



The Atlantic Railway Corridor

THE MAYO-SLIGO RAIL LINK

AN APPRAISAL

DR JOHN BRADLEY

2024

IN MEMORIAM

MICHEÁL MAC GRÉIL, S.J.
23 MARCH 1931 – 21 JANUARY 2023



“You could have receded into the shadows
enjoyed the comforts of old age and respectability,
but instead you fought for the Western Rail Corridor
you were the voice that wouldn’t be silenced,
the pebble in every politician’s shoe,
shouting ‘justice, justice’”

From: *The Mayo Maverick*, by Ger Reidy

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FOREWORD

This report (*The Atlantic Rail Corridor - The Mayo-Sligo Rail Link*) is being published at a time when the future of the West hangs in the balance. We believe it will serve to show how the preserved rail line from Claremorris to Collooney can again become a force for positive social and economic change as it did when it was first constructed in the late 19th century.

We owe a great deal of gratitude to Dr John Bradley and his dedicated team for their tireless endeavour in bringing it into being. It is a worthy successor to its predecessor on the Galway-Mayo rail link which was published in 2021 in response to the botched EY report on that piece of western infrastructure. In the case of the present report the omission from the *All-Island Strategic Rail Review* of the 75km link from Claremorris to Collooney is similarly highlighted and a proper economic analysis presented as to why we need to restore that national asset to the rail network.

In April of 2023, an EU report highlighted how the economy of the West is lagging behind due to a lack of investment in infrastructure. The EU Regional Competitiveness Index stated that deficits outside Dublin are considerably undermining the competitiveness of our overall economy. The North and West (N&W) was the only region that was below the EU average, with a score comparable to that of less developed regions in Eastern and Southern Europe.

The 75 kilometres of existing out of use railway from Claremorris to Collooney is an extremely valuable piece of state-owned public transport infrastructure, passing close to an international airport (IWAK) and connecting many towns, which would cost many hundreds of millions to acquire today. Since closure, the railway alignment has been preserved by Iarnród Éireann. The rails remain in situ and the necessary engineering works required to put a railway into operation can be undertaken at any time. The entire route was re-fenced in the mid-2000s and further extensive clearance work was carried out by Iarnród Éireann on a number of sections of the line as recently as 2020-21 and 2023.

To build a new 75 km railway from a greenfield situation (such as that between Claremorris and Collooney) would potentially cost €445.5m in construction costs excluding the cost of land, major structures and stations. Based on comparable expenditure on land recently acquired for motorway construction and estimates provided in the Draft AISRR by Arup, the value of the out of use Claremorris to Collooney railway may be estimated at close to €1 billion. It is therefore essential that the rail alignment is protected for rail use only.

The purpose of this report is to give the economic context for why such a development is urgently required and makes sense.

The democratically adopted Regional Spatial & Economic Strategy (RSES 2020-2032) for the Northern and Western Region recognises the strategic importance of the Western Rail Corridor (WRC) as a growth enabler for the region and its potential to link the economies of large urban centres along the western seaboard from Limerick to Galway and Sligo. Regional Policy Objectives 6.13a and 6.13b refer specifically to the regeneration of the WRC from Athenry to Claremorris and from Claremorris to Sligo. These objectives serve to protect the railway from any interference as all development plans for counties within the Northern and Western Regional Assembly (NWRA) area must align with the RSES.

The likelihood that the Galway line is soon to reopen as far north as Claremorris offers an important opportunity for Sligo, as it means that the Sligo-Galway line will then be more than 60% operational. Mayo's industries will then be able to use the WRC line for moving raw materials and finished products southwards via Claremorris, saving time and money and reducing their carbon footprint. The same opportunity needs to be afforded to the rest of Mayo and Sligo.

Apart from the obvious business opportunities, the renewal of the rail line would also allow commuters from towns across the region to travel sustainably while availing of cheap fares through annual commuter tickets. If we are serious about reducing carbon emissions substantially by 2030, we need to recognise that rail is the only genuine sustainable alternative with the potential to get people out of their cars and onto public transport. The reconnection of Sligo and Galway, the two largest urban conurbations in Connacht, by rail is an obvious example. As this report shows, the entire project can be delivered for less than the cost of one kilometre of the proposed Dublin MetroLink. There has been enough lip-service to the concepts of balanced regional development and climate action. As a nation and as a region, we no longer have the luxury of time on our side.

As the success of the reopened Galway-Limerick route has shown, students will readily use rail services in large numbers. Today, there are more 3rd level places on the Galway-Sligo route alone than there were in the entire state when the line closed in the 1970s. North-south rail connectivity will also create an economic synergy between the designated Regional Growth Centre of Sligo and the regional capital Galway, while making it easier for overseas visitors to travel through the region to visit Sligo and adjacent counties.

The development of an Atlantic Rail Corridor is happening as we speak. Recently, many of the major multi-national and indigenous industries in the region have been writing to the Minister for Transport and to Iarnród Éireann asking for access to the rail network. In this regard, we warmly welcome the positive news of the reopening of Limerick-Foynes (currently under way) and the expected announcement of Athenry-Claremorris in the coming months. The recent successful application by the present government to reinstate the Western Rail Corridor as part of the European Ten-T comprehensive network means that the project can now qualify for up to 30% EU funding.

At the same time, the 2023 EU report has highlighted that proper infrastructural investment is also urgently needed in the north-west. All the more reason then, to have the vision and ambition to continue the project to Sligo. The line to Sligo can be renewed with just 1% of the current NDP transport budget. It is a major transport asset that can no longer be ignored or, worse still, thrown away.

Colmán Ó Ragballaigh

West on Track

12th March 2024



METAL RAIL BRIDGE OVER YELLOW RIVER NEAR KILTIMAGH (P. BOWEN-WALSH).



Executive Summary

EXECUTIVE SUMMARY

PREVIOUS CONSULTANCY REPORTS

Policy makers and the wider public have not been well served by the two major consultancy reports on the Irish rail system commissioned by the Department of Transport since 2021. The first was carried out by EY and asserted that there was no sound business case for restoring the Western Rail Corridor (WRC) link from Athenry to Claremorris. The second was a wider strategic review of the island rail network carried out by Arup, where the main finding was that there was very little evidence that restored or new rail lines could be justified in the case of the Irish regions, and in the North & West region specifically.

The errors and omissions from the earlier EY report have been extensively documented in our previous report. In the present report we examine the Arup methodology and findings and expose a similar level of vagueness and error that call into question the reliability of their findings and the lack of any strategic vision of rail requirements to support how the national economy is likely to develop over the period out to 2060 or how development in the Irish regions can be re-balanced. We further question the wisdom of basing any future all-island rail strategy on these findings. Specifically, in the case of what Arup refer to as “regional and rural” rail lines, we find that their analysis is both inadequate and flawed.

NEED FOR A DEEPER UNDERSTANDING OF REGIONAL DEVELOPMENT

A key reason for the unreliability of the EY and Arup analysis is the inadequate way that regional development re-balancing is handled. Or rather, the way that this vital policy requirement is effectively ignored. Our report takes up the challenge of examining the nature of underdevelopment in the N&W region and the fact that growth of towns in the immediate catchment area of the Claremorris-Collooney line in north Mayo and south Sligo has been much lower than in towns in mid and south Mayo and north Galway. We also show that the region supports an impressive and dynamic manufacturing and traded services culture, but that the enterprise sector is constrained with respect to future growth by inadequate transport infrastructure.

In our review of *Project Ireland 2040* and of the N&W region *Regional Spatial and Economic Strategy* (RSES), we draw attention to the need for a more searching analysis of how the economies of peripheral counties like Mayo and Sligo actually function and how the potential for accelerated development could be released by providing appropriate infrastructure. The N&W RSES has recommended that any priority policy focus in the region needs to include strengthening inter-regional connectivity, through the improvement of inter-urban road and rail connectivity, with a particular emphasis on improved connectivity between the largest urban centres and access to ports and airports, for the movement of both people and goods. We add the need for greater intra-regional rail connectivity that could be provided by the restoration of the full Western Rail Corridor.

Two bodies are identified as being of vital importance to the enhanced development of Mayo and Sligo: Ireland West Airport Knock (IWAK) and the Atlantic Technological University (ATU). We show that IWAK acts as an international airport link to a wide population catchment area in the N&W region and has the potential to act as an air-freight hub for future exports generated by regional enterprises. IWAK needs to be made accessible by rail through the provision of a shuttle bus service operating from Charlestown station on a restored Claremorris-Collooney line. ATU is targeted towards promoting and supporting regional development and educating the future labour force of the region. However, unless the rail links to and from Sligo and south into Mayo and Galway are improved, it will be difficult to attract new industries to Sligo and to allow Sligo to develop as a real regional growth centre.

THE WESTERN RAIL CORRIDOR EXISTS AND IS RIPE FOR COMPLETE RESTORATION

The next three sections of our report look specifically at the Western Rail Corridor. In [Section 4](#) we discuss the history of the emergence, operation and subsequent closure of the Western Rail Corridor in the 20th century, observing that after its closure, the very existence of the disused rail line passed out of local knowledge and its potential for restoration in a new era was largely discounted or ignored.

In [Section 5](#) we describe how the Limerick-Galway route, officially launched in March 2010, has performed. Many doubted that the line would generate sufficient passenger demand to be viable, particularly since a motorway was constructed between the two cities at the same time and when coupled with enhanced inter-city bus services, competition with the newly re-opened rail link was intense. However, as our analysis shows, after a slow start, there has been a steady annual growth in passenger numbers generating 531,000 passenger journeys in 2019 and an estimated 700,000 or more in 2023.

In [Section 6](#) we take the reader on a virtual tour of the currently disused line linking Claremorris to Collooney, a distance of 75 kilometres. Although the line has degraded over time, the basic infrastructure is seen to be intact, with very few encroachments. Building on the success of the operation of the Limerick-Galway rail link, followed by restoration of the link from Athenry to Claremorris (recommended by Arup for freight), will add even greater connectivity, linking all of the main towns in Mayo to the north-south network while simultaneously enabling businesses to access the southern ports. Every new link that is added to the corridor will add enormously to the viability and earning power of the route as a whole and serves to create the infrastructural spine so essential to the development of the Atlantic Economic Corridor and the transformation of the entire region.

HOW MUCH IS RESTORATION LIKELY TO COST?

In [Section 7](#) we turn to the question of the capital costs likely to be incurred if the Claremorris to Collooney line is to be restored to full use. Obviously, a very detailed survey would be required of the existing infrastructure and of the areas where remedial work would be needed. We attempt to initiate that process and to outline what is likely to be required. Preliminary costing estimates are provided, based on information available from the earlier restoration of the Ennis-Athenry line, suitably indexed for inflation and enhanced modern safety requirements.

The main elements of restoration include permanent way works, signalling, level crossings and passenger facilities. For example, the existing line will have to be replaced with continuous welded rail laid on concrete sleepers, as was the case with Ennis to Athenry. Other aspects of the line will also require renewal, such as bridge repairs, culvert repairs, drainage, etc. Signalling equipment, associated power supplies and telecommunications/transmission networks will need to be provided at Collooney, Charlestown, Claremorris and at remotely monitored level crossings. Several such level crossings will have to be installed where the railway traverses national primary and secondary roads and. Stations at the stops along the line will have to be renewed and new platforms provided.

We present preliminary estimates of travel times on the restored line from Sligo to Galway. A journey time from Claremorris to Sligo of c.70 minutes is achievable (allowing for a 120 km/hr line speed and one minute stops at all intermediate stations). This would give a journey time of approximately 2 hours 10 minutes from Sligo to Galway. A journey taking a little over two hours between Sligo and Galway, in comfort with the ability to work on the

move is the major selling point here. The total Cost of Works required for the re-opening of the Claremorris to Collooney line (including preliminary & enabling works) is estimated as €343.1m. A contingency of 20% brings this to €411.72m. This amounts to €5.5m per kilometre of restored track.

THE BENEFITS OF RESTORATION OF THE CLAREMORRIS–COLLOONEY LINE

In [Section 8](#) we address the challenge of quantifying the likely benefits that would be associated with the restoration of the link from Claremorris to Collooney. These benefits are treated under three headings:

- Benefits from passenger revenue
- Wider benefits associated with emissions, travel costs etc.
- Benefits from freight revenue

BENEFITS FROM PASSENGER REVENUE

After examining how Arup projected passenger demand from 2019 out to 2060 we drew two troubling conclusions. First, we concluded that while their methodology may have been appropriate for projecting inter-city demand or demand between existing stations on lines connecting the regions with the seven cities, when applied to analysing new stations that connected regions and adjoining counties with each other and where no rail service had operated for decades, their model greatly understated both the potential passenger demand and the wider regional development benefits.

Second, we concluded that the Arup “Trip Rate Model” appears to have been based on town population data that are low and incorrect. The 2km and 5km catchment areas used by Arup are far too small in a regional setting where towns are separated from each other by greater distances. Unlike in large urban areas, where many alternative modes of transport are available and population is more concentrated, people living in the N&W region will seek out the nearest railway station and are prepared to drive considerable distances within their region in order to avail of long-distance rail travel.

In projecting future passenger demand it is necessary to adopt a perspective that looks to the future evolution of the region once some of the barriers to faster development are removed. The restoration of rail connectivity on a north-south axis from Sligo to Galway and further south would remove a huge barrier and would assist the region to develop more rapidly and catch up with Ireland’s more advanced regions. To illustrate this we present some conjectural population projections for the northern towns that would be served on the restored Claremorris-Collooney line, basing these on the recent dynamic population growth of towns in mid and south Mayo. The purpose of these population projections is to stress the point that future Irish population growth is very likely to be very different from growth in the more developed and already densely populated EU member states. So, we need to plan for that now.

