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**Gerry Duggan's: Submission to MetroLink Railway Works Application**

## 1. Genesis of Current MetroLink Railway Works Order Application

To understand the present proposal it is necessary to understand its genesis.

The RPA's original Railway Works Order Application for the development of Metro North, was for it to run from Swords to St. Stephens Green.

At the oral hearing I submitted that rather than ending in a roundabout under St. Stephens Green, as proposed, it should have been extended to connect with the Luas Green Line at Ranelagh.

The Railway Works Order approved the RPA's proposal.

Metro North did not proceed due to the financial crash.

When the Metro proposal was being revived I separately met with both the Chief Executive of the NTA and with the Chair and executives of TII.

I provided both with the information I had gathered, including calculations showing it was just possible for the Metro tunnels to pass under the 4m dia Grand Canal Drainage Tunnel and come up behind the former Irish Nationwide offices to join the Luas Green line at the Ranelagh stop.

In addition I provided TII with a copy of the paper presented to The Institution of Engineers of Ireland in the early 1970's on the design and construction of the Grand Canal drainage tunnel.

NTA subsequently published the MetroLink's proposed alignment and station locations, from Swords to Sandyford, including provision for a station at Charlamont. I immediately recognised that this was not feasible, due to the gradient required at that location, to pass under the drainage tunnel and rise up to the Ranelagh Luas stop.

When the detailed design drawings were put up on the web I saw that allowance had not been made for the existence of the Grand Canal drainage tunnel, as the North-South MetroLink tunnel was shown to be at the same level as the 4m diameter West-East drainage tunnel.

I immediately contacted the Chief Executive of TII and advised him of the problem. At that stage it would have been possible to complete the MetroLink, as proposed, if the Charlamont stop had been eliminated. Now it is not possible, due to development on the Irish Nationwide site, and the potential to increase capacity on the Luas Green Line, from Sandyford to Ranalagh has been lost.

As a result of this and other problems with the proposed design the NTA withdrew that proposal, without explanation. Subsequently the NTA proposed a wholly different design, using a single bore tunnel, driverless, high floor trains with platform screens, to run from Swords to Charlamont.

The NTA said that it would be possible to connect that line to the Luas Green Line at a later date but it would require suspending Luas services for a number of years, while the necessary works were undertaken.

As a result of that, and the requirement for raised platforms and platform screens at stations from Beechwood to Sandyford, which would effectively create a barrier to cross line movement along that section, this proposal was unsurprisingly rejected, by both the public and politicians.

These problems virtually all arise from the decision to route MetroLink via. Tara Street, to provide an interchange with the DART at that point. This has resulted in the requirement to demolish the 70 College Gate apartments, the Markievicz Leisure Centre and eight Dublin City Council homes, at a time of acute housing shortage in the city.

It also resulted in having to route the line under Trinity Collage's Eastern Campus and it being routed under St. Stephen's Green East, rather than St Stephen's Green West, where the obvious Luas interchange could have been provided, as was envisaged in the original Metro North proposal.

The requirement for an interchange at Tara St. appears to be driven by NTA's view that the DART Interconnector, from Docklands to Heuston Stn. via Pearse Stn. and St. Stephen's Green was not necessary, although a Railway Works Order for the construction of the DART Interconnector was granted, which has now expired

**Yet the DART Interconnector it is considered by many to be the most critical and cost effective means of substantially increasing rail capacity in Dublin City, of providing a fully integrated heavy rail, Metro and Luas network, and relieving congestion on the M50 and approach roads.**

We are now left with a truncated MetroLink whose design creates problems at Tara St. Trinity College and Charlamont and which fails to address how problems in the South West Quadrant of Dublin City, which has the worst public transport and road network in the city, could be resolved in the future.

**Given the history of this project and the problems outlined above it cannot be concluded that the present alignment, south of O'Connell St. is the correct or most appropriate solution.**

**Overall this scheme, as designed, does not justify an expenditure of in excess of €10Bn.**

**2. Additional Fire Risk Problems with Single Bore Tunnel Design**

At the Metro North oral hearing, which was for a twin bore design, the RPA's expert witness on Fire and Life Safety, Mr Tom Keeper, stated that *fire safety engineering in a metro system has a number of peculiar problems.*

He listed 10 of them and then went on to discuss how they could be addressed. In the section on Tunnels and Track he included *means to escape* and recommended the following measures

5.2.1 *Tunnels and cut and cover sections will have an access walkway at platform height, situated adjacent to the track, to allow passengers to leave the vehicle at any point and proceed in a safe manner to the nearest cross passage portal or escape shaft.*

*5.2.2 Tunnels will have cross passages, with fire doors at both ends, at distances not exceeding 250m, to allow escape from one tunnel to another. Within cut and cover tunnels fire doors will be provided in the fire wall separating the tracks at similar intervals.*

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## 2. Alternative Solution

The alternative is to recognise that the final network does not have to be developed initially, but that the design proposed should allow for relatively easy extension, in the future, and for integration with other rail networks. This was clearly demonstrated with the Luas development where the original network, which I devised, was subsequently extended to Saggart, Brides Glen, The Point and Broombridge, with further extensions planned.

The present MetroLink proposal does not meet this test but it would if, instead of being routed to Charlamont, via Tara St. it was instead routed from O'Connell St. to St. Stephen's Green West and Cathal Bruagh Barracks.

