Metrolink Railway Order 2022

Comments on TII Response to my Observations

(ABP-314724-22 Submission 205)

Dr. Nicholas Mansergh

March 2024

10

I'm here because…

a section in a book due to be published shortly *(The Irish Construction Cycle 1970-2023 – policies and escape routes)* argues that the tendency to select high-cost ways of meeting infrastructure needs in Ireland results in extensive queuing of projects, with many such needs remaining unmet for long periods. Metrolink is one of the examples I have used to illustrate this argument.

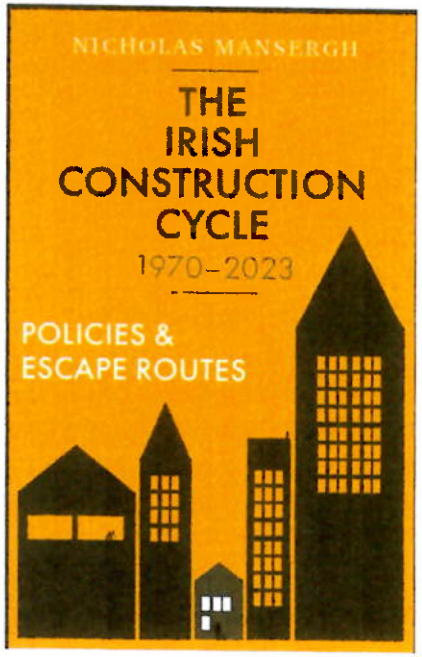
These examples focus on the initial stages of the project planning process, in which the most expensive generic option is preferred, with the lower cost alternatives they are compared with being placed at a disadvantage. In the case of Metrolink, this was accomplished in the 2015 AECOM North Dublin/Fingal Transport Study. This report remain the basis on which the metro option was selected.

As it would be difficult to justify making my views on this highly questionable selection process public, too late to have any influence on decisions on Metrolink, I submitted my comments to the Board. TII's response is to some extent at cross purposes to my own observation, so comments below include an element of clarification.

Format: For ease of reference, I have reproduced the relevant pages of the Metrolink submissions table on left-hand side pages, using a larger font to make them easier to read, and with key words or phrases in **bold.** My comments on TII's response to my submission are in the inner column of right-hand pages (i.e. this one), and the right-hand column on right hand pages has been used for supporting material.

Qualifications and Experience

Brief summaries are contained in Boxes 1 and 2.



Box 1. Qualifications:

M.Phil in Town Planning, University College, London. (1975)

Fellow, Center for Metropolitan Planning & Research, Johns Hopkins University, Baltimore (1979-80)

Member, Irish Planning Institute, 1982+

Research Fellow, UCC, (1996 -8)

PhD, UCC (2001)

Box 2. Experience:

Assistant Planner, Cork Corporation, 1976-9; seconded to land use and transport sides of *Cork Land Use Transportation Study*, 1976-8.

A/Senior Executive Planner, Cork Corporation, 1981-91, led forward planning section, Coordinator, *Review of Cork Land Use Transportation Study*, 1990-91.

Senior Executive Planner (forward planning section) Cork Co. Council 1991-6

Senior Planner, Co. Council, 2000-2015; development control (S. Cork) to 2007, then Cork Harbour Study, SDZ Design Team for New Town at Monard.

Submission No.	205
Organisation Name or Name of Submitter	Nicholas Mansergh - The Cottage, Wellington Square, Cork

