tram-trains and FLIRT trimodes are operating across the network in 2024.

Anyone who knows just a little about transport planning, passenger behaviours and the geography of Cardiff, will quickly spot that offering a service every 30 minutes for trips of probably less than 20 minutes, is not going to attract passengers. Whilst people are generally happier to wait longer for longer trips – so 30 minutes for a journey of an hour or more – they are less inclined to do so for shorter trips.

This reality will apply to all the stations on the Coryton and City lines in Cardiff, that will, as far as the passenger is concerned, see no meaningful improvement in services when Metro is operating compared with today – so at Danescourt, Fairwater, Waungron, Ninian Park, Birchgrove, Rhiwbina, Whitchurch, Coryton, Ty Glas, etc). It also makes no sense to be offering 2tph at these station whilst at the same time operating 10tph through Llandaff and Cathays to Queen Street. The Metro service offer in Cardiff is completely unbalanced and does not reflect latent demand. The direct service between the City and Coryton Lines will also be lost.

The reality in Cardiff is that without an attractive public transport offer, people will almost certainly get into their cars instead – as they do now.

The capital city is the most populated and densely populated part of Wales; in fact, the Cardiff built up area is one of the most densely populated in the UK. So, whilst I support getting 4tph to the Heads of the Valleys to Rhymney, Merthyr, Aberdare and Treherbert, it makes no sense to do so whilst not offering at least the same service frequency where it will be operationally more efficient (less vehicle miles required) to deliver 4tph (City and Coryton Lines) than any other part of Wales.

The reasons we are constrained to 2tph are limited capacity through Network Rail's (NR) Cardiff West Junction in Canton and a single-track section on the Coryton branch line. These are well known issues which go back 20-plus years and which I first highlighted in the Metro Impact Study report back in 2013.

Fixing the Cardiff west junction in Canton to enable 4tph on the City Line was originally planned to be addressed as part of Network Rail's Cardiff Area Signalling and Renewals (CASR) project in 2012-15. However, inexplicably, this requirement, or so I understand, was value engineered out by Network Rail and the UK Government's Department for Transport (DfT). This has in effect transferred a cost/liability onto the Welsh Government/TfW through the constraints on CVL operations as a result. For DfT/Network Rail not to be addressing this issue in parallel with CVL transformation works is at best an odd look.

Similarly, the requirement for 4tph on the Coryton Line was set out by Welsh Government/TfW in the original tender specification for bidders for the Metro in 2016, but again, inexplicably, watered down by Welsh Government to just 2tph. This makes absolutely no sense – especially given the demographic realities and our collective net zero Wales mode shift obligations. It is also abundantly clear, that like the Bay Line, the Coryton Line with its close station spacings, should be designated and operating to tramway non-mainline

standards using tram-trains – the same is true of the Rhondda branch (which will have Metro vehicles).

These were both, and still are, manifestly very poor decisions. Given inflation, we are likely to see the final bill for the Metro coming in at around £1bn. So, not to be spending a further estimated. £30-40m to address these glaring issues is a false economy. Doing so will almost certainly result in a more efficient and reliable network able to attract more passengers than that anticipated in 2024. It is also a poor use of expensive capital infrastructure not to be maximising its full potential So, to be bequeathed this infrastructure and not be making best use of its capacity through a densely populated city is at the very least a questionable strategy, if not irresponsible.

A brief look at the relationship between passenger numbers and rail service frequency in Cardiff is instructive. There is clearly a link between more demand and higher service frequency. This is especially true since most of the stations have broadly similar catchments.

For example, Birchgrove (on the Coryton Line with just 2tph) has a comparable local residential catchment population (8,000 to 10,000 people within 800 metres) as Llandaff north which already has 5/6 tph with 10tph proposed. But Birchgrove only had (pre-covid) 75,000 passenger compared with Llandaff north of over 600,000. So, frequency matters.