This would facilitate its extension to the South West Quadrant of the city at a future date and for its further integration with the heavy rail network, when the Dart Interconnector is completed. The resulting fully integrated rail network is contrasted with the NTA proposal in the following page.

This solution would eliminate the problems at Tara St. Trinity College's East Campus and Charlamont and would make maximum use of the design work done on Metro North, thus shortening delivery.

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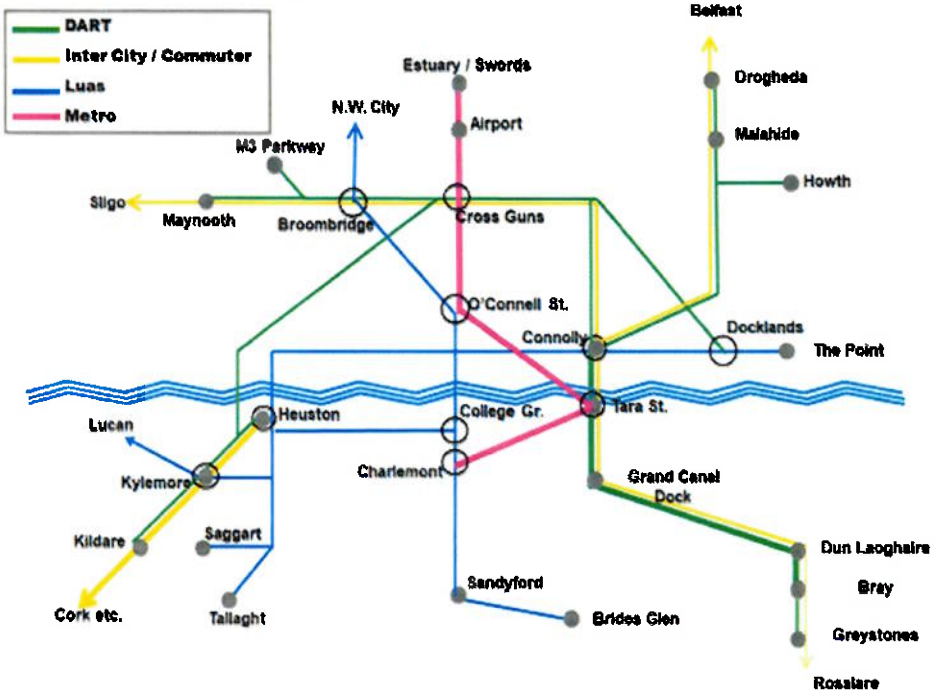
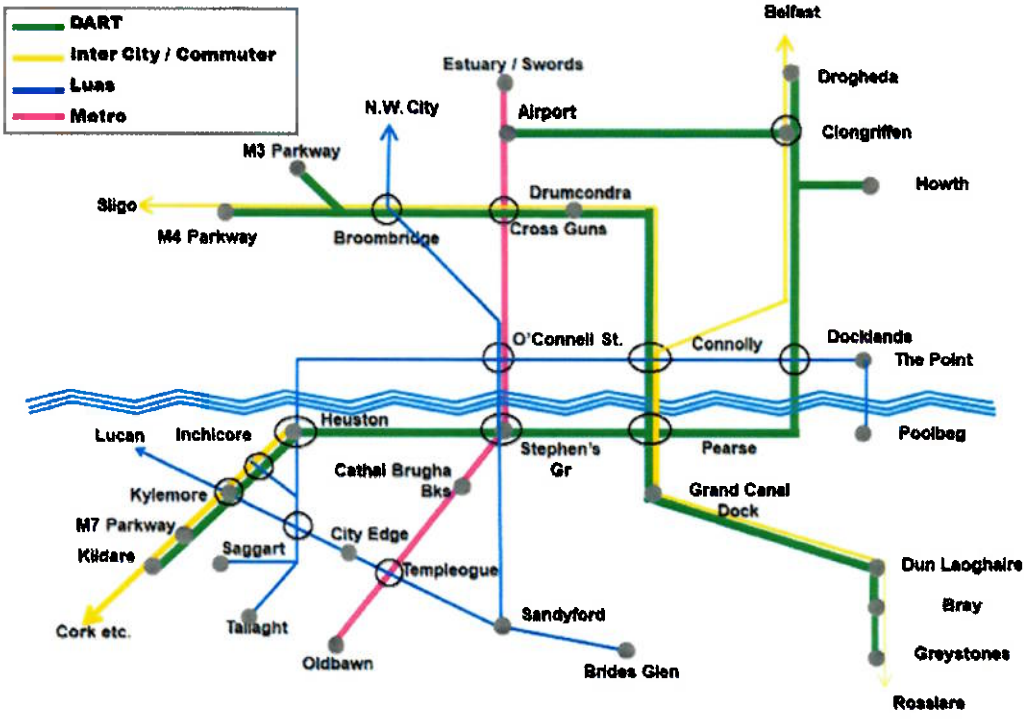
**Overall this scheme, as designed, does not justify an expenditure of in excess of €10Bn.**

## NTA's Proposed Dublin Rail Network 2035




## Alternative Integrated Dublin Rail Network 2045



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The question is, have the Dublin City and County Fire Services confirmed that they will have the capability to deal with a tunnel fire, in a single bore tunnel, and ensure the safe evacuation of passengers?

We saw from the Grenfell Tower fire the tragic consequences when engineering design and fire service capability are not aligned