Item No.	Section Ref.	Page No.	Observation Statement	TII Response
Metrolink submission: Observation on Railway (Metrolink - Estuary to Charlemont via Dublin Airport) Order, 2022 (case reference; NA27N.314724)				
1	Letter	1	The purpose of this observation is to draw attention to the flawed manner in which the option which developed into Metrolink was selected by the Fingal/North Dublin Transport Study (AECOM, 2014, 2015). In the 'alternatives considered' section of the EIAR (volume 2, chapter 7), this study is put forward as the process by which the metro option was selected from a list of 25 alternatives. It was the point at which a metro proposal was readopted, and other light or heavy rail or BRT-based alternatives rejected, and subsequent development of the Metrolink project has developed from that recommendation. Of the 25 possible schemes examined in the first stage of this study, four survived for appraisal in the second stage. The cost of the option derived from Metro North, having initially been costed at €2.5-3 billion, was then 'optimised' by reducing capacity to 12,000 per hour in each direction, shortening platforms, and bringing a previously tunnelled section between DCU and Dublin Airport above ground.	The selection of the option which was developed into MetroLink was part of the Fingal/North Dublin Transport Study (AECOM, 2014, 2015), and is therefore **outside of the EIAR** and Railway Order application. As indicated, Chapter 07 (Consideration of Alternatives) presents the decision-making process that has led to the proposed Project, including the main reasons for choosing the proposed Project. The assessment includes alternative options using heavy rail, light rail, Bus Rapid Transit (BRT) as well as combination options. The assessment identified an Optimised Metro North (LR7) as the best medium- and long-term transport project for the Greater Dublin Area for the following reasons: - It was the most economically advantageous scheme when compared to other options, delivering the highest **benefit to cost ratio (BCR** of 1.5), almost double the BCR of the next best scheme (Tunnelled Luas); - It generated the highest level of **transport benefits** when compared to other options, with the highest number of additional public transport benefits generated in morning peak travel period;

ITEM 1 – EIAR on selection of Metro Option

The EIAR summarises the alternatives considered in AECOM's Fingal/North Dublin Study at some length (Vol. 2, section 7.3.1), refers readers to this study for further detail, and then states its 'Main Reasons for Choice' between alternatives in section 7.3.2, its choice being AECOM's LR7 ('optimised Metro North') one. These sections of the EIAR cannot credibly be separated from the AECOM Study.

ITEMS 1 – 3: TII Response on Assessment of Alternatives

(a) *Implications of unfair comparison of LUAS and Metro costs:* If the process summarised in Box 4 indicates AECOM's treatment of capital costs was unfair, then so are its conclusions on the BCR of these options. LR3 was excluded on capacity grounds prior to economic evaluation, so its BCR is unknown. Advantages identified in an MCA need to be weighed against the extra costs of achieving them. AECOM did not accept there were extra costs, but this is not credible.

(b) *Difference in economic benefit consists in small time savings:* Systra's 2018 CBA of Metrolink showed most user benefits were travel time savings (Box 5). AECOM showed a 6 minute difference between Metro and (untunnelled) LUAS options (Box 6). The difference in time savings accounts for almost all the difference in their NPVs (Box 7). The value of individually small time savings is questionable, as they rarely allow another activity to be fitted into user schedules, but if multiplied by a very large number of users and valued on a per hour basis, can come to an impressive (but overvalued) total.

Box 3. Obligation to describe alternatives in an EIAR

Under Directive 2014/52/EU (EIA directive), a EIAR should include:

'a description of the reasonable alternatives studied by the developer, which are relevant to the project and its specific characteristics, and an indication of the main reasons for the option chosen, taking into account the effects of the project on the environment'.

Box 4 Optimisation & 'Pessimisation' of Options in AECOM Report

Option	Description	Changes (relative to option in line above)	Cost (€ bn)	Refs*
LR3	LUAS		1.27	p.110
TLR3	Tunnelled LUAS	+ 2.5 km tunnel under CBD; via Swords bypass, not Main St.	2.24	p.112
LR 6	Metro North		2.5-3.0	p.47
LR7	Optimised Metro North	Shorter trains, platforms; less of line in tunnel; 1 station omitted	2.33	p.34

Box 5 Metrolink Transport User Benefits

Transport User Benefits:	Value (€m)	%
Public Transport Time	5319	78
of which		
Business	*912*	*13*
Commuter	*1207*	*18*
Consumer	*3200*	*47*
Road User Time	622	9
Other	836	12
Total	6778	100

Source: Systra Metrolink Scheme CBA, 2018, p.17

Box 6 Travel Times, Airport – O'Connell St. (AECOM, p. 103, 128)