In the coming decades our national population is likely to grow at high rates that have not been experienced previously. Any strategic planning of the rail system in Ireland needs to recognise this fact and should not be based on the kind of marginal projections used by Arup that take no account of the current state of the economies of the regions and of the priority

assigned in official planning strategies to developing these regions in a more balanced way. In such a scenario, assumptions of the kind made by Arup (i.e., that the N&W will continue to experience low population growth and will lag further behind the more developed eastern and southern regions), simply become self-fulfilling.

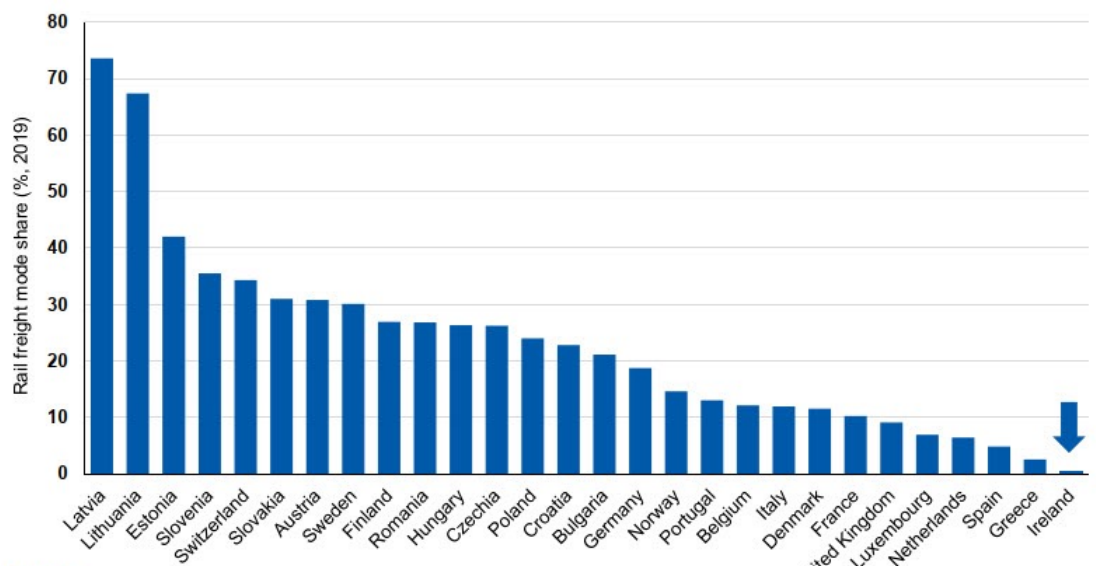
WIDER BENEFITS ASSOCIATED WITH EMISSIONS, TRAVEL COSTS ETC.

The Department of Transport's Common Appraisal Framework (CAF) sets out various methods that attempt to quantify the monetary value of other associated benefits of transport projects, including reduced noise, improved local air quality, reduced emissions of greenhouse gases (GHGs), physical activity benefits, reduced collisions (safety), net transport user benefits, and direct and indirect impacts on public finances. It was not possible to carry out detailed quantitative analyses of these benefits for the Claremorris to Collooney/Sligo line due to a lack of up-to-date and reliable data. However, we evaluated each environmental factor qualitatively, drawing conclusions only about whether the net impact is likely to be positive (i.e., a benefit), or negative (i.e., a disbenefit), and where possible, whether the magnitude of the impact is likely to be significant. The conclusion arrived at was that the restoration of the rail line would produce modest positive benefits under all of the headings examined. This is consistent with the previous West on Track report which quantified these benefits in the case of restoration of the Athenry to Claremorris line. However, it is certain that as the restrictions on the use of fossil fuels in transport become ever tighter in coming years, these currently marginal benefits arising from a switch to rail are likely to increase dramatically.

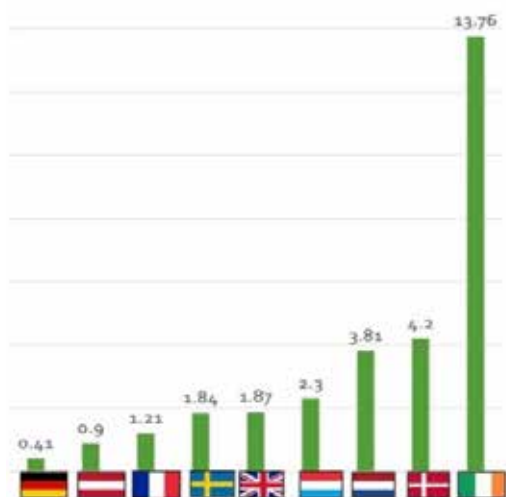
BENEFITS FROM FREIGHT REVENUE

Rail freight in Ireland generates approximately €1.5m gross profit annually. Customers are subject to one of the highest Track Access Charges (TACs) in the EU for use of the railway network. It is not surprising therefore that Ireland has the lowest use of rail freight in the EU.

Rail freight mode share for European countries (Eurostat 2019)



TAC for freight undertaking per track-km (IRG Rail Market Monitoring Report 2022)



Mayo inter-modal trains currently contribute to carbon savings by displacing approximately 15,000 long-distance lorry movements involving over 4.5 million road kilometres annually. It may be extrapolated that proposed additional intermodal trains on the WRC would, in addition, displace over 9,000 long distance lorry movements involving 2.5 million road kilometres annually from the start of operations. Rail transport of freight uses 15-25% of the direct energy per tonne-kilometre compared with transport by road. However, unlike most EU countries Ireland offers no state aid or subsidies towards rail freight.

The restoration of the rail link between Mayo and Galway and subsequently between Sligo and Mayo, linking in to the existing rail route to the South, will address the need to minimise the impact of BREXIT on trade and the economy in a timely and cost-effective manner. It will also offer new opportunities for industry in Galway, Clare, Limerick and Tipperary to access rail freight while freeing up paths for more passenger services on the radial Dublin - Westport/Galway/Sligo routes, which will continue to be utilised for Dublin Port traffic.

THE FUTURE WILL NOT RESEMBLE THE PAST: NEW, CLEAN ENERGY SOURCES

Over a time horizon of about 50 years both the regional economy and the urgency to decarbonise are likely to evolve and change dramatically. Marginal changes in CO2 emissions are likely to be completely inadequate in the face of the anticipated need to reduce drastically the use of fossil fuels. Furthermore, a transition from fossil-fuelled cars, buses and HGVs to electrically powered vehicles for road use will only partially address the challenge, since the very manufacture of such vehicles in the required numbers will also use up resources and generate CO2 emissions. Realistically, any drastic reduction in the number of such road-based vehicles, be they fossil-fuelled or electric, can only be accomplished through a switch to rail, with road use for shorter journeys and to access the rail network nodes. In Section 9 of our report we examine how the evolving technology of hydrogen-powered trains could produce a massive reduction of CO2 and other emissions from the transport sector. The transport sector is currently the largest user of net fossil fuel consumption.

While electricity is increasingly being produced from renewable sources, the share of renewably sourced energy in the transport sector is very low. A shift to rail, and particularly to hydrogen-powered rail, would produce a dramatic shift in this pattern.

RESTORATION IS NOT THE PROBLEM – IT IS THE SOLUTION

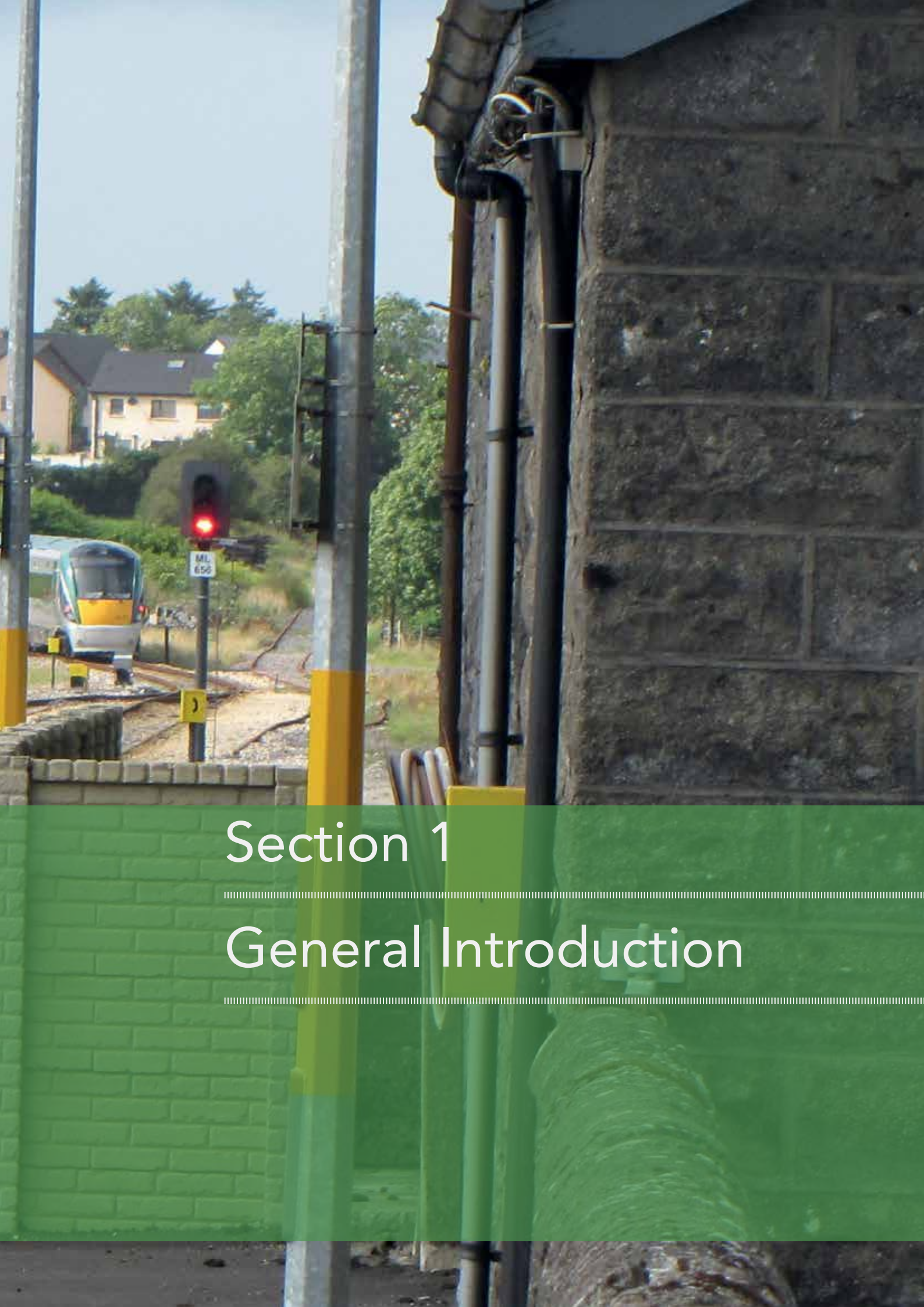
Perhaps the most crucial finding from our analysis is that in the short term, the costs of restoration of the Claremorris-Collooney line may tend to dominate any benefits and that the switch to rail may be slow. However, the experience of the success of the restored Limerick-Ennis-Athenry-Galway line suggests that the benefits of rail are soon recognised by the public, and usage can rise quickly and dramatically. There is no reason to believe that a restored Claremorris-Collooney line would be any different. If the demographics of Mayo and Sligo remain largely unchanged, except for unbalanced population growth in their towns, then the benefits of rail restoration will be modest. However, if the N&W region is provided with appropriate transport infrastructure that knits together its dynamic towns on a north-south axis, rapid development can be expected and the successful pattern of the Limerick-Galway rail line will be replicated.

The cost/benefit methodology employed by consultants such as EY and Arup, as well as in much official strategic planning, shows little understanding of the serious state of underdevelopment of the N&W region. This lack of understanding is exacerbated by the dearth of solid research into how the three Irish regions are performing, where even the national Project Ireland 2040 strategy was drawn up in a situation where there was a similar dearth of data and analysis. Projections by consultants made from the current state of the economy tend to represent only marginal improvements that would probably result in the under-developed N&W region lagging further behind the two more developed East & Midlands and Southern Irish regions. With such an approach, returns on public investment in improving infrastructure in the N&W region would be at best modest and possibly zero.

In our analysis we seek to understand the current structure and performance of the economy of the N&W region, the reasons why it is “lagging”, and how it can be dynamised and re-integrated into the currently more buoyant national economic performance. We take the commitments of the government to re-balance regional performance seriously and place our evaluation of the benefits of restoring the Claremorris-Collooney/Sligo rail link within that commitment. We look to a future where the infrastructural distortions that caused “lagging” behaviour are removed and the N&W region can achieve its true potential. With the appropriate investment in infrastructure, and particularly in rail infrastructure, the future of the N&W region is likely to be dramatically better than in the past and present.



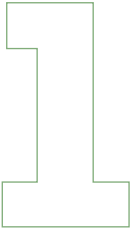
FREIGHT AND PASSENGER SERVICES CROSSING AT CLAREMORRIS. SLIGO LINE TO THE RIGHT (BOBBY GLEESON).



Section 1

General Introduction

[1] GENERAL INTRODUCTION



Just as the previous West-on-Track study, *The Atlantic Railway Corridor: The Galway-Mayo Rail Link – An Appraisal*, was initiated to respond to the EY report on the restoration of the rail link connecting Athenry to Claremorris, the present study is motivated by the need to address issues arising from the recent Arup consultancy report, entitled the *All Island Strategic Rail Review (AISRR)*.

