



DART+ West Public Consultation

Submission to Irish Rail

21 October 2020

About Us

Rail Users Ireland is Ireland's National Rail Users Organisation, We are objective observers and customers of Ireland's rail transportation network. We want the provision of excellent customer service to rail transport users and international best practice applied to the development of Mainline, Suburban, Metro and Light Rail transport in Ireland. We are ordinary rail users just like you, and we aspire to being your voice in the media and at Operator/Government level. We are a member of the European Passenger Federation and are thus recognised at EU level.

For more information contact:

Mark Gleeson +353 (0)86 864 2583 mark.gleeson@railusers.ie

Thomas J Stamp +353 (0)85 771 4950 thomas.stamp@railusers.ie

Web: <http://www.railusers.ie>

Postal Address: Rail Users Ireland
C/O Thomas J Stamp
Clonboo
Templetouhy
Thurles
Co Tipperary.

Summary

We express our full support for the DART+ West project, a significant and long overdue contribution to the provision of a world class urban transit solution for Dublin.

We are however obliged to call attention to the fact this proposal is a compromised solution which undermines the future case for DART Underground and results in a suboptimal service pattern which will result in operational challenges.

Engineering Solution vs Passenger Focus Solution

The proposal delivers on passenger numbers but doesn't bring passengers to where they want to go. For many a change of trains or use of a bus or tram will now be required to complete their journey. The goal appears to be to get people to the city centre and abandon them anywhere within the canal cordon without any provision for onward connectivity, this is not acceptable.

Abandoning passengers at a new station at Spencer Dock which provides zero onward options to southside destinations and enforces a backtracking towards Connolly on a tram and in doing so adding time and cost compared to existing journeys is far from ideal. Proposals to terminate yet more services at Connolly station are unworkable as there is insufficient capacity southwards to accept transferring passengers.

Much if not all of the proposed capital spend at Dublin Connolly, Glasnevin Junction and Docklands/Spencer Dock would not be needed if DART Underground were to be built first. The proposed works at these locations are of such a scale, cost, and impact that prolonged disruption over many years is likely.

Electrification

The electrification system should incorporate energy recovery through regeneration of braking energy to the national grid or provision of battery storage to absorb energy. The current DART system does regenerate but only within the DART network, regeneration to the national grid or battery could deliver significant energy savings and reduced usage of carbon-based brakes which release carbon dust into the air. This could also permit the removal of the rheostatic brake elements from the train thus reducing weight while also increasing the life of brake discs.

While this will not alter the number of substations required it may impact the size/layout of the buildings required to host them.

Trains

It has been indicated a battery hybrid train will be purchased, while not officially stated this is due to a lack of confidence in funding for the project which may delay/cancel the electrification. This will require further equipment installation for charging and care must be taken to ensure facilities are available not just at the terminus points but also at Clonsilla. This is not identified in the documentation provided.

Of course this is wasted investment, an additional purchase cost of €100 million on the proposed fleet of 100 carriages alone to operate as battery hybrid. We strongly urge Irish Rail to abandon the hybrid plan and order an electric only train which will be cheaper, lighter and more reliable. The lifecycle cost based on Irish Rail's own numbers is an additional €1.9 million per coach over the reference electric only train over 30

years.¹

DART vs Long Distance Services

Provision for a third centre track between the city and Clonsilla either in part or throughout should be investigated to ensure services to Longford, Sligo and possibly Navan in the future are not penalised by the DART frequency.

If this suggestion is ignored it is clear journey times to Sligo and Longford will increase, at the very minimum passive provision should be made in terms of structures to allow for future upgrade to a third track.

Level Crossings

We support the closure of all level crossings on the route. At current frequency levels level crossings have prolonged closure times which delay road traffic but also impede pedestrian access to stations and delay trains. Damage to level crossings by vehicles and bad weather are key delay minute generators on the rail network .

The proposed service frequency will be significantly greater that of the existing north/south DART line. We cannot see any solution where retaining any level crossing would be feasible, except were it was agreed that a full closure between 7am and 9am and 5pm and 7pm daily would be required. We cannot see how this arrangement could be acceptable.

Over the railway clearance of any new bridge should meet/exceed current EU TSIs to allow for standard height double decker trains and 25kV ac electrification in the future should such come to pass. The bridge should also allow for a third track for future expansion.

Where an underpass solution is selected, again space for a third track for future expansion should be provided. An engineering solution should be incorporated to prevent oversized vehicles. This should be in the form of a structural bridge bash beam situated a reasonable distance from the bridge itself and mounted on a separate foundation. In the interests of protection of rail traffic. This should be provided even if the height clearance exceeds TII/NRA standards.

Where an overbridge is proposed, a containment solution should be incorporated to ensure any vehicle is prevented from mounting the pavement and colliding with the parapet. In the interests of protection of rail traffic and pedestrians.

It is clear the proposals put forward will have significant impacts on local communities, similar concerns were raised during the replacement of Reilly's level crossing between Broombridge and Ashtown. The replacement of this level crossing with a bridge in this case eliminated local traffic delays and significantly improved road and pedestrian safety while at the same time eliminated delays to rail services common in the past.

¹ Per coach purchase price €1.5 million vs €2.5 million, maintenance at 2019 prices over 30 years €0.9 million vs €1.8 million. Numbers per Irish Rail presentation to Engineers Ireland April 30, 2019

Stations

Stations should have level/step free access provided on both sides to maximise accessibility and minimise walking distance to the station. Ramps are preferable over lifts. Each access point should be provided with ticket selling and validation equipment and passenger information.

Multiple exits if possible, to maximise local access.

Well-lit, covered, and secure bike parking should be provided at all stations

Regardless of current or future plans, provision for bus stops with appropriate parking bays and shelters should be provided at/adjacent to all stations.

Open plan stations without turnstile barriers are desirable to reduce station size and improve passenger flows.

If the new DART fleet are not to have toilets, provision should be made at key stations, e.g., Maynooth, Clonsilla, Glasnevin.

Spencer Dock

Any station solution must include provision for a station box for DART underground, minimum 180 metres long with space for an island platform and provision for a ramp up for the required tie in at/near Church Road junction. This should incorporate the reception portals for the TBM's for the tunnel.

Effectively the design would require all lift shafts, stairs, etc to be built as part of the project and done in an integrated manner to ensure ease of passenger transfer in the future from surface station to underground.

Such advanced provision of a station box where later access will be impossible is common, e.g. Heinrich Heine Alle station in Düsseldorf, Germany where the station box for the Wehrhahn line was built in the 1980s but was not fitted out and brought into service until 2016.

Newcomen Junction

The suggestion to remove the Newcomen Curve is unacceptable and removes a very useful piece of infrastructure. As the Newcomen Curve was built under a parliamentary act, there would be a complex legal process to close it.

While the construction cost/time/disruption will be high, reconstruction of Newcomen Bridge to provide sufficient clearance is highly desirable to allow a conflict free method of operation. There is also an option of dropping the level of the canal in the area. Connolly Option 6B as the recommend option in the Jacobs report recommends this option as do most of the reviewed options recommend retention or double tracking of the Newcomen Curve.

The condition of the Newcomen road bridge appears to be poor and its replacement now would be less disruptive than later.

Installation (reinstatement in fact) of two tracks from Connolly to Newcomen Junction is desirable. All

Maynooth bound services would then operate Connolly - Newcomen Junction - Glasnevin. This would eliminate conflicting movements at Glasnevin Junction and increase capacity at Connolly station.

Drumcondra

A case should be made to provision a station in Drumcondra on the Midland line, It would be logical to link both stations through an underground passage.

Owing to increased usage a solution should be found to improve accessibility of the existing westbound platform at Drumcondra to avoid the need for the footbridge and use of two lifts as is currently the case.

Glasnevin Junction/Station

The complex diamond junction proposed goes against industry practice of conflict free operation by creating a complex junction with conflicting service patterns. Ideally only Sligo/Longford services should actually cross between the Midland and GS&WR lines.

Dependency on Metrolink, the station forms part of the Metrolink plans which only exists on paper currently. Even without Metrolink, Glasnevin station would form an important point of transfer between services from Maynooth, Hazelhatch, Connolly, Docklands and Dublin's southside.

A solution must be found to ensure the station as proposed by Metrolink is built by whichever project takes place first. So, the railway works order for both DART West and Metrolink will both require this station to be present on each of their plans. The station box for Metrolink must be built in conjunction with the station.

Broombridge - Glasnevin

Intersection of the GS&WR line, Midland Line and Luas provides a location for a further transfer station in an area lacking in public transport.

Broombridge

Provision should be made to allow Broombridge to operate as a terminus either Eastbound or Westbound during times of disruption to maintain the link to the Luas service to provide onward travel options. This has impacts on the signalling and electrification design.

Given the proposals to terminate services at Spencer Dock and Connolly a large number of passengers are likely to transfer at Broombridge to access the CBD and southside. A modelling exercise is required to assess Luas capacity is sufficient accounting for the Finglas extension. An additional footbridge will likely be required to cope with peak flows.

Kilcock

Capital cost to extend the line is minimal as the first 3-4km is already committed by the depot location.

Only a limited service would be required. 2-3 trains per hour would be easily accommodated within the short single track section to Kilcock.

Given the need for two connections to the mainline for the depot, trains may have cause to depart to the West, reverse and then proceed towards Maynooth, allowing for the worst case, 8 coach train recovering a 8 coach train (330m), the electrification will be required to extend to a point where Kilcock will only be a matter of a few hundred meters away.

A passing loop at Kilcock would also assist in the better timetabling and recovery of service on the busy section to Mullingar to avoid importing delays into the DART section.

This would have the benefit of releasing platform capacity at Maynooth and leverage the restored section of twin track provided westward from Maynooth to the proposed depot. The plans at Maynooth show no additional platforms and we submit for the service level proposed and the need to support services to Longford/Sligo, Maynooth as a terminus is unworkable without additional platforms. An extension to Kilcock may address this at lower cost than major works at Maynooth.

Kilcock also would aid in distributing the load in terms of park and ride users and peak boardings.

Connolly

Currently services struggle through this area, signaling upgrades will provide marginal improvement, but without significant additional physical infrastructure we cannot see any solution.

Despite concerns as to passenger flows no reference is made to reopening the existing but closed 'Suburban Station' at Connolly station which provides direct access to platforms 6/7. This requires minimal investment and could be delivered in a matter of weeks.

Elimination of conflicting movements would avoid the need for the complex platform modifications proposed in the do something scenarios.

Provision of DART underground in advance or in parallel do DART West would avoid all these issues, but it is unclear when if ever DART underground will be built, with this in mind there is long term value in our opinion to consider two significant infrastructure upgrades at Connolly which the Jacobs study did not consider.

- A flyover starting just north of platform 7 which rises up over the existing tracks and reconnects just short of East Wall Junction. This would allow northbound departures from platform 7 to operate without the current conflict with any trains to/from North Strand/Ossary Rd Junction.
- A second flyover starting north of platforms 5/6 which rises up over the existing tracks and reconnects just short of East Wall Junction is also a possibility but presents challenges in terms of clearances to maintain the link between platforms 1/2/3/4 and North Strand Junction.