	LR3 (LUAS)	LR7 (Metro)
mins	25	19
refs	p.110	p.128

Note: All page references to AECOM in these comments are to their 2015 report

				• It provided a new strategic public transport corridor, avoiding reliance on either the existing heavy rail lines or the Luas Cross City line; • It delivered a connection right into the centre of the city, serving O'Connell Street and St Stephen's Green; • It retained the opportunity to extend Luas Cross City to Finglas, which would not be feasible if the tunnelled Luas options were selected, and it avoided reducing the service level on Luas Cross City to Cabra and Broombridge; • Due to the high level of **segregation**, it was considered to significantly increase capacity to allow for potential future growth along the corridor, when compared to other options; • It could potentially be extended southwards in the longer term to alleviate high travel demand on the Luas Green Line, and ultimately form a complete north south metro corridor traversing both the north and south city; and, • This option delivered the highest safety benefits when compared to other options.
2	Letter	1	By contrast, its light and heavy rail competitors, initially costed at €0.5-1.05 and €1.2-1.5 billion respectively, had become more expensive in the second stage, at €2.24 and €1 .83 billion, and similar to the optimised metro (€2.33bn). Their cost advantage having largely been removed, cost benefit analysis showed they had negative net benefits, while the optimised metro one had strongly positive ones (AECOM, 2015, p.49, 51, 55, 124, 134, 157, 164) The light rail option ('LR3') followed much the same route as the metro north of the city centre, before connecting into the recently extended LUAS Green Line in Cabra. Its cost doubled between stages one and two of the study, mainly because it was decided that a 2.5 km section would need to be in tunnel in the city centre. Leaving it on street would limit trams to a three minute maximum frequency, which would leave no spare capacity by 2033 (AECOM, 2015, p. 108- 122).	Please refer to response item (1) in relation to the Fingal North Dublin Transport Study. As noted in Chapter 07 (Consideration of Alternatives), the options were subject to a **Multi-Criteria Analysis (MCA)** having regard to Environment, Economy, Safety, Accessibility and Social Inclusion and Integration. Therefore, the preferred option was identified for several reasons, not simply the cost, as noted in response item (1) above.

(c) Time savings should be seen in perspective. If, around 2000, a LUAS rather than a Metro option had been selected, it would have been completed at the same time as the other 2 LUAS lines, c.2004. If Metrolink is completed c.2034, 30 years of time savings and reduced emissions will have been missed, and it will have lengthened waits for other infrastructure.

My observation related to the way in which AECOM's shortlisted options were formulated, modified and evaluated economically, but TII have treated it as though it was a general criticism of Metrolink. As a result, they keep referring to the qualitative merits of Metrolink, and offer a rather minimal defence on the issues I actually raised.

ITEM 4 – AECOM & TII ignore capacity in Port Access Tunnel

Like the AECOM report, TII's response does not even refer to the Port Access Tunnel, let alone offer a view on its public transport role. This omission facilitates insistence on adding a tunnel to the LUAS option on capacity grounds. In reality, of the three light rail corridors originally considered by the DTI, the Airport/Swords one was the least likely to run into capacity problems, as the Port Access Tunnel provides a segregated, limited access route serving the same corridor.

As Box 8 shows, the goods vehicles for which the tunnel was intended may use around half its capacity in the morning peak and less than a third in the evening one. Providing one is prepared to use the tolls to reduce car traffic in the tunnel as necessary, there is more capacity available for buses in it than is ever likely to be required. This could be accompanied by a shift in thinking, based less on one high profile project, and more on overall management of a transport corridor,

BOX 7 Costs and Benefits for Metro (LR7) & Tunnelled LUAS (TLR3)

(from AECOM Table 12.5, p.167)	LR7	TLR3
Present Value of Transport User Benefits	1,563	758
Overall Monetised Net Present Value (€m)	576	-147

BOX 8: Count point, M50 S. of Jn 3 (M50/M1), N. of Jn 2 (Santry)
Traffic Flows Friday 16 February 2024

Vehicle Type	Vehicles	@ ....pcu	= (pcu)	Cumulative
	Southbound, 8-9 am			
HGV	353	2.3	812	812
LGV	477	1.2	572	1384
Bus	66	2	132	**1516**
Car	1825	1	1825	3341
with caravan	15	2	30	3371
Motor bike	11	0.4	4	3376
TOTAL	2747		3376	
	Northbound, 5-6 pm			
HGV	153	2.3	352	352
LGV	328	1.2	394	746
Bus	78	2	156	**902**
Car	2500	1	2500	3402
with caravan	1	2	2	3404
Motor bike	13	0.4	5	3409
TOTAL	3073		3409	

Note: Includes all traffic using the Port Access tunnel, but also some not using it, as slip roads allow northbound traffic to join the flow emerging from the north end of the tunnel, and southbound traffic to diverge from the flow entering it, south of the TII count point, but north of the tunnel. Flows in the tunnel are thus less than those shown in Box 4. The capacity of the tunnel is likely to be c.3000 pcu in each direction.