In late 2018 a contract was awarded to the consultancy firm EY requiring them to carry out a financial and economic appraisal of restoration of Phases 2 and 3 of the WRC, i.e., restoring the rail link between Athenry on the Dublin-Galway line and Claremorris on the Dublin-Westport line. EY completed their assignment in the Summer of 2020 and their report was published on January 8th, 2021.¹ EY's conclusion, based on cost-benefit analysis, was that there was no business case for the restoration. Ironically, this conclusion was overturned in the draft AISRR by Arup Consultants less than three years later.

However, as the published EY report was examined in detail by the West-on-Track team, and its assumptions and projections evaluated and checked, it became increasingly apparent that the conclusions reached by EY were at best very questionable and at worst factually incorrect. This provided the motivation for West-on-Track to undertake a thorough re-examination of the feasibility of the WRC restoration.²

The challenges faced in evaluating the Arup AISRR are more daunting since it is a review of the entire rail network on the island of Ireland and extends over a very long time horizon out to the year 2060.³ As with the EY report, West-on-Track assembled a working group of experts with wide experience in rail engineering, economic analysis, regional development strategy, financial analysis, business, and social issues. This group was tasked initially with carrying out a detailed and searching review of the regional and rural aspects of the Arup report and then with the preparation of a comprehensive, balanced and accurate alternative appraisal of how the regional and rural aspects of the Irish rail network had been treated by Arup.

The Arup Report comprises two separate parts. The first, and major, part focused on rail connections linking the seven cities on the island: Dublin, Belfast, Cork, Limerick, Galway, Derry and Waterford. This was referred to by Arup as the rail network “spine”. The second, more minor, part was described as “regional and rural”, and dealt with the remainder of the island's rail network. The “regional and rural” part was further split into four sub-headings:

- Northern Ireland
- West Coast
- South Coast
- North Midlands

Our focus in this study is on the “West Coast” Arup package which embraces the Western Rail Corridor from Limerick to Sligo and extends further north through Donegal to Letterkenny and Derry. Within the “West Coast” package we are primarily concerned with the treatment by Arup of the vital link between Claremorris and Collooney/Sligo. It is for others to comment on the inter-city aspects of the Arup Report and on the other three “regional and rural” Arup packages.

1 <https://www.gov.ie/en/publication/1174d-review-of-western-rail-corridor-phases-2-and-3-athenry-to-claremorris/>

2 <http://www.westontrack.com/>

3 *All Island Strategic Rail Review: Draft Report for Strategic Environmental Assessment Consultation*, 25 July, 2023.

Specifically, we examine the manner in which the wider Atlantic Rail Corridor (ARC) and the Western Rail Corridor (WRC) element of the ARC, were handled by Arup, and their neglect of issues associated with the restoration of the vital link in the ARC that would permit Sligo to be connected southwards to Mayo, Galway, Limerick (with its port at Foynes), and the southern ports of Cork, Waterford and Rosslare Europort. The present report presents the results of our review and an alternative and more comprehensive socio-economic evaluation of the ARC restoration. We deliberately place our analysis in a wider context, both historical and economic, and structure it to assist the reader in understanding the importance for the development of the Northern & Western region of systematically restoring what is, in effect, a rail corridor extending along most of the west coast and linking together the cities and towns of the Atlantic Economic Corridor (or AEC).⁴ Our study is structured into nine sections as follows.

Section 2 sets out a review of the methodology used by Arup in the AISRR, focusing on how the Western Rail Corridor element was poorly handled and how the very existence of the Claremorris-Collooney/Sligo line was ignored completely. We note that the rail lines classified as “regional and rural” by Arup were not analysed in any detail, but were simply added into the major inter-city analysis as minor appendages to the national rail network “spine” and analysed using a UK-based modelling methodology that is entirely inappropriate for Irish conditions. We show that the outcome of this approach was a very inadequate handling of the regional development needs of the Northern & Western region, flawed passenger demand projections, and the dismissal of almost all of the elements in the initial Arup “regional and rural” packages.

“We note that the rail lines classified as “regional and rural” by Arup were not analysed in any detail, but were simply added into the major inter-city analysis as minor appendages to the national rail network “spine” and analysed using a UK-based modelling methodology that is entirely inappropriate for Irish conditions.”

Since the question of the appropriate regional development strategy for the Northern & Western region is critical to any analysis of transport infrastructural needs, in Section 3 we discuss a more detailed approach to accelerating the rate of development of this lagging region and the role the restoration of rail links would play. The need for a better understanding of the demographics of this region as well as the current state of the enterprises that operate successfully there is discussed and the region’s development challenges are explored. This section is necessary because these issues were almost completely ignored by Arup, in spite of the stress placed on regional development in Project Ireland 2040 and in the Regional Spatial and Economic Strategies of the three Regional Assemblies.

Section 4 presents a historical account of the origins and subsequent history of the Western Rail Corridor in order to re-familiarise readers with an important west coast infrastructural asset that has lain dormant for over 20 years. The reasons for the failure of the WRC to grow and prosper in the late 19th and early 20th centuries were closely related to the historical aftermath of post-Famine Ireland. The underutilisation of the rail link that eventually led to its closure came about as a result of a systemic social and economic decline in the west rather than as a consequence of any specific or intrinsic failing of the line itself. A better understanding of these historical factors will assist readers in re-evaluating the future role of the rail link as part of a radically different west of Ireland economy in the 21st century, an economy that has great potential to develop and grow if provided with the appropriate

transport and communication infrastructure. In the 21st century the WRC, embedded in the wider ARC, can play a vital role in rebalancing development on this island in a more socially desirable and sustainable way.

In [Section 5](#) we describe the process that led to the restoration of the rail link between Limerick city and Galway city. We discuss the restoration process and the subsequent very successful operational performance of this line which restored the direct inter-city rail link between Limerick city (population 102,287) and Galway city (population 85,910) as well as to the towns and villages located between them.

In [Section 6](#) we focus specifically on the condition of the disused rail line that links Claremorris, on the Dublin-Westport/Ballina line, to Collooney, on the Dublin-Sligo line. In effect, we take the reader on a virtual guided tour of the present condition of this line, starting at Claremorris and ending at Collooney, a distance of about 75 kilometres. On the way we pass from Claremorris through Kiltimagh, Swinford, Charlestown, Tubbercurry and Coolaney. This disused line was not even referred to in the Arup AISRR so it was important to demonstrate, using a series of both archive and recent photographs, that the line still exists, is in relatively good condition and, crucially, has not been abandoned.

In [Section 7](#) we attempt to estimate the likely capital cost of restoring the Claremorris-Collooney line. Our analysis is preliminary and we recognise that a much more comprehensive analysis will be needed prior to any government commitment to restoring this line. However, it is no surprise that even this kind of preliminary analysis does not appear to have been carried out by Arup, who ignored the line completely.

In [Section 8](#) we turn to the possible benefits of restoring the Claremorris-Collooney line. These break down into three categories. First, there is passenger demand and revenue benefits, where the Arup analysis was flawed and backward looking. We stress the need to anticipate how the N&W region is likely to develop out to 2060 and the need to make cost-efficient preparations now to both drive that development and to service it in the future. Second, we consider the wider benefits of restoration associated with local air quality and greenhouse gas issues, physical activity benefits, road safety, other user benefits and the impact on public finances. The third category of benefits arises from the enhancement of rail freight services and the ability to have a more direct route to Shannon Foynes Port and the Port of Waterford.

“We stress the need to anticipate how the N&W region is likely to develop out to 2060 and the need to make cost-efficient preparations now to both drive that development and to service it in the future.”

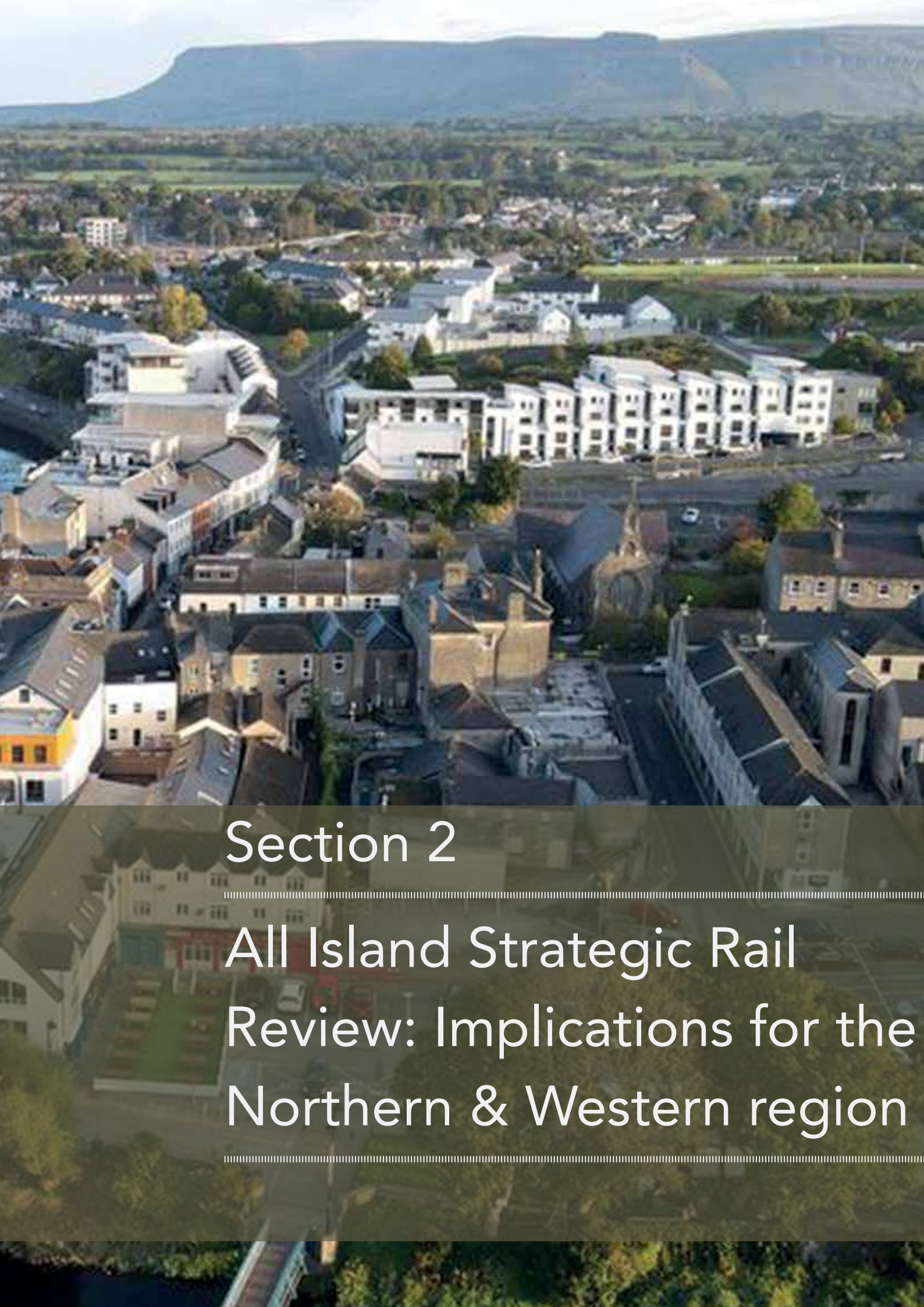
[Section 9](#) takes us beyond conventional rail systems as they operate today and reviews some of the emerging technologies that are likely to come on-stream between now and 2060.

In [Section 10](#) we bring together the separate elements of our analysis and present an overall evaluation of the role that a fully restored Atlantic Rail Corridor would play in stimulating faster regional development in the N&W region. There are very strong business, economic and social justifications for restoring the vital link between Claremorris and Collooney. We have sought to articulate them clearly, and present our recommendations to our readers.



2

AN AERIAL VIEW OF SLIGO (MACIEJ OLEDZKI)



Section 2

All Island Strategic Rail Review: Implications for the Northern & Western region

[2] ALL ISLAND STRATEGIC RAIL REVIEW: IMPLICATIONS FOR THE NORTHERN & WESTERN REGION



[2.1] INTRODUCTION

Ireland entered the 20th century with one of the most extensive rail networks in the world. From that peak, it slowly decayed, starting with closures of the most peripheral routes (such as Westport-Achill; Galway-Clifden), accelerating with massive closures from the 1950s onwards, including the cessation of services on the Western Rail Corridor (WRC) linking Limerick to Sligo via Ennis, Athenry, Tuam, Claremorris and Collooney. The Irish rail system today is a pale shadow of its former glory.

The *All Island Strategic Rail Review* (AISRR) carried out on behalf of the Department of Transport by consultants Arup and the draft report published in late 2023 set out recommendations to upgrade the existing rail network, reverse some of the former closures, and construct new rail lines where necessary. Into the medium term it envisaged an all island rail network that restores some closed lines, builds some new lines, and makes a wide range of other improvements to existing tracks and railway efficiency.

Some background to the emergence of the AISRR is necessary, particularly in the context of the Western Rail Corridor (WRC), which is the main focus of the present report. In 2019 Minister for Transport, Deputy Eamon Ryan, commissioned a report from consultants EY that concluded there was no viable business case for restoring the disused rail line linking Athenry to Claremorris, the next stage of the WRC beyond the now restored and successfully operating Ennis-Athenry line. A subsequent critical evaluation of the EY report was prepared by West-on-Track in an effort to encourage a public debate on the errors and inaccuracies of the EY report.¹ However, no such debate ever took place and the EY conclusions were left stand.

In 2021, Minister of Transport Ryan, this time in association with his opposite Minister in Northern Ireland, commissioned the consultants Arup to carry out an all-Ireland strategic rail review that would examine ways in which the entire island rail network might be modernised and extended to address transport and climate change challenges out to beyond 2050. As we shall see below, unlike the EY report published two years previously, the Arup analysis recommended that the Athenry-Claremorris element of the WRC was economically justified, but in the context of freight rather than passengers.

Before examining the Arup Report in detail, there are two key issues in it that need to be highlighted. The first concerns the methodologies used in both the EY and Arup Reports. The second concerns the treatment of the currently disused track connecting Claremorris to Collooney/Sligo.

2.1.1 EVALUATION METHODOLOGY

The analytical methodologies of the EY and Arup reports are not identical, at least in the way that they treated issues related to regional and rural lines such as involved in consideration of the restoration of the WRC. EY used a highly quantitative, bottom-up cost-benefit approach based on close and detailed analysis of the specific features of the region served by the rail line running from Athenry to Claremorris. The fact that the West on Track critique of the EY report found many egregious errors in the EY analysis and results does not detract from the use of this analytical approach, which is quite standard

1

This Report The Atlantic Railway Corridor: The Galway-Mayo Rail Link – An Appraisal is available on the West on Track web site (<http://www.westontrack.com/>)

in the evaluation of individual transport infrastructure projects.² But it did point to errors made by EY in implementing the methodology and drawing conclusions from it.

Arup, on the other hand, appear to have applied a more top-down (or “high level”) approach that may have glossed over many of the specific details and local context of the smaller “rural” and “regional” rail package proposals that they considered. This is particularly relevant in the case of the restoration of the WRC. In terms of how the various packages of proposals were handled by Arup, their approach is described as follows in Work Package 3, page 13, of their report:

We have estimated the cost to construct each package via a bottom-up method looking at the wide range of interventions needed to achieve the final package. Building new railways or upgrading existing railways is a complicated endeavour with each intervention requiring a bespoke design that is resource intensive. For the purposes of this study we have kept our cost modelling at high level looking at the number of large interventions required in each package and applied a unit cost to each. This gives a good comparison of each package against each other.³

This approach appears to advocate a mixture of standard cost-benefit analysis, as in the EY report, but combined with a more top-down, qualitative approach that makes it difficult to understand and critique the published results since the judgement calls that Arup made are not explained. In addition, Arup present their analysis of their proposed regional and rural packages only in conjunction with a dominant and much larger Higher Speed inter-city Package rather than in isolation, confirming concerns that the development needs of the west coast area were not examined in sufficient detail. The explanation offered to justify this procedure was as follows:

It should be noted that the packages were assessed as combinations and not in isolation. This reflects the Review’s assumption that the additional regional and rural interventions included in packages 3a, 3b, 3c and 3d would not be delivered in isolation but would likely be delivered alongside interventions included in Package 1 and 2.

Knowledge of development challenges and regional situational awareness are essential requirements when evaluating large-scale infrastructural projects in the N&W region. However, such local knowledge may have been absent in the case of the London-based Arup evaluators who relied on a rather mechanical application of standard transport evaluation models, often calibrated with British rather than Irish data. The Arup models may have failed to take proper account of the evolving development situation in the N&W region as described in the Regional Spatial and Economic Strategy (RSES) prepared by the N&W Regional Assembly.⁴

2.1.2 ARUP TREATMENT OF THE DISUSED CLAREMORRIS- COLLOONEY LINE

This issue concerns only the Arup Report since the remit of the EY Report only extended over the WRC from Athenry to Claremorris. By any consideration, the Claremorris-Collooney line is the most significant of currently disused rail lines on the island that remains intact,

2 See footnote 1.

3 Keeping the cost modelling “at a high level” since to do otherwise would require a “bespoke design that was resources intensive” is, effectively, a polite way of saying that the fee for the consultancy assignment would not have funded a more detailed analysis of the long list of possible recommendations. It suggests that the smaller, mainly regional and rural lines, were the ones that were not analysed in full technical detail.

4 Regional Spatial and Economic Strategy 2020-2032, Northern & Western Regional Assembly, 2020.

has the potential for restoration at significantly lower cost than would be incurred in building an entirely new line, and is not currently the focus of recent government and Iarnród Éireann active attention. However, the currently disused Claremorris-Collooney line, the details of which will be extensively documented in Section 6 of this report, is completely ignored in the Arup report. It is as if it never existed. Curiously, in constructing a long-list of possible recommendations in the N&W region, Arup proposed consideration of an entirely new rail line linking Claremorris to Collooney, but this was eliminated (or ‘parked’, to use Arup terminology) and did not reach the short-list of recommendations for final evaluation.⁵ We will return to the justification offered later in this section.

“Curiously, in constructing a long-list of possible recommendations in the N&W region, Arup proposed consideration of an entirely new rail line linking Claremorris to Collooney, but this was eliminated (or ‘parked’, to use Arup terminology) and did not reach the short-list of recommendations for final evaluation.”

[2.2] THE PURPOSE OF THE ARUP REPORT

The overall objective of the Arup Report is stated as follows:

The Review aims to inform policy and future strategy for the railways in both jurisdictions on the island of Ireland. It has examined how the island’s railways are currently used, what role rail could play in future, and how the island’s railway could better serve the people of both jurisdictions.

More specifically, the report was required to focus on the role of a modernised and enhanced rail network in addressing the following four main issues:

- Decarbonisation
- Sustainable connectivity into and between major cities
- Enhance regional accessibility
- Support of balanced regional development

5

See package reference 3.03b on page 99 of the Draft Arup Report.

The challenges preventing the present rail network from addressing these issues in a more effective way are well known to all users of the rail network and are stated by Arup as follows:

- Gaps in rail network coverage
- Low frequencies and speed
- The lowest level of electrified railway in the EU
- A poor quality of service
- Inconsistent and poor station access
- Lack of rail service to any of the island's airports
- The expense of making improvements
- Island demographics
- Ecological barriers to rail development

In the context of the narrower focus of the present study, it is useful to distinguish those Arup recommendations that have mainly all-island benefits from those that are targeted specifically at the N&W region and the WRC. The first category would include five items:

- Decarbonisation recommendations
- Intercity recommendations
- Sustainable cities recommendations
- Freight recommendations
- Customer experience recommendations

These recommendations are of importance to the national economy as well as to the economy of the N&W region, but our current focus is on the Claremorris-Collooney line restoration. Debate on them is for a different forum and another day. Hence, we will not comment on them in any detail.

The second category would include just one item:

- Regional and rural recommendations

Jumping to the final recommendations in the Arup Report, two maps can be used to summarise the nature of these recommendations. The first map (Figure 2.1) shows the existing state of the island rail network in 2023.

The dysfunctionality of the network with respect to the N&W region is dramatically illustrated in Figure 2.1. One notes the complete absence of any rail links in the north mid-lands and Donegal, a gap in transport infrastructure that is replicated in the current island motorway system. Although the Limerick-Galway link of the WRC is operational, it does not extend north of Athenry. There is no rail connectivity between the main towns in Mayo and Galway city other than through Athlone. In addition, there is no rail connectivity between Sligo and the main towns of Mayo other than via Dublin. Finally, freight traffic out of Ballina, a major inland rail port that needs to connect to the port of Waterford must travel east on the congested rail line as far as Kildare before turning south to Waterford.

“There is no rail connectivity between the main towns in Mayo and Galway city other than through Athlone. In addition, there is no rail connectivity between Sligo and the main towns of Mayo other than via Dublin.”

The second map (Figure 2.2) shows the rail network as it would be reconfigured if the final set of Arup recommendations was implemented. The most striking aspect of the modernised and reconfigured future rail network shown in Figure 2.2 is that it only partially addresses the rail infrastructure gap in the north-east with a new rail link from Letterkenny in the north of Donegal, through Derry, south to Portadown, combined with a new link from Portadown to Mullingar on the Dublin-Sligo line. However, it fails to address the need to facilitate the connection of towns in counties Sligo and Mayo to the south and onwards to the city of Galway. In the case of Sligo, the connection southwards to the towns of Mayo and Galway via Dublin has only been modified to a modest extent by the provision of a connection via Mullingar. The absence of the rail link from Claremorris to Collooney means that Ireland West Airport Knock (IWAK) remains isolated from potential rail access via a shuttle service from the nearby station at Charlestown.

“The absence of the rail link from Claremorris to Collooney means that Ireland West Airport Knock (IWAK) remains isolated from potential rail access via a shuttle service from the nearby station at Charlestown.”

Figure 2.1: The island rail network: 2023



(Arup)

Figure 2.2: A potential future all-island railway 2050



(Arup)

In the context of the present study, the main questions that we need to ask are the following.

- How did the analysis methodology used by Arup end up with recommendations that ignored the opportunity to restore the rail line from Claremorris to Collooney/Sligo, thus reopening a north-south link along the west coast that could be vital to the revitalisation and regeneration of the area?
- Did Arup analyse the potential of restoring Claremorris-Collooney but found it more expensive than an alternative proposal of constructing an entirely new line?
- If so, what evidence was offered to support their conclusion.
- With respect to the Arup proposal to construct an entirely new line linking Claremorris to Collooney, which was eliminated in the final list of recommendations, what was the supporting evidence?

[2.3] A REVIEW OF THE ARUP EVALUATION METHODOLOGY

2.3.1 INTRODUCTORY REMARKS

The first problem to be noted when reading the Draft Arup Report⁶ and the three accompanying Work Packages is that there is absolutely no effort made to set out a strategic perspective on the evolution of either the national Irish or Northern Irish economies from the present date out to 2050 and beyond, the time horizon used for the study. Nor is there any effort made to analyse the actual performance of these economies in recent decades or to describe the kind of transport and communication infrastructure that has already been put in place during and after the decades when EU Structural Funds were available. Therefore, it is hardly surprising that there is also no attempt made to review the kinds of regional development issues that currently exist in Ireland and, specifically, the fact that the N&W region is seriously lagging behind the performance of the E&M and the Southern regions.⁷

Before moving on to the manner in which cost-benefit analysis was carried out by Arup, it needs to be said that the absence of an economic strategic context in the Arup work means that they are planning for the implementation of a very large-scale, publicly funded, infrastructural programme of rail investment in a complete research vacuum. This should be contrasted with the era of EU Structural Funds, from 1989 to the first decade of the new millennium, when such large-scale infrastructural proposals were always accompanied by very searching projections of the likely performance and evolution of the economy over a time horizon of about 20 years, and ex-ante and ex-post impact evaluations were mandated by the European Commission and carried out by the Irish government.⁸

The lack of any economic context for the future of the economy into which large-scale rail infrastructural investments are proposed raises the possibility that the Arup model-based transport evaluation methodology was being applied in either a static context (i.e., the economy tomorrow is likely to be structured very like today) or in a dynamic context that may be completely misguided (i.e., Dublin will continue to grow massively at the expense of the smaller cities and the regions on the western seaboard will become increasingly irrelevant to the national economic welfare).

There are hints of the ambiguous way in which Arup treats regional development from the very beginning of their report and throughout it. For example, at the very start (page 9) there is reference to “enhancing regional accessibility” and “supporting regional development”. The issue of “accessibility” can be broadly taken to refer to the ability of regions to access the major cities on the island, and in Arup it tends to be dealt with by upgrading existing rail services.⁹ The issue of “development” is rather different and refers to the future role of rail infrastructure in enhancing the ability of the smaller towns in the N&W region to specialise in manufacturing and service activities and to access and trade with each other, thus permitting more of them to grow beyond the 10,000 population mark that is treated in a privileged way in the Arup analysis.¹⁰

6 At the time of writing the final version of the Arup Report has not been published so commentary here refers specifically to the Draft Arup Report.

7 See “EU lagging regions: state of play and future challenges”, Policy Department for Structural and Cohesion Policies [http://www.europarl.europa.eu/thinktank/en/document.html?reference=IPOL_STU\(2020\)652215](http://www.europarl.europa.eu/thinktank/en/document.html?reference=IPOL_STU(2020)652215). It must be said that the absence of any background socio-economic regional analysis in the Arup work simply replicates the absence of regional analysis in both Project Ireland 2040 and the three Regional Economic and Spatial Strategies prepared by the three Regional Assemblies.

8 For example: Bradley, J., J. Fitz Gerald and I. Kearney (1992). The Role of the Structural Funds: Analysis of Consequences for Ireland in the Context of 1992, Policy Research Series No. 13, Dublin: The Economic & Social Research Institute (pp. 1-122), was the first such analysis and was followed by many more.

9 Most of the city-regional connectivity is handled in Arup by improvements in existing rail lines.

10 In the Arup analysis, towns with a population of 10,000 or more are privileged with respect to needed rail access.

An example of this ambiguity is the fact that the recommended final rail network shown in Figure 2.2 addresses “accessibility” by improving east-west links between Sligo and Dublin and Westport/Ballina and Dublin. However, by ignoring the Claremorris-Collooney link, it fails to address the missing north-south link that will be a key element in driving faster development in Mayo and Sligo. We will return to this point later in this section.

2.3.2 THE ARUP “PACKAGES”

One of the issues that makes the Arup Report difficult to understand and to review is that it does not present analysis at the level of specific, carefully defined rail investment projects. Rather it bundles different projects into “packages” and presents results for these “packages” rather than for their individual constituent elements. However, the problem is even more difficult than this. Only in the case of the three main “packages” that essentially involve what is referred to as the “spine” (i.e., rail links connecting the seven cities on the island), are separate evaluations provided. These three “packages” are referred to in the Report as follows:

- Package 1: Quick Wins plus Decarbonisation
- Package 2a: Intercity, Higher Speed
- Package 2b: Intercity, High Speed¹¹

But in the case of the four “regional and rural” packages, their evaluations are only presented merged with the inter-city packages, mainly Package 2a. These four packages are as follows:

- Package 3a: Northern Ireland
- Package 3b: West Coast
- Package 3c: South Coast
- Package 3d: North Midlands

The initial definition of the “West Coast” package (3b) was as follows:

- A new 120km/h electrified line between Derry/Londonderry and Sligo, double-tracked between Derry/Londonderry and Letterkenny and single-track between Letterkenny and Sligo. Hourly services along the whole line and two trains per hour between Letterkenny and Derry/Londonderry.
- A new 120km/h electrified single-track line between Sligo and Athenry, with hourly Sligo-Galway services.
- Electrification and speed upgrades, including limited realignment, between Athenry and Sixmilebridge to enable hourly services between Limerick and Galway.

There are only two such towns in Mayo (Castlebar and Ballina, both of which already have rail access. There is only one such town in county Sligo (Sligo town), which has access to Dublin but not southward towards Mayo and Galway.

11 The use of “Higher Speed” and “High Speed” is confusing. Higher speed refers to speeds of up to 200 km/hr, where “higher” is relative to existing speeds on the current rail network. High speed refers to speeds of up to 300 km/hr. So in this confusing terminology, “higher speed” is actually slower than “high speed”!

However, after an initial assessment, a “Final Scenario” package was produced according to the following logic:

After assessment of the previous packages, a final scenario has been developed encompassing elements of all packages to produce an island-wide list of interventions. While some of the previous packages have been included in this scenario in their entirety, only small portions of other packages have included. These decisions have been made on the basis of how well particular portions met each of the goals of the review. In some cases, modifications have been made to interventions proposed in previous packages, either to help ‘stitch packages together’ or to reduce costs while maintaining connectivity and the overall goals of the review. A reduction in costs became an aim given the assessment showed a high level of overall cost compared to benefits and goals achieved, and therefore there was opportunity and need for cost reductions.¹²

The eight proposals selected from the four “Regional and Rural” packages (3a, 3b, 3c and 3d) that made it into the “Final Scenario” package (3e) are as follows:

- A new 160km/h double-tracked electrified line between Portadown and Derry/Londonderry.
- A new unelectrified single-track line between Derry/Londonderry and Letterkenny.
- New suburban stations between Derry/Londonderry and Coleraine, including City of Derry Airport and a spur to Limavady.
- A new unelectrified single-track line between Portadown and Mullingar via Armagh, Monaghan, and Cavan.
- A new unelectrified single-track line between Claremorris and Athenry via Tuam.
- A reopened single-track line between Waterford and south of Wexford via Wellingtonbridge, including electrification between Waterford and Rosslare Harbour.
- Modifications to Limerick Junction station to facilitate through services between Cork and Limerick and Cork and Waterford.
- Enhancements to capacity and alignment along the Limerick Junction-Waterford line.

The only element of the “Final Scenario” Package 3e that is directly relevant to the WRC is shown in an extract from Table A3 as follows:¹³

Ref	Intervention / Option	Package								Result	Comment
		1	2a	2b	3a	3b	3c	3d	3e		
3.03a	Claremorris – Athenry (reinstated line)			I		✓			✓	Included	See note 5
3.03b	Claremorris – Collooney (new line)					✓				Parked	See note 5

The relevant comment supplied in Note 5 reads as follows, where the “parking” of all of the north-south rail proposals on the west coast, other than for Claremorris-Athenry, is explained:

Modelling undertaken for interventions on this corridor showed there would be very low demand for passenger rail services on this route and that building a railway on this corridor would have a significant adverse impact on the environment. There are also no obvious opportunities for developing significant rail freight demand between Claremorris and Derry/Londonderry. That said, the modelling showed there would some demand between Letterkenny and Derry/Londonderry. It was also assessed that a connection to Letterkenny was essential for achieving the Review’s goals of reaching as many large (population >10,000) towns as possible within reasonable economic constraints. This link was therefore retained in the Final Scenario. It was also noted that the link between Claremorris and Athenry provided an important link for the island’s rail freight network, and that the town of Tuam would probably generate demand for a passenger service. This link was also retained, but all other proposed links in Package 3b were dropped from the Final Scenario.

A further justification was offered, as follows:

Several of the regional and rural packages were judged to be unviable as they generated too little demand to justify their cost. The carbon assessment also found that some routes would not generate enough modal shift to offset the carbon generated by the construction of the new railways.

It should be noted that the “parking” (i.e., deletion) of the proposed line from Claremorris to Collooney refers to a “new” line proposed by Arup and not to the restoration of the “existing” disused line. Elsewhere in the Draft Arup Report, it was estimated that the construction of a “new” rail line costs about twice as much as the restoration of an existing, but disused line. It is extraordinary that the reconstruction option was not considered for Claremorris-Collooney and the existence of the currently disused line was completely ignored.

The failure to include the final link in the WRC from Claremorris to Collooney/Sligo is surprising in view of the designation by Arup of a series of “strategic movement corridors” on the island, as illustrated in Figure 2.3.

13 The other two survivors from the original 3b package were the new line linking Derry with Letterkenny and improvements to the Limerick-Athenry line.

Figure 2.3: Strategic movement corridors on the island



(Arup)

The high cost of building a new rail line from Letterkenny/Derry to Sligo/Enniskillen (as proposed by Arup) was undoubtedly a factor explaining its subsequent elimination from the final selection. It must be assumed that the cost of restoring the existing Claremorris-Collooney line compared with the cost of an entirely new line would be considerably lower, and might even have scraped through the cost-benefit test, putting in place an important element of the wider strategic movement corridor down the west coast.

2.3.3 THE ARUP COST-BENEFIT ANALYSIS

As mentioned above, the individual four “regional and rural” packages (Northern Ireland, West coast, South coast and North midlands) are not presented separately. Rather, they are each presented in conjunction with the main Inter-city Package 2a. In what follows, we examine some elements of this confusing method of presentation.

Table 2.1 is an overall summary of the CBA results for all of the “packages” proposed by Arup, as presented in Arup Work Package 3. If we consider the results for Package 1, this is the only package that is analysed individually. It could be classified as a scenario where all that is done is what was already in the IE pipeline, combined with measures to decarbonise the rail network and fossil fuel use on roads as much as is feasible. The rather surprising result is that the benefit to cost ratio comes out at 1.2, only marginally above breakeven. Since this option consists mainly of improvements in existing rail links between six of the seven Irish cities where, it might be assumed, the use of mass transit rail is optimum, it suggests that the rather narrow criteria used in conventional CBA may not be appropriate in a situation where massive cuts in the use of fossil fuels in the transport system will shortly become legally binding.

“The rather narrow criteria used in conventional CBA may not be appropriate in a situation where massive cuts in the use of fossil fuels in the transport system will shortly become legally binding.”

The column headed “2a Higher Speed” shows the combination of Package 1 with Package 2a as originally specified. Using the Arup Report terminology, it combines the two packages “Short Term and Decarbonisation” and “Intercity, Higher Speed”. The “Intercity, Higher Speed” package is essentially focused on improvements to the rail lines connecting six of the seven cities (Derry is excluded) and working towards a speed of up to 200 km/hr. Here, the benefit-cost ratio is 0.9, considerably lower than in the previous Package 1.¹⁴

Turning to the four regional and rural packages (3a, 3b, 3c and 3d), in Table 2.1 these are each presented as amalgamations of Packages 1, 2a and the relevant regional package. We take package 3b as an example since this covers the west coast. The exact contents of Package 3b were listed previously in Section 2.3.2. Here, the benefit-cost ratio (BCR) for the combined 1, 2a and 3b packages falls to 0.7, indicating that the original package of measures included in the “West Coast” 3b package probably had very low BCRs.

Table 2.1a: Cost-Benefit Analysis of Arup Packages 1 to 3e (2011 prices)

Package	1: Short Term	2a: Higher Speed	2b: High Speed	3a: Northern Ireland	3b: West Coast	3c: South Coast	3d: North Mids.	3e: Final Scenario
Costs								
Capital Costs	(3,000)	(9,400)	(25,600)	(11,600)	(12,700)	(11,100)	(12,400)	(13,600)
Rolling Stock Costs	(400)	(700)	(1,600)	(800)	(800)	(800)	(800)	(700)
Operating and maintenance expenditure	(2,900)	(8,300)	(12,000)	(10,000)	(9,700)	(9,400)	(10,200)	(9,400)
Revenue	1,200	2,600	3,100	2,900	2,600	2,700	2,800	3,600
Present Value Costs	(5,200)	(15,700)	(36,200)	(19,500)	(20,600)	(18,500)	(20,500)	(20,100)
Benefits								
Business users	700	1,800	2,200	2,100	1,900	2,000	1,900	2,500
Commuter users	1,600	3,400	3,700	3,700	3,500	3,600	3,700	5,000
Leisure users	3,200	7,100	8,900	7,900	7,400	8,000	7,700	9,900
Highway decongestion	500	1,300	1,600	1,500	1,400	1,400	1,500	1,800
Accidents *	196	492	613	552	507	529	544	689
Local air quality *	81	202	252	227	208	217	224	283
Noise *	33	83	103	93	85	89	92	116
Greenhouse gases *	112	280	349	314	289	301	310	392
Other external effects *	62	155	192	173	159	166	171	216
Indirect taxation	(300)	(600)	(700)	(700)	(600)	(600)	(700)	(800)
Present Value Benefits	6,300	14,200	17,400	15,900	14,700	15,800	15,500	20,100
Net Present Value	1,100	(1,500)	(18,800)	(3,500)	(5,900)	(2,700)	(5,100)	6 *
Benefit to Cost Ratio	1.2	0.9	0.5	0.8	0.7	0.9	0.8	1.0

14 These results cast doubt on the usefulness of conventional cost-benefit analysis when the risks and challenges being addressed are of an existential nature. It suggests that the climate change externalities are not being taken into account sufficiently seriously.

Table 2.1a permits us to isolate the West Coast package (as initially specified by Arup) from the Intercity and Quick Fix packages. This is shown in Table 2.2 below.

Table 2.2: Identifying the West Coast BCR in isolation

	1: Short Term	2a: Higher Speed (includes 1)	3b West Coast (includes 2a)	Isolated West Coast (3b minus 2a)
PV Costs	5200	15700	20600	4900
PV Benefits	6300	14200	14700	500
Benefit to Cost Ratio	1.21	0.90	0.71	0.10

Not surprisingly, the “isolated” West Coast Package brings lots of extra construction and operating costs but almost no extra benefits and a BCR of 0.10.¹⁵

For convenience of the reader, we reproduce three of the underlying cost, benefit and BCR summary tables from the Arup Report, since these are published in the Arup Working Paper 3 that accompanied the Draft Report and only the summary (Table 2.1) is in the actual report.

Table 2.3: Costs of packages, less revenue (2011 prices)

	1: Quick Wins + decarbonisation	2a: Higher Speed (incl. Package 1)	2b: High Speed (incl. Package 1)	3a: Northern Ireland (incl. Package 1 and 2a)	3b: West Coast (incl. Package 1 and 2a)	3c: South Coast (incl. Package 1 and 2a)	3d: North Midlands (incl. Package 1 and 2a)	3e: Final Scenario
Capital expenditure	€ 3,000	€ 9,400	€ 25,600	€ 11,600	€ 12,700	€ 11,100	€ 12,400	€ 13,600
Rolling stock - High Speed	€ 0	€ 0	€ 1,500	€ 0	€ 0	€ 0	€ 0	€ 0
Rolling stock - Electric	€ 600	€ 900	€ 500	€ 900	€ 1,000	€ 1,000	€ 1,000	€ 900
Rolling stock - Diesel	-€ 200	-€ 200	-€ 300	-€ 200	-€ 200	-€ 200	-€ 200	-€ 200
Operating and maintenance expenditure *	€ 2,900	€ 8,300	€ 12,000	€ 10,000	€ 9,700	€ 9,400	€ 10,200	€ 9,400
Revenue	-€ 1,200	-€ 2,600	-€ 3,100	-€ 2,900	-€ 2,600	-€ 2,700	-€ 2,800	-€ 3,600
Present value of costs (FV C)	€ 5,200	€ 15,700	€ 36,200	€ 19,500	€ 20,600	€ 18,500	€ 20,500	€ 20,100

Note: Rounded to nearest € 100m. *Renewal costs are not included due to the high level of uncertainty about when, and at what scale, these costs would be incurred.

15

The low BCR for the “isolated” West Coast package is in the same low range as the BCR produced in the EY Report (0.21) for the restoration of the rail link from Athenry to Claremorris. The analysis carried out subsequently by West on Track showed that a more robust and accurate BCR was 1.2 (<http://www.westontrack.com/>)

Table 2.4: Summary of benefits for all packages (2011 prices)

	1: Quick Wins + decarbonisation	2a: Higher Speed (incl. Package 1)	2b: High Speed (incl. Package 1)	3a: Northern Ireland (incl. Package 1 and 2a)	3b: West Coast (incl. Package 1 and 2a)	3c: South Coast (incl. Package 1 and 2a)	3d: North Midlands (incl. Package 1 and 2a)	3e: Final Scenario
Rail travel time - Business	€ 700	€ 1,800	€ 2,200	€ 2,100	€ 1,900	€ 2,000	€ 1,900	€ 2,500
Rail travel time - Commuting	€ 1,600	€ 3,400	€ 3,700	€ 3,700	€ 3,500	€ 3,600	€ 3,700	€ 5,000
Rail travel time - Leisure/Other	€ 3,200	€ 7,100	€ 8,900	€ 7,900	€ 7,400	€ 8,000	€ 7,700	€ 9,900
Highways Decongestion	€ 500	€ 1,300	€ 1,600	€ 1,500	€ 1,400	€ 1,400	€ 1,500	€ 1,800
Accident*	€ 196	€ 492	€ 613	€ 552	€ 507	€ 529	€ 544	€ 689
Local air quality (Air Pollution)*	€ 81	€ 202	€ 252	€ 227	€ 206	€ 217	€ 224	€ 283
Noise*	€ 33	€ 83	€ 103	€ 93	€ 85	€ 89	€ 92	€ 116
Greenhouse gases (climate change - high)*	€ 112	€ 280	€ 349	€ 314	€ 289	€ 301	€ 310	€ 392
Other external effects (Nature and Landscape, Up/Downstream, Urban)*	€ 62	€ 155	€ 192	€ 173	€ 159	€ 166	€ 171	€ 216
Indirect taxation (Rail fare)	-€ 300	-€ 600	-€ 700	-€ 700	-€ 600	-€ 600	-€ 700	-€ 800
Present value of benefits (PVB)	€ 6,300	€ 14,200	€ 17,400	€ 15,900	€ 14,700	€ 15,800	€ 15,500	€ 20,100

Note: Rounded to nearest € 100m, except where indicated with *.

Table 2.5: Cost-Benefit Analysis Appraisal Summary (2011 prices)

	1: Quick Wins + decarbonisation	2a: Higher Speed (incl. Package 1)	2b: High Speed (incl. Package 1)	3a: Northern Ireland (incl. Package 1 and 2a)	3b: West Coast (incl. Package 1 and 2a)	3c: South Coast (incl. Package 1 and 2a)	3d: North Midlands (incl. Package 1 and 2a)	3e: Final Scenario
Present value of costs (PVC)	€ 5,200	€ 15,700	€ 36,200	€ 19,500	€ 20,600	€ 18,500	€ 20,500	€ 20,100
Present value of benefits (PVB)	€ 6,300	€ 14,200	€ 17,400	€ 15,900	€ 14,700	€ 15,800	€ 15,500	€ 20,100
Net Present Value NPV = B-R-C	€ 1,100	-€ 1,500	-€ 18,800	-€ 3,500	-€ 5,900	-€ 2,700	-€ 5,100	€ 6*
Benefit Cost Ratio BCR = B/(C-R)	1.2	0.9	0.5	0.8	0.7	0.9	0.8	1.0

Note: Rounded to nearest € 100m, except where indicated with *.

The final scenario used by Arup as the basis of their recommendations to government is shown as “3e: Final Scenario” in all of the tables above. As explained in Section 2.3.2 previously, a cull was made by Arup of the initial items in the four regional and rural scenarios. In light of the low BCR of 0.1 shown in Table 2.2 for the isolated, full West Coast package, it must be assumed that those projects that had the lowest BCR were eliminated by Arup and only those projects that had improved BCRs were included in Package 3e. However, we are not privy to that analysis if it was carried out.

We cannot identify the BCR for those elements of the original West Coast Scenario that survived the cull (i.e., new Derry-Letterkenny line, restored Athenry-Claremorris line, and improved Limerick-Ennis line) since they are bundled in with the survivors from the cull of all four regional and rural packages. But we can isolate the total impact of all of those recommendations from the original regional and rural packages (3a, 3b, 3c and 3d) that survived the cull. The results are shown in Table 2.6.

Table 2.6: Isolating impact of final scenario regional and rural recommendations

	1: Short Term	2a: Higher Speed (includes 1)	3b West Coast (includes 2a)	Isolated West Coast (3b minus 2a)	3e: Culled Regional & Rural (includes 2a)	Isolated Regional & Rural (3e minus 2a)
PV Costs	5200	15700	20600	4900	20100	4400
PV Benefits	6300	14200	14700	500	20100	5900
Benefit to Cost Ratio	1.21	0.90	0.71	0.10	1.00	1.34

This is very puzzling. It suggests that the elements from the four regional and rural packages that survived the cull and were included in the final Arup scenario had an isolated BCR of 1.34, i.e., considerably higher than the “low hanging fruits” scenario 1.

Our attempt to isolate the individual impacts of the regional and rural packages is only approximate and is based on the only data that were published in the Draft Arup Report. The complex analysis and discounting should be carried out on an individual basis rather than extracted from the aggregated Arup results as we were forced to do. But it adds evidence to our belief that all of the regional and rural packages were not, in fact, evaluated by Arup using the formalised transport evaluation methodology and model. It suggests that the results for the regional and rural packages may be seriously in error, just as the detailed analysis of the more formalised EY analysis was previously found to be in error.

[2.4] CONCLUSIONS

The authority and conviction of the draft Arup Report must be called into question. Although the report was supplemented by three detailed Working Papers that set out details of the transport evaluation models and cost-benefit claimed to have been used in the analysis, the extent to which this formalised analysis was actually applied to the wide range of smaller regional and rural recommendations is ambiguous.

The most serious ambiguity relates to Arup’s failure to realise that there was a disused rail line in existence that linked Claremorris to Collooney/Sligo and that this line is intact, as described in Section 6 of this Report. The ambiguity was compounded by the proposal by Arup to construct an entirely new rail line linking Claremorris to Collooney, although the Report sometimes refers to a new line linking Galway to Sligo.

No effort was made by Arup to analyse the costs and benefits of restoring the Claremorris-Collooney link, so we are left in the dark as to what exactly was going on. Could it be that the terms of reference given to Arup stipulated that they were to ignore the currently disused Claremorris-Collooney line?

The presentation of cost-benefit analysis for the four regional and rural packages was confusing, since their individual impacts on the BCR were combined with a much larger and very different Intercity package. However, a rough exercise in extracting the impacts of the West Coast original package (Table 2.2) showed that the BCR was tiny (0.1), which suggested that the Arup analysis may simply have repeated the errors and false estimates that were contained in the earlier EY report on the restoration of the link between Athenry and Claremorris.

Perhaps the biggest puzzle arises when we extract the individual impacts of those elements of all four regional and rural packages that survived the cull and were included in Arup's final scenario. The implied BCR came out as 1.34. Without knowing the details of how Arup actually carried out analysis of the regional and rural packages it is difficult to explain these results. They may simply be the consequences of the mixture of bottom-up and more judgemental top-down methodologies.

There is a more serious systemic problem with the Arup Report. While the analysis of Intercity rail improvements may be accurate and more amenable to the kind of automated model-based analysis used in such projects in the UK, the correct analysis of many of the items in the four regional and rural packages requires an understanding of the developmental context of regions such as the N&W which has been starved of modern transport infrastructure for many decades and whose development has lagged seriously behind the regions grouped around Belfast, Dublin, Cork, Limerick and Galway. A close reading of the Arup Report suggests that not even token lip service was given to the requirement to design an improved rail network that supported balanced regional development.

"A close reading of the Arup Report suggests that not even token lip service was given to the requirement to design an improved rail network that supported balanced regional development."

In lagging regions, the BCR will always come out very low if the methodology is narrowly based on quantifying short-term benefits from tinkering with the existing infrastructure. Experience from decades of EU Structural Funds has shown that radical improvements in national productivity can be produced by putting in place appropriate infrastructure. To date the city regions of Ireland have been the main beneficiaries. The Arup Report failed to recognise that this regional imbalance of growth will continue and even deepen unless future infrastructure is planned with an underlying regional development context. Small improvements (such as restoring the Claremorris-Collooney line) can produce very significant boosts to development that are difficult or impossible to capture using conventional cost-benefit analysis.



3

PASSENGERS BOARDING GALWAY TRAIN AT LIMERICK (N. DINNEN)



Section 3

A focused development
strategy for the N&W
region

[3] A FOCUSED DEVELOPMENT STRATEGY FOR THE N&W REGION

3

[3.1] INTRODUCTION

The current Irish national development strategy is set out in Project Ireland 2040 and prioritises the five major cities of Dublin (1,263k), Cork (223k), Limerick (102k), Galway (86k) and Waterford (60k). These cities contain 35% of total national population and are seen as the primary economic powerhouses of the present and future Irish economy in terms of the size of their population agglomerations, in terms of concentration of manufacturing and internationally tradable market services, and in terms of their third-level educational and research facilities. The main strategic policy focus of Project Ireland 2040 is on further strengthening these cities in terms of travel and communication internally within them, travel between them and their immediate hinterlands, and to ensure that all of the five cities, plus Belfast (345k) and Derry (85k) in Northern Ireland, are linked to each other by modern transport and communication infrastructure.

The task of articulating the detail of narrower regional elements of national development strategy is delegated to three Regional Assemblies (RAs): the East & Midlands RA, centred on Dublin; the Southern RA, encompassing Waterford, Cork and Limerick; and the Northern & Western RA, giving primacy to the city of Galway. Within the eight-county N&W region, Galway city lies at the southern end of a less developed area that stretches for some 345 kilometres from south Galway to north Donegal¹. By comparison, the distance between the cities of Galway and Dublin is only 207 kilometres.

This situation presents Irish development planners with a serious challenge. All five of the major cities designated in Project Ireland lie either on or south of an east-west axis from Dublin to Galway. The largest towns north of the Dublin-Galway axis are very closely linked to the massive growth of the Dublin metropolis on the east coast: Drogheda (44k), Dundalk (43k) and Swords (41k), respectively ranked 11th, 12th and 13th in population nationally. The 14th town in population ranking is Navan (34k), which lies 50 km to the north-west of Dublin but is linked to it by the M3 motorway. One has to descend to the 33rd ranking town (Letterkenny, 23k), the 37th (Sligo, 21k) and the 59th (Castlebar, 13k) to uncover the three largest towns that are both north of the Dublin-Galway axis and not close to Dublin and the east coast.

In the face of serious spatial distortions of this kind, and confronted with closely related economic distortions, planners have to make a choice between a one-size-fits-all development strategy or a differentiated strategy that tries to address very specific regional needs. This was the underlying logic of manner in which the European Commission designed the post-1992 expanded EU Regional Development Programmes and their associated Structural and Cohesion funds.

“In the face of serious spatial distortions of this kind, and confronted with closely related economic distortions, planners have to make a choice between a one-size-fits-all development strategy or a differentiated strategy that tries to address very specific regional needs.”

1

The constituent counties that make up the N&W Region are, from north to south: Donegal, Sligo, Leitrim, Monaghan, Cavan, Mayo, Roscommon and Galway.

Unfortunately, in the case of Ireland the entire country was treated as a single unit rather than in terms of advanced and lagging regions during the decades when the bulk of EU Structural Funds were available and were being disbursed. Regionalisation in Ireland came late in the day and evolved in a fashion where investments continued to be directed at major infrastructural projects located in the East & Midlands and the Southern regions. The nature and extent of underdevelopment in the N&W region remained understated at best, and effectively ignored at worst.

This is the developmental context within which we need to consider the restoration of a vital part of north-south transport infrastructure along the Atlantic coast, namely the Western Rail Corridor, linking three of the five Irish cities (Waterford, Cork and Limerick), through to a fourth (Galway) and onwards into Mayo and Sligo. Growth in large cities can easily become self-sustaining, and linking these four cities will further accelerate the pace of their development. But with the exception of Galway city in the extreme south of the N&W region, the rest of the area is characterised by scattered small, but sometimes quite dynamic towns where growth is unlikely to become self-sustaining in the absence of improved transport and communication links between them.

This Section has three objectives. We first review the demographic and socio-economic characteristics of Mayo and Sligo with an emphasis on the current state of population and business enterprises in these two counties.²

Second, we examine those elements of Project Ireland 2040 and the N&W RSES that are being used to guide development strategy out to the year 2040. The key focus will be on Mayo-Sligo since this is the primary catchment area for the restoration of the Claremorris-Collooney rail link as well as the N17 road improvement.³

Third, we identify some crucial changes that are needed if the N&W region is to move out of its lagging status and build on the regional characteristics that are either downplayed or ignored in current strategies.

[3.2] THE ECONOMIES OF MAYO AND SLIGO

3.2.1 SPATIAL DEMOGRAPHICS IN MAYO

The most recent Irish census was taken on Sunday, April 3rd, 2022,. The recorded national population in 2022 was 5.1 million, an 8% increase from 2016.

Between the more recent census years 1991 and 2022, national population grew by 46%. Top of the growth league was one of the four administrative divisions of Dublin: Fingal (116%), encompassing Dublin's north side. Meath was runner up at 110%. Dublin South grew at the national average, and the two remaining Dublin divisions (Dun Laoghaire/Rathdown, 24%; Dublin City, 26%) were nationally the slowest and third slowest.⁴

2 We restrict our attention to these two counties of the N&W Region because our primary focus is on the Western Rail Corridor, and specifically, the case for restoring the link from Claremorris in Mayo to Collooney in Sligo. However, many of our findings are likely to apply to the other six counties that make up the N&W region.

3 The potential benefits flowing from a fully restored WRC extend beyond Mayo and Sligo. These aspects will be taken up in our concluding Chapter.

4 Unlike slow population growth in western peripheral counties, the relatively slow growth in three of the four Dublin regions is a measure of their already high level of development and built-up nature. The prices of existing houses are extremely high. Rented accommodation is hard to find. Land for building houses is constrained and very expensive. The one Dublin administrative division not yet fully built up is Fingal, which has become a vast building site.

Dublin traffic commuter patterns demonstrate that adjoining counties of Meath (110%), Kildare (102%), Wicklow (60.2%) and Westmeath (55.5%) have become dormitory counties for the Dublin metropolis.⁵

The slowest individual whole-county population growth was experienced by Mayo (25%), with Sligo only slightly higher (28%). Starting from the lowest growth, the ranking is Mayo (25%) at the bottom, followed by Tipperary, Cork (excluding Cork city), Monaghan, Sligo, Kerry, Limerick, Donegal, and Roscommon, all in the range of 26%-35%. This pattern points to an east– west divide, but a divide with the five cities prospering and the hinterlands lagging.

The census for Mayo identifies twenty two towns for the complete 1991 to 2022 period. The fastest growing is Ballinrobe at 156%, with Balla at 155%. Knock, Ballyhaunis, Claremorris, and Ballindine all show over 100% growth. The biggest loser is Killala (-18%), with Crossmolina (-6%) and Ballycastle (-2%) all registering declining populations since 1991.

Ranking population growth by town, a very clear spatial pattern emerges in Mayo (Table 3.1). Towns in middle and south Mayo grew robustly.⁶ Towns to the north are struggling, and the further north or northwest one goes, the worse the problem becomes.

Table 3.1 : Distribution of population across Mayo towns

Population trends in Mayo: 1991 to 2022				
Town	1991	2022	% Growth	Rank
Ballinrobe	1229	3148	156.1	1
Balla	337	860	155.2	2
Knock	440	1029	133.9	3
Ballyhaunis	1282	2773	116.3	4
Claremorris	1907	3857	102.3	5
Ballindine	232	468	101.7	6
Westport	3688	6872	86.3	7
Castlebar	7648	13054	70.7	8
Charlestown - Bellahy	712	1172	64.6	9
Kilkelly	263	429	63.1	10
Newport	521	815	56.4	11
Foxford	974	1452	49.1	12
Bangor Erris	262	344	31.3	13
Kiltimagh	952	1232	29.4	14
Ballina	8167	10556	29.3	15
Swinford	1216	1459	20.0	16
Achill Sound	229	265	15.7	17
Belmullet	986	1042	5.7	18
Keel - Dooagh	557	567	1.8	19
Ballycastle	225	220	-2.2	20
Crossmolina	1202	1134	-5.7	21
Killala	713	587	-17.7	22
Total Co. Mayo	110713	137970	24.6	

5 Ratoath, in Meath, was the fastest growing town (an astonishing 1,600%) between 1992 and 2022.

6 Kiltimagh, a slow growing town in central Mayo, is an exception. A possible explanation is that it lies between two national east-west roads (the N5 and the N17), but cannot be accessed on a national road. The currently disused WRC runs through Kiltimagh.

As the data indicate, many of the slow and negative growth Mayo towns (coloured orange in Table 3.1) lie on or close to the currently disused rail line linking Claremorris to Collooney/Sligo and the inadequate N17 national route. The absence of good transport links is probably the key factor behind the failure of the northern parts of Mayo to grow as rapidly as the central and southern parts.

Figure 3.1 shows that the Mayo towns can usefully be displayed in three clusters centred on Ballina (to the north); Castlebar/Westport (in the centre); and Claremorris/Ballyhaunis/Ballinrobe (to the south and east). Towns in the southern and central region are experiencing very rapid population growth. However, the northern cluster of towns is experiencing much slower growth.

Figure 3.1: Town clusters in Mayo



3.2.2 SPATIAL DEMOGRAPHICS IN SLIGO

Sligo, to the north of Mayo, is designated in the N&WRA’s Regional Spatial and Economic Strategy as a “regional growth centre”. Here, a different pattern of population growth emerges (Table 3.2).⁷ Population in the county grew by 28.2%, slightly higher than Mayo. However, Sligo town, the largest in Mayo/Sligo, grew by only 14.7% over the period 1991-2022, the same rate as Achill Sound in Mayo. The fastest growing county Sligo town is Coolaney, lying to the south-west of Sligo town at a distance of 20km, which experienced a six-fold increase since 2002.⁸ There are five other small Sligo towns whose growth was dramatic over the 1991 to 2022 period: Strandhill (203%), Ballysadare (201%), Collooney (194%), Enniscrone and Tubbercurry (117%), with population levels in the range 1,800 to 2,300.

7 Table 3.2 splits the Sligo data into towns with a population growth rate of 100% or more (yellow) and those with growth less than 100% (orange)

8 Data for Coolaney only exist for the shorter period 2002 to 2022.

Table 3.2: Distribution of population across Sligo towns

Town population trends in Sligo: 1991 to 2022								% change	
	1991	1996	2002	2006	2011	2016	2022	1991-2022	Rank
Coolaney *	---	---	167	208	866	990	1155	591.6	1
Strandhill	654	764	1002	1413	1596	1753	1982	203.1	2
Ballysadare (Ballisodare)	581	612	853	971	1344	1350	1747	200.7	3
Collooney	612	573	619	892	1369	1610	1797	193.6	4
Tubbercurry	1069	1089	1171	1421	1747	1986	2307	115.8	5
Enniscrone (Inniscrone)	610	692	668	829	1223	1156	1291	111.6	6
Gurteen (Gorteen)	233	257	250	269	349	393	421	80.7	7
Cliffoney (Cliffony)	292	305	327	425	483	492	521	78.4	8
Ballymote	1014	994	981	1229	1539	1549	1711	68.7	9
Charlestown - Bellahy	712	675	753	859	914	1033	1172	64.6	10
Riverstown	274	266	273	310	374	334	394	43.8	11
Easky	165	174	211	240	245	239	235	42.4	12
Mullaghmore	124	164	137	147	128	136	172	38.7	13
Rosses Point	707	799	774	872	834	883	883	24.9	14
Sligo	17964	18509	19735	19402	19452	19199	20608	14.7	15
Ballincar	429	456	510	526	444	424	423	-1.4	16
Total for County Sligo	54756	55821	58200	60894	65393	65535	70198	28.2	

* Percentage change from 2002 to 2022

Sligo appears to be characterised by a single cluster of four relatively small, but rapidly growing towns located to the south of Sligo town, whose own population is very slow growing. The other two towns in the fast growing group are Tubbercurry and Enniscrone. The population of Tubbercurry is 2,307, which makes it the second largest town in County Sligo. However, these two towns are spatially isolated from the Sligo cluster and although growing at over 100% since 1991, their rate of growth is only half that of those in the Sligo cluster. It is interesting to note that in 1991 the population of Tubbercurry was approximately twice that of each of the top four towns in the Sligo cluster. However, by 2022 all four had reached a population size only marginally lower than that of Tubbercurry in 2022.

Figure 3.2: Town clusters in Sligo



The counties of Mayo and Sligo clearly share some common demographic characteristics. Growth is spread among a range of relatively small towns, some of which are quite dynamic, but their peripherality is exacerbated by poor transport linking infrastructure. Both counties have demonstrated that they can attract and sustain dynamic modern industries and act as tourism focal points (examined below). However, they risk failing to achieve their true potential because of the disconnected manner in which regional policy is applied in Ireland.

The population of the towns in the Sligo cluster is likely to continue to grow, but the cluster centre – Sligo town – may continue to experience slow growth. The implications of this pattern of growth is a cause of some concern, particularly when we turn to the current and likely future situation in the Sligo enterprise sector.

3.2.3 THE ENTERPRISE SECTORS IN MAYO AND SLIGO

It is important to examine the economy of any individual county by using an enterprise perspective as well as using the more common socio-economic perspective. You cannot have success in social terms without success in enterprise terms since people will emigrate from regions if employment and opportunities for advancement are scarce. The social and enterprise perspectives are inextricably linked and need to be considered jointly.

Within the enterprise sector it is helpful to explore the distinction between firms that trade exclusively in the local (or county) market and those that trade outside the county in national and international markets.

The enterprise sector in a county economy can be structured into the following four categories:

- Public services
- Private services
- Manufacturing
- Agriculture

Using this classification, we briefly review the enterprise sectors of Mayo and Sligo.

THE MAYO AND SLIGO ENTERPRISE SECTORS

PUBLIC SERVICES

Employment numbers in the public services sector tend to mirror the county population size. If some national public services are re-located to Mayo or Sligo through a decentralisation programme, this relationship can change. But it is never likely to deviate very much from a national average since all other counties also have their claims on such decentralisations.

PRIVATE SERVICES

The aggregate private services sector will always be the largest employer in a county economy, just as it is even in a large urban agglomeration like Dublin. For example, almost 45 per cent of employment in the West region (which includes Mayo, Galway and Roscommon) is in private services. Adding public services brings the total for services to just under 70 per cent. However, it is useful to split the private services sector into two components. We will call these “non-traded” and “traded”.⁹

⁹ The term “non-traded” means that the service is not traded outside the county to external markets in the rest of Ireland or abroad. Tourists from outside the region would qualify as “external”.

Non-traded private services: In Mayo and Sligo, many private service activities, including much of building and construction, are directed mainly at the local population and employment numbers will tend to rise or fall as the county population rises or falls. We designate these as “non-traded” activities.

TWO CASE STUDIES IN TRADABLE MARKET SERVICES



JENNINGS O'DONOVAN is a multidisciplinary consulting engineering firm, founded in 1950, specialising in renewable energy, water supply, wastewater treatment and in the provision of planning and environmental services. It is located in the Finisklin Industrial Estate, Sligo Town.

With a portfolio extending to over 2,000MW of power, Jennings O'Donovan is a recognised market leader in Wind Energy development. Its portfolio extends to an investment of €3 billion in the Wind Energy Sector. From project inception through planning, design, procurement, construction and commissioning, Jennings O'Donovan offer engineering, environmental and business expertise for renewable energy projects in wind and in solar and acts as technical advisors to Lending and Banking institutions operating in the renewable energy sector.



ELECTRIC SKYLINE was established in 2007 with its headquarters in Claremorris, Co Mayo, with one lighting contract. They have evolved into a successful organisation and one of the main lighting specialists in Ireland. Today they employ over 40 local highly qualified professionals. Their customer base has grown steadily since 2007 making them one of the leading sporting, public, commercial and retail lighting specialists in Ireland. Their projects are all specific and customised to individual needs.

Electric Skyline is an example of an enterprise that operates in the area of technical services. In other words, it does not manufacture its products. Rather it sources them elsewhere and provides a sophisticated analysis, design, installation and maintenance service. Since it trades all over Ireland, it is an example of a “traded” services enterprise, whose growth is not constrained by the small size of the local Mayo market for lighting solutions.

Traded private services: This is where services are sold either to markets located outside the county or to people who do not live in the county (e.g., tourists). Here there is the possibility of growing the sector beyond the natural limits imposed on further growth of non-traded activities by the size of the local market. The most obvious example relates to tourism, where services in retail, culture, entertainment, restaurants, hotels, transport, etc., are effectively “exported” to visitors.

In a small sample taken recently of ten Mayo enterprises, three could be classified in part as producing tradable services.¹⁰ The success of two (Foxford Woollen Mills and The Gourmet Greenway) derives from a synthesis of small scale manufacturing and a rising demand for quality products and services that is driven by the rapidly expanding Mayo and Sligo tourism sectors. Another (Electric Skyline, based in Claremorris) is a highly skilled operation that markets a tradable service output based on electronics and lighting of large commercial facilities in Ireland and abroad.

MANUFACTURING

The next category of enterprise, manufacturing, also provides a way of expanding a county enterprise sector as a whole since in almost all cases firms engaged in manufacturing produce goods (including any associated services) that can be traded outside the local county market. Here, a sub-division into indigenous firms and foreign multinational firms is useful.

Where manufacturing enterprises can make use of manufacturing and service inputs that can be sourced locally, such firms are described as having large “multiplier” impacts on the local economy as local sub-suppliers also benefit. Indigenous firms often have higher multiplier impacts than foreign multinational firms since they tend to source more inputs from the local market. Of course, both types of firm generate secondary income effects as their employees purchase goods and services produced locally and imported.

The multinational manufacturing enterprises are crucial to the Mayo and Sligo economies. While many of the larger Mayo and Sligo-based multinationals are in the medical-technology area, with independent single supply global brands, nevertheless their manufacturing processes, workforce skills and capabilities have much in common, i.e., a high level of technical training and expertise. Although neither Mayo nor Sligo have all of the advantages of the so-called “five cities”, nevertheless they have successfully attracted and retained a range of modern multinational plants (Tables 3.3 and 3.4).

A special case in Mayo is Portwest, an indigenous multinational. The Portwest success story is one where an Irish firm initially producing relatively traditional products (i.e., clothing) evolved and restructured to meet the challenges of specialisation and globalisation. While foreign multinationals have been good for the Irish economy, the rise of Irish multinationals like Portwest will provide a more robust domestic-foreign balance.

The rest of the Sligo-Mayo manufacturing base is ‘indigenous’ since it was established and is managed mainly by local entrepreneurs. These firms are assisted by the state agencies Enterprise Ireland (EI), Údarás na Gaeltachta and the Local Enterprise Offices (LEOs) operated by the County Councils.¹¹

10 For details, see “The Economy of the Atlantic Corridor: A study of County Mayo” (<http://www.westontrack.com>).

11 For details on the Mayo indigenous manufacturing sector, see “The Economy of the Atlantic Corridor: A study of County Mayo” (<http://www.westontrack.com>).

TWO CASE STUDIES IN MANUFACTURING



KAON AUTOMATION, which employs 45 highly-skilled people mainly in the engineering sector, designs automated equipment – including high-tech robotic machines — for leading multinationals such as Baxter Healthcare in Castlebar and large indigenous companies. KAON is headquartered in Sligo at a 3,000sqm purpose-build premises in Collooney. Established as Automation Technology Services in 2005 by co-founders Garreth Finlay and Fergus Hynes, KAON is a cutting-edge automation specialist supporting manufacturing companies. It delivers high-quality, innovative and scalable custom-designed automation solutions for leading manufacturing companies globally including high-tech robotic machines to customers mainly in the MedTech, electronic and automotive sectors.



BYRNE RAPID BUILD (formerly Big Red Barn) is one of the leading producers of Modular and Factory Built homes in Ireland, with a flexible design, production and “one stop shop” options that ensure a proficient service from beginning to end. Its modular building structures are manufactured at a 30,000 sq. ft. premises in Swinford, County Mayo. They have a rapidly growing team of employees and offer a twenty-five-year structural warranty, the longest guarantee period available in the market. Working closely with clients in all stages, BRB can take projects from inception to completion, providing every service from site survey and assessment, advice on budgeting, costing and mortgage certification, house design and planning application, and commencement notices to the Local Council.

Table 3.3: IDA Client Companies located in Mayo

COMPANY NAME	LOCATION
Abbvie (Allergan)	Carrowbeg, Westport, Co. Mayo
Anthem (De Care)	IDA Business Park , Clare, Claremorris
Ballina Beverages (Coca Cola)	Killala Road, Ballina, Co Mayo
Baxter Healthcare Ltd	Breaffy Rd., Castlebar and Swinford
Charles River Laboratories	Carrentrila, Ballina, Co Mayo
Fort Wayne Metals	IDA Business Park, Breaffy Rd., Castlebar
Heyco-Werk	Bunree Road, Ballina, County Mayo
Hollister Overseas Ltd	Foxford Rd, Rahans, Ballina, Co. Mayo
Johnson & Johnson Vision	Ballina, Co Mayo
Lafferty Ireland Admin	Westport, County Mayo, Ireland
Telus (Lionbridge)	Ballina, Co Mayo
Meissner	Breaffy Rd., Castlebar, Co Mayo
Schuetz	Killala Business Park, Co. Mayo
Steris	Lodge Road, Westport, Co Mayo
Westrock (Multi-Packaging)	Golfcourse Road, Westport, Co. Mayo

Table 3.4: IDA Client Companies located in Sligo

COMPANY NAME	LOCATION
Abbot Ireland Diagnostics Division	Finisklin Business Park, Sligo
Abbot Ireland Nutrition	Carbury Point, Finisklin Business Park, Sligo
Abbot Nutrition Ltd	Carbury Point, Finisklin Business Park, Sligo
Abbvie Ireland NL. B.V.	Ballytivnan, Sligo
Abbvie Ireland NL. B.V.	Manorhamilton Rd., sligo
Advantio	Bridge St., Sligo
Amcor Flexibles Sligo Ltd	Finisklin Business Park, Sligo
Andrew Medical & Laundry Supplies	Finisklin Business Park, Sligo
Apex Fund Services	Castle Street, Sligo
Arrotek Medical	Finisklin Business Park, Sligo
AT Management	Harmony Hill, Sligo
Automatic Ireland	Atlantic Technological University, Sligo
Avenue Mould	Finisklin Business Park, Sligo
B. Braun Hospicare Ltd	Finisklin Business Park, Sligo
Beyond (Overstock)	Finisklin Business Park, Sligo
E3Retail Ireland	Atlantic Technological University, Sligo
Evolutio Software Systems	Connacht House, Markievicz Rd., Sligo
Fohrenbach Precision Slides Ltd	Finisklin Business Park, Sligo
G. Bruss GmbH	Finisklin Road, Sligo
ICU Medical Hospital	Finisklin Business Park, Sligo
Litec Moulding Ltd	Finisklin Business Park, Sligo
Live Tiles Ireland	Teeling Street, Sligo
Ophardt Hygiene	Ballymote, Co. Sligo
Pat Pat	Atlantic Technological University, Sligo
Phibro Animal Health Ireland	Finisklin Business Park, Sligo
Phillips Medisize Sligo (Molex)	Finisklin Business Park, Sligo
Reed Personnel Services Ltd	Tubbercurry, Co Sligo
Revenium (Hyoercurrent)	Remote Working in Sligo
RPS Group	Finisklin Road, Sligo
SL Controls (NNIT)	Collooney, Co. Sligo
Socrates Healthcare Ltd	Finisklin Road, Sligo
Tente Ltd	Ballymote, Co. Sligo
Trailstone	Atlantic Technological University, Sligo

AGRICULTURE

The fact that we have left the agriculture sector to the end is a measure of how its share of the Mayo and Sligo economies has declined since the 1950s. For example, the estimated value of Mayo's annual farm output today is about €250 million. The value of Mayo's net industrial output today is almost €5 billion, about 20 times larger. However, these stark numbers conceal the potential that this sector could come to play in the Mayo and Sligo economies, both through expanded farming activity and through activities that could both increase the incomes of farmers and land owners and facilitate ancillary activities that are land based (renewable energy, high nature-value farming, agri-tourism). The Sustainable Agricultural Strategy for Mayo produced by Mayo County Council develops these ideas in an exciting way.¹²

PULLING TOGETHER THE COMPONENTS OF THE COUNTY ENTERPRISE SECTORS

A complex range of factors arise when considering the future of a county enterprise sector. These include:

- The strong foreign multinational base in the county needs to be nurtured and retained. Proactive monitoring of their continued success is desirable since early warning about any adverse changes (e.g., maturing of the company's products that affect its sustainable cost competitiveness), would permit better advance planning in towns where the dependence on a single firm is very high.
- The Mayo and Sligo-based SME sector is innovative and often built off capabilities emerging from larger enterprises (both multi-nationals and the larger indigenous SMEs).
- Leadership within Mayo and Sligo-based SMEs tends to be local, i.e., owners who started up and developed the business and/or returned from abroad to set up a business.
- Although the Mayo and Sligo-based manufacturing sector today is still too small to generate and benefit much from clusters of interacting and co-operating enterprises, there is a potential for clusters to emerge as the enterprise sector grows.
- The small artisan food producer sector in Mayo and Sligo has become very active in recent years. Promoting small start-ups in this sector will require innovative and imaginative support mechanisms.
- The importance of the retail and wholesale elements of the service sector is apparent in terms of its labour intensity. Current changes in all aspects of this sector caused by disruptive technologies and the spread of e-commerce will require careful monitoring of the likely consequences.

[3.3] KEY ELEMENTS OF CURRENT REGIONAL DEVELOPMENT STRATEGY

3.3.1 INTRODUCTION

In order to identify a strategic development rationale for the restoration of the complete Western Rail Corridor, it is necessary to understand the challenges of regional economic and social planning in a region that has very different characteristics to those in the more developed Eastern and Midland (E&M) and the Southern (S) regions, centred on Dublin, Waterford, Cork and Limerick.

Regional strategies can end up being ineffective if there is a strong preference to fall back on national development frameworks with the hope that centralised policies implemented in more developed regions will generate sufficient spillover and trickle-down effects from core densely populated regions to peripheral, sparsely populated regions. Historical experience tells us that this form of development is seldom successful.

Since the present analysis is being carried out in the aftermath of publication of two reports by consultants EY (2021) and Arup (2023), we examined the consulting briefs that were given to EY and Arup when they were awarded the appraisal contract on the Athenry-Claremorris restoration and the All Island Strategic Rail Review (AISRR). We found that great emphasis was placed in both consultant briefs on the need to use a context wide enough to recognise and quantify the manner in which a restored WRC could become a development driver of the Atlantic Economic Corridor in its own right.¹³

Any effective development strategy for the central-AEC region (embracing mainly north Galway, Mayo, and Sligo, but with implications for Donegal, Leitrim and Roscommon) is likely to be very different from the development strategy set out in Project Ireland 2040 which is mainly focused on the five-city regions centred on Dublin, Cork, Limerick, Galway and Waterford. Agglomeration benefits arise naturally in large urban metropolitan centres. But the creation of a dynamic development process in regions where towns are small and dispersed geographically needs pro-active policy actions tailored to the very different structure and characteristics of such regions. A crucial policy instrument needs to be the improvement of transport and communication links that assist in the generation of agglomeration effects through creating better links between smaller, but often dynamic, urban centres. This is where the benefits of restoring the WRC are likely to play a regional developmental and transformational role.

“The creation of a dynamic development process in regions where towns are small and dispersed geographically needs pro-active policy actions tailored to the very different structure and characteristics of such regions. A crucial policy instrument needs to be the improvement of transport and communication links that assist in the generation of agglomeration effects through creating better links between smaller, but often dynamic, urban centres.”

13

Later we will show that the analysis methodology actually used by EY and Arup largely ignored this aspect of their consulting brief. In addition, the fairly inflexible public expenditure guidelines that govern all public investment programmes may have an unintended negative side effect if they fail to take full account of the role of investment in energising activity in less developed or lagging regions..

The creation of a dynamic development process in regions where towns are small and dispersed geographically needs pro-active policy actions tailored to the very different structure and characteristics of such regions.

3.3.2 REGIONAL POLICY ASPECTS OF PROJECT IRELAND 2040

A case can be made showing that if the existing national development strategy, Project Ireland 2040, is left in place, it will be very difficult to justify public investment in infrastructure of the kind that is needed to address obstacles to development in the N&W region.¹⁴ The N&W region is different from the East and Midland (E&M) region and the South (S) region and requires a strategy that is specifically targeted at the long-standing historical obstacles to growth, the distorted spatial structure of the region and the lagging status of its economy. One interpretation of the strategic approach of Project Ireland 2040 is that the lack of any large population agglomerations in the N&W region, with the exception of Galway city in the extreme south of the 345 km elongated region, is treated by policy makers as if it was an indicator of the inability of this region to keep up with the pace of development elsewhere on east and south of the island rather than a consequence of failure to provide the necessary transport and communication infrastructure to facilitate such catch-up.

“The N&W region is different from the East and Midland (E&M) region and the South (S) region and requires a strategy that is specifically targeted at the long-standing historical obstacles to growth, the distorted spatial structure of the region and the lagging status of its economy.”

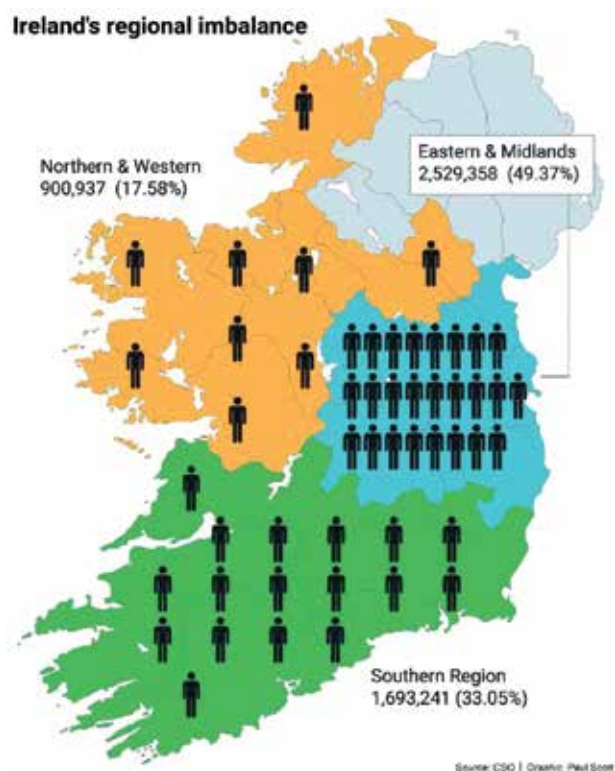
Project Ireland 2040 (PI 2040) claims to be different from previous regional development approaches, integrating strategic objectives for rural, regional and urban development as well as integrating the efforts of the entire scope of the public sector. Regional aspects of development planning were drawn up by dividing Ireland into three “super regions”: Northern & Western (N&W); Southern (S); and Eastern & Midlands (E&M), where each has a Regional Assembly that is charged with designing strategies for their areas and for ensuring that they are co-ordinated with the national top-down strategy. National strategy is predicated on a projection of an increase in population of about one million that will take place between 2020 and 2040, assumed to be divided equally between the five large cities (Dublin, Cork, Limerick, Galway and Waterford), on the one hand, and the rest of the other towns, villages and rural areas, on the other. In terms of the non-city areas, the kind of desirable population development envisaged will be “compact” (i.e., mainly concentrated in existing towns and villages), with enhanced regional accessibility, stronger rural economies, together with a wide range of desirable social and environmental strategic outcomes. Certain of the larger towns are selected for special attention and are intended to play a leading role in their catchment areas.¹⁵ This, it is claimed, is to be inclusive development, unlike the previous 2002 National Spatial Strategy which, by making explicit choices, gave rise to the unpopular reality of there being regional winners and losers.

¹⁴ We have already seen in Section 2 that conventional cost-benefit analysis, when applied in an underdeveloped peripheral region, will almost always return a very low benefit-cost ratio (BCR) unless the development goal is taken seriously into account.

¹⁵ In the N&W region, three such towns are designated: Letterkenny, Sligo and Athlone.

The ambitious aim in PI 2040 is to “disrupt trends that have been apparent for the last fifty years and have accelerated over the past twenty”. However, there are many aspects of the plan that continue to embody the kind of thinking that lay behind previous unsuccessful regional strategies.

Fig 3.3: The consequences of poor regional planning as reflected in population distribution.



There appears to have been only very partial and inadequate efforts made to gather detailed and systematic data about the performance of the Irish economy on a regional basis, and no effort to identify and demarcate the kinds of regional divisions that would be appropriate to form the basis of a sound regional development strategy.¹⁶

The emergence of the three super regions as the sub-national basis for regional development is presented as a *fait accompli* and no compelling justification for this choice is offered. However, this choice of super regions creates many problems and not only splits the so-called Atlantic Economic Corridor between two different Regional Assemblies (the Northern & Western and the Southern), but includes two non-AEC counties in the N&W region (Cavan and Monaghan) that more logically belong to the catchment area of the east coast, centred on Dublin and Belfast. In addition, it combines into the N&W super region the counties that share a border with Northern Ireland (Donegal, Leitrim, Cavan, Monaghan) and the counties that do not (Sligo, Roscommon, Mayo and Galway), making it difficult to distinguish the “peripheral” and