In fact, the 800 metre catchment of all the City Line and Coryton Lines stations are broadly similar at typically 6,000 to 12,000 people per station. These are higher than many stations on the CVL in RCT, Caerphilly and Merthyr where 3,000 to 8,000 is more typical and in aggregate each line has a natural catchment of approximately 20,000 to 30,000 people.



(Image: WalesOnline/ Rob Browne)

I think it is pretty clear, looking at service frequency, demand and catchment population, that there is significant latent demand for increased services of at least 4tph on the Coryton and City Lines. I would suggest doing so would generate at least two million more passengers per year. I actually procured a socio-economic benchmarking study exploring station demand about 10 years ago which came to broadly the same conclusions. The potential uplift in demand once we connect Coryton to Radyr to pick up the many movements east-west across the north of the city (which today are predominantly car-based) is even more significant, demonstrating the strategic importance of the full Radyr-Coryton "circle" connection.

I have raised this issue "politely" on multiple occasions over the last few years, but now I am saying again, you can't claim to be delivering Metro in most of Cardiff if many of its stations are stuck at 2tph. This is in contrast to all of RCT,

Merthyr, Caerphilly, Vale of Glamorgan whose CVL services will be at least 4tph at all their stations (despite many such stations having smaller catchment than the City Line and Coryton Lines. The Ebbw Valley branch is currently in receipt of £70m to increase its service frequency with plans for a full 4tph in development.

Further development funding and more importantly capital funding needs to come forward now to address these glaring omissions on the City and Coryton Lines in Cardiff.

In fact, getting the City and Coryton Lines fixed to enable a minimum of 4tph is a higher priority, in my opinion, than all the further new CVL stations proposed, the Cardiff Crossrail/north west corridor (in phases), Aberdare to Hirwaun, as well as current plans to deliver 4tph to the Heads of Valley on the CVL.

I would also note that getting Maesteg Line services from 1tph to at least 2tph is also a glaring requirement – and needs minimal works on Network kit on that line to enable this could cost less than £20m..

More positively the Welsh Government,, Network Rail, Cardiff Council and TfW have been making good progress on developing options to address the immediate tactical Cardiff west issue in the last two years. However, some of the foot dragging on finding the capital funding is very disappointing, as are arguments vis a vis Coryton that pivot of a low service frequency /demand baseline claiming, erroneously, that there is no demand, latent or otherwise. This is so “heavy rail” and wrong.

What needs to happen

Funders, both UK and Welsh government, need to stop prevaricating and fix this, as our net zero Wales target and decarbonisation and mode shift obligations require it.

The UK Government and its DfT must lead on Cardiff west (on Network Rail kit) and Welsh Government/TfW on the Coryton Line work on the CVL (Welsh Government kit). I appreciate the challenges of, and focus on, delivering the current programme – but these fixes need to be bolted on with urgency. Only then can we claim to be delivering a Metro for Cardiff.

The easy service fix, subject to the usual caveats, is once we have addressed the infrastructure constraints at Cardiff west and Coryton Line, is to take 2tph of the 10tph tram-trains planned to run from Radyr through Llandaff to Queen St and Central, and instead divert them from Radyr down the City Line instead, and then through Central, Queen St and onto Coryton so retaining a direct link across the city as we have today. There are some variants of this option depending on how you treat planned Penarth services.

This will result in just 8tph at Llandaff and Cathays but deliver a minimum 4tph everywhere else in Cardiff.

From an operational perspective it also delivers the 4tph on the Coryton line without having to increase the number of services through Queen St north junction (planned to be 18tph) which given retention of heavy rail block signalling for the CVL is more of a constraint than, for example, a light rail system using a line of sight tram control system.

Aside from being a far more balanced and equitable distribution of rail service capacity across the city, more strategically, this work will enable the longer-term vision for the Metro in Cardiff . This is more than just Cardiff Crossrail, Cardiff Circle, north-west corridor, more stations, etc. It's about making much better use of the existing rail infrastructure and much more overt rail/bus/active travel integration at every station, to enable a high quality integrated multi-modal public transport grid across the city.

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