3	Letter	1	However, if the preferred option is optimised, then so should competing alternatives, on the principle of comparing like with like. The light rail alternative can be used to illustrate how this might have been done. As with the metro option, it could have involved aligning economically achievable capacity more closely with demand. The light rail option had barely adequate capacity in city centre sections, but this could have been coped with by several different forms of load sharing:	Please refer to response item (1) in relation to the consideration of alternatives, including alternative light rail options, and the reasons why the proposed Project was selected as the preferred option.
4	Letter	2	**a)** A segregated, limited access route between Swords, the Airport and the city centre already exists - the Port Access tunnel - and is already well used by buses connecting them. It would not be difficult to balance use of this existing route with that on a LUAS one, by periodically adjusting services and access controls on the tunnel.	Please refer to response item (1) in relation to the consideration of alternatives, including bus and light rail options, and the reasons why the proposed Project was selected as the preferred option.
5	Letter	2	**b)** The reduction in the interval between trams from one every 2 minutes possible in largely segregated suburban sections to one every 3 minutes in largely on-street city centre ones could be avoided, by splitting the line at the point where it enters the latter, with the second line running a short distance into the centre. Many urban rail services work on the terminus principle, with some passengers walking further to reach their final destination. Unlike a rail terminus, a light rail one need not take up any more space than a normal stop. In Dublin, the green line served such a terminus (at St. Stephen's Green) from 2003 to 2017. While the difference between 2 and 3 minute frequencies may seem minor, it represents a 50% increase in capacity (30 trams per hour instead of 20). Splitting the proposed line could avoid the need to put it into a tunnel under the city centre.	Please refer to response item (1) in relation to the consideration of alternatives, including alternative light rail options, and the reasons why the proposed Project was selected as the preferred option.

Even in towns with a good rail service, many people continue to use buses, because bus stops are usually closer to homes than stations. This is relevant in Swords, where the proposed metro stations are east of the Main Street, while most existing development is west of it, and walking distances of 0.5-1 km to those stations will be common.

ITEM 5 – Incremental approach to LUAS option

TII do not respond to the suggestion of a spur from the LUAS option south from Broadstone to give extra capacity. However, the AECOM report did explore two incremental variants to that option. The city centre tunnel it requires (under TLR3) could be added later as a 2nd phase, or it could be omitted and a rail spur running west off the Belfast line to the Airport could be added to LR3 instead (option C1).

The spur I suggested (shown notionally in Figure 1, running south to Smithfield to serve commuters to the western part of the CBD, with trams then running along the red line west of Smithfield to Heuston station) would cost less than either, which should raise LR3's BCR. In the sensitivity analysis in Figure 2, peak demand only exceeded capacity in the section between the Airport and Broadstone, whereas the trams per hour capacity constraint is greatest in the city centre.

AECOM (p.182) saw the need for airport passengers from outside the Dublin area to change between public transport services in the city centre, as a defect of both the Metro and the LUAS options. If some trams ran (via this spur) direct from the airport to Heuston, they would not need to, also easing pressure on route capacity within the CBD.

Figure 1. Detail from Tunnelled LR3 Option, showing

- (item 5) Possible spur south from Broadstone to Smithfield
- (item 6) Need for double transfer to access Maynooth line. The Metro north option allowed direct transfers at Drumcondra.

Source: AECOM Fingal/N. Dublin Transport Study, 2015, p.115. Notional Broadstone – Smithfield LUAS spur added [⟸⟹]

Submission No.	205
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Item No.	Section Ref.	Page No.	Observation Statement	TII Response
6	Letter	2	**(c)** Direct interchange between the light rail option and the rail lines to Connolly and Docklands could have been provided for. AECOM's LR3 option required a double change at Broombridge and Cabra (2015, p.101), but few passengers would do this. More would do so with a direct interchange, diverting some passengers from trams in the city centre.	Please refer to response item (1) in relation to the consideration of alternatives, including light rail options, and the reasons why the proposed Project was selected as the preferred option.
7	Letter	2	**(d)** The proposed 3000 space park and ride garage on the M1 north of Swords is large enough to affect the balance between capacity and demand on a light rail line, and could be scaled back. Arguably this should be done anyway, as it will encourage 'rail heading' - making those living north of Dublin more inclined to drive down the motorway to the park and ride facility, and less inclined to use existing rail stations closer to their homes.	As noted in Chapter 09 (Traffic and Transportation), with the increased use of public transport in the Operational Phase of the proposed Project, the strategic road network will experience an overall reduction in AADT and delays. The M50 Motorway, R132 Swords Bypass and M50 Port Tunnel see reductions in total traffic flow from the Do Minimum to the Do Something scenario, however **the M1 and other local roads north of the Park and Ride Facility see an increase in traffic flow** due to people accessing the Park and Ride. As outlined in Chapter 31 (Summaries of the Route Wide Mitigation & Monitoring Proposed) item TT19, the use of the Park and Ride Facility at Estuary **Station** will be monitored through the Operational Phase. Data on the origins and destinations of users, and their trips will be required to determine what impact the Park and Ride Facility is having on local and strategic level trips. Further demand management measures may be required in order to increase the number of spaces available to the wider catchment.

ITEM 6 and 7 – No response on failure to optimise LUAS option

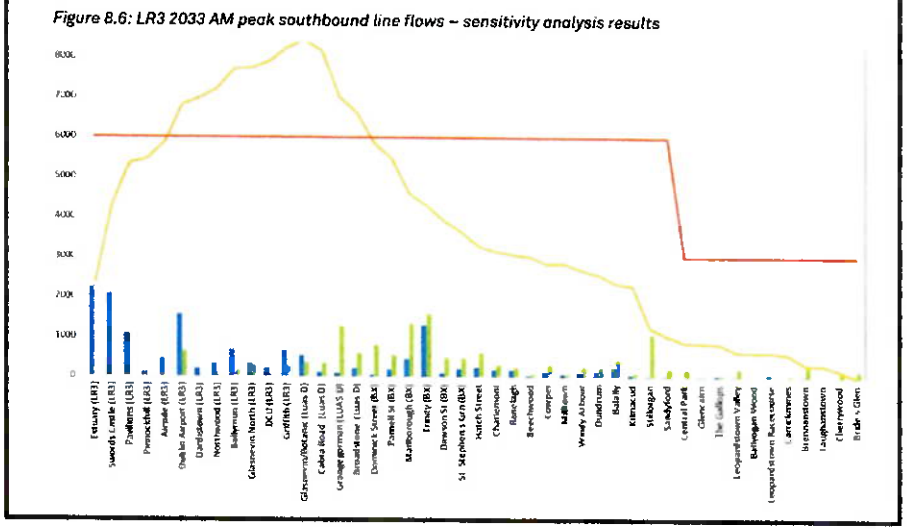
The absence of an interchange with existing Maynooth rail line TII illustrates AECOM's failure to 'optimise' that option, so that it could be compared fairly with the metro one (see Figure 1).

TII confirm that Metrolink would reduce traffic south of the proposed 3000 space park and ride facility, but increase it north of it, relative to a 'do minimum' scenario. This implies 'rail heading', involving some diversion to Metrolink from other forms of public transport closer to journey origins, thereby reducing its benefits.

AECOM's peak hour sensitivity analysis of LR3 (to test higher 2033 population, employment, air passenger and park and ride use) shows over 2000 boarding at Estuary, where the proposed 3000 space park and ride facility would be located. The maximum projected overload between the airport and Broadstone is also slightly over 2000. An optimised version, concerned to ensure comparisons were fair, would have scaled down or omitted this particular park and ride facility.

Figure 2 AECOM high demand sensitivity test for LR3 (p.107)

(note c. 2200 board at Estuary, c. 1600 at Dublin Airport)



ITEM 8 – Relevance of Government Approval

The TII responses on this item (and items 9 & 10) refer to government approval in principle of the Preliminary Business Case for Metrolink, perhaps with the implication that decisions on allocation of resources are a matter for government rather than the Board.

In this case, they are a matter for both, as the sheer scale of investment required for Metrolink, and the uncertainty on its final cost, means that approving it would have major consequences for the planning of the Dublin area (see Box 9). The estimated capital cost of the Greater

Box 9. Effect on the planning of the area

The likely effect of Metrolink in increased queuing of transport projects in the Dublin area is relevant to the Board's duty to consider

> *'the likely consequences for proper planning and sustainable development in the area in which it is proposed to carry out the railway works'*

under s.43.1(g) of the Transport (Railway Infrastructure) Act, 2001, as inserted by s.49 of the Planning and Development (Strategic Infrastructure) Act, 2006.

8	Letter	2	The AECOM study might have optimised the three alternatives to the metro option, or found some other way of treating them more equally, and have then still recommended the metro, so their failure to do so does not demonstrate that their conclusion was wrong. It does however show that it was arrived at in an unsafe and unsatisfactory manner. Subsequent massive increases in the estimated costs of Metrolink cast further doubt on the study, as they imply the cost of the metro was seriously underestimated, even at 2015 costs, and that its cost estimates for the different options may be unreliable even in relative terms.	Please refer to response item (1) in relation to the Fingal North Dublin Transport Study. As noted in Chapter 07 (Consideration of Alternatives), the options were subject to a Multi-Criteria Analysis (MCA) having regard to Environment, Economy, Safety, accessibility and Social Inclusion and Integration. Therefore, the preferred option was identified for several reasons, not simply the cost, as noted in response item (1) above. Additionally, the **Preliminary Business Case** for the proposed Project details the range of cost estimates associated with the proposed Project, and has been granted **Approval in Principle by Government**, enabling the submission of the Railway Order.
9	Letter	2	While inclusion of a statement of the alternatives considered in an EIAR is a requirement under Irish and European Law, there is no explicit requirement that they be evaluated, or that this be done in an unbiased and reliable manner. The main purpose of an EIAR is to demonstrate the environmental acceptability of a project, rather than its superiority to alternative options. Defects in the way alternatives were considered would not necessarily preclude approval for an infrastructure project of moderate scale with limited interaction with other projects.	Please refer to response item (1) in relation to the Fingal North Dublin Transport Study and in relation to the decision making process that has led to the proposed Project, and the reasons why it has been selected as the Preferred Option. As noted in Chapter 07 (Consideration of Alternatives), the options were subject to a **Multi-Criteria Analysis (MCA)** having regard to Environment, Economy, Safety, accessibility and Social Inclusion and Integration. Having regard to the environmental assessment that informed the choice of the proposed Project, some of the findings were: - Some noise impacts were identified during the construction and operational phases, that could be minimised by design development and the implementation of mitigation measures; - This option has the highest positive environmental impacts through the improvements in air quality and the highest reduction in greenhouse gas emissions when compared to other options;

Dublin Area Transport Strategy 2022-42 is €25 billion (p.235), or €1¼ billion per annum. At that rate, Metrolink at €9.5 billion would need to absorb *all* such funds for 7-8 years.

While these figures are subject to change, they illustrate the risk to other medium-term projects (see Box 10), if Metrolink goes ahead. If and when these projects are completed, there is then a list of also longer-term projects, which are behind them in the queue.

Metrolink, if implemented, may thus be inconsistent with '*proper planning and sustainable development*' in the Dublin area, in the sense that it would put balanced and timely provision of transport infrastructure there at risk, and may lead to long delays in the implementation of other necessary transport projects there.

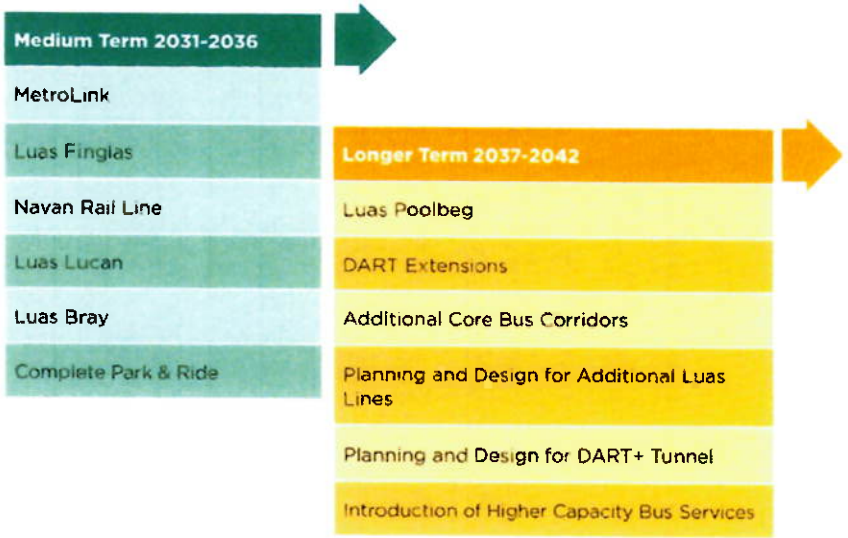
ITEM 9 – Multi-Criteria Analysis (MCA) & Strategic Issues

TII's response refer to the advantages of the metro shown in the MCA analysis under this item, and also under items 2, 8 and 10. These are fairly tenuous. 'Economy' aside, the main environmental advantage of LR7 is more information on its effects from pre-2011studies.

High-cost options *should* perform better on some qualitative criteria than lower cost ones, and there would be scant reason for anyone to support them if they didn't. But better performance on some criteria – notably capacity - does not offer any guidance on whether it justifies greatly increased capital cost.

AECOM did not address this issue, as they did not admit that there would be any significant difference in the capital costs of their metro and LUAS options. This is completely untenable now.

Box 10. From GDA Transport Strategy, 2022-42 (Table 19.1, p.236)



Box 11. AECOM Summary of MCA of short listed options

Table 13.18: Multi Criteria Analysis Summary

Multi-Criteria Appraisal Summary				
Criteria	**HR2**	**TLR3**	**LR7**	**C1**
Environment				
Safety				
Economy				
Accessibility and Social Inclusion				
Integration				

Advantages over other options
Neutral compared to other options
Disadvantages compared to other options

			However, Metrolink is of a different order of magnitude to a normal infrastructure project for which an EIAR would be required. Apart from the numerous large-scale effects on the development of Dublin and its public transport system, its sheer cost is likely to have a nationwide impact, by pre-empting funding for other projects. It is difficult to see how approval of such a large megaproject with such pervasive effects, developed on the basis of such a flawed selection process, can be considered consistent with proper planning and sustainable development.	· Some potential for impacts associated with construction compounds, hoarding and the removal of landscape features. However mitigation measures could be adopted to reduce impacts. The assessment also identified some impacts associated with the tunnel portals as well as the surface sections in rural areas south of Swords; · Some temporary loss of habitat of low conservation value was expected during the construction phase. This option was the preferred option from a Biodiversity perspective. Once operational, the proposed Project will have no significant impacts on habitats and surrounding wildlife. · The proposed Project could result in temporary removal or relocation of monuments during the construction phase, with the potential for the removal of the curtilage of some buildings of architectural merit. Overall, this was the preferred option from a cultural heritage perspective. · Potential impacts due to land take and severance in addition to potential impacts on soils due to soil usage and degradation during the construction phase. · The assessment identified potential for residual impacts on groundwater of low significance, with residual impacts on surface water resources considered to be of a low magnitude with negligible to low significance. · The preferred option scores well by providing the most benefit as it passes through 12 deprived areas along the route. As noted in response item (8), the Preliminary Business Case for the proposed Project details the range of cost estimates associated with the proposed Project, and has been granted Approval in Principle by Government, enabling the submission of the Railway Order.

While the choice of option was the key decision in the entire process, it only comes before the Board after years of detailed consultation and design work, which would be wasted if the project were refused. On the other hand, allowing Metrolink to proceed without further ado in such a high-profile case will encourage similarly flawed but convenient evaluation of options in other major projects. If the Board performs its functions in this way, it will increase project queuing.

Another longstanding issue *'of strategic or social importance to the state'* which the Board has to have regard to (see Box 12), is more balanced regional development. Its current manifestation – the NPF - aims to slow the growth of Dublin, and increase that in the other metropolitan areas, largely through infrastructural policies.

This does not mean that infrastructural capacity to accommodate the growth of Dublin should not be provided, but large-scale pre-emption of resources to fund strongly promotional options there is strategically undesirable. Much of the support for Metrolink arises from a perception that it will further promote growth in the Dublin area.

Box 12. Effect on strategic issues

Under the subsection s.43.1(h) of the Transport (Railway Infrastructure) Act, 2001, the Board has to have regard to

> *'any effect the performance of the Board's functions may have on issues of strategic or social importance to the state'*

as provided for in s.143.1(b) of the Planning and Development Act, 2000 (as amended).

ITEM 10 A Further Information request?

The effects on transport planning in Dublin and regional policy noted above are more difficult to justify, if there are viable alternatives, which do not involve these consequences. A Board request for further information, to re-evaluate the choice between the LUAS and Metro options – taking account of the points in this submission - might thus put Metrolink on a more solid basis, or clarify what the true basis on which it should be judged is, or demonstrate that no such basis exists.

Submission No.	205
Organisation Name or Name of Submitter	Nicholas Mansergh - The Cottage, Wellington Square, Cork

Item No.	Section Ref.	Page No.	Observation Statement	TII Response
10	Letter	2	One possible way of resolving this problem would be to revisit the AECOM report. The Board could ask for further information on a limited number of specified options considered in that report, in the form which best reflected the strengths of each specific option. For each such option, the expected benefit-cost ratio could be required, with supporting calculations and up- to-date costs, for comparison with those for Metrolink.	Please refer to response item (1) in relation to the Fingal North Dublin Transport Study. As noted in Chapter 07 (Consideration of Alternatives), the options were subject to a **Multi-Criteria Analysis (MCA) having regard to Environment, Economy, Safety, accessibility and Social Inclusion and Integration. Therefore, the preferred option was identified for several reasons,** not simply the cost, as noted in response item (1) above. As noted in response item (8), the Preliminary Business Case for the proposed Project details the range of **cost estimates** associated with the proposed Project, and has been granted **Approval in Principle by Government,** enabling the submission of the Railway Order.

This would make it easier for the Board to decide whether to approve it, and for the Government to decide whether to fund it.

The case for backtracking to this extent can be summarised in narrative form. In 2015, the obvious alternative to a metro was a LUAS. While AECOM shortlisted other options, the TRL3/tunnelled LUAS one was the nearest equivalent to Metro North, following a very similar route and showing the next highest BCR.

The AECOM study, by only evaluating versions of the LR3/LUAS option which included high-cost additions, seemed to show there would be negligible capital cost savings from pursuing a practical LUAS option, relative to a low-cost variant on Metro North. Raising the cost of the LUAS is likely to have lowered its BCR, and AECOM also considered the metro performed better in the MCA.

So its message to government and its agencies was that a metro would cost the same and deliver more. They therefore approved continued development of the metro option. They might well not have done this, if they had been aware it could end up at quadruple the cost of a LUAS, with no certainty that it would stop at that (see Box 13).

Once such support is given, it is difficult to retract, even if the case subsequently becomes much weaker (see Box 14 for the Swedish experience). It was not retracted when the estimated cost of Metrolink jumped from €3 billion to €9.5 billion in 2021, or when major uncertainties emerged even in relation to that figure, in 2022.

The alternative to letting social psychology outweigh rational decision-making, is to insist on the proper, balanced, fair comparison of the two main alternatives, which has been absent up until now. The further information procedure provides a way of doing this.

Box 13. Capital costs and Uncertainty – Metrolink, LUAS

Metrolink (length 19.3 km, 15 stations) has:	**€ billion**	**Cost per km (€ millions)**
50% probability of costing less than	9.5 – 10.68	492 – 553
80% probability of costing less than	12.25 - 14.2	635 - 736
90% probability of costing less than	12.61 – 18.06	653 – 936

Source: MPAG Review note on Metrolink Preliminary Business Case, p.7, 13.

The most recent extension to the LUAS system was completed on time and on budget:

Cost of LUAS Cross City Line	
Length	5.9 km
Number of stops	13
Cost	€368 million
Cost per km	€62.4 million
Period of construction	2013-2017

Source: Irish Construction News, 21 April 2018

If, say, the capital cost of a LUAS line has doubled since 2013-17, its per kilometre cost would now be c. ¼ of that for Metrolink (at €9.5 billion).

Box 14. Projects tend to 'Live On' despite loss of viability

'The study by the Auditor-General of Sweden of fifteen road and rail projects referred to earlier found that projects 'live on' in the planning process despite major declines in viability: if early estimates of viability indicated that a project was viable and thereby placed it on the planning agenda, the project tended to stay on the agenda no matter how viability developed'

From 'Megaprojects and Risk' Bent Flyvbjerg, Nils Bruzelius and Werner Rothengatter, Cambridge University Press, 2003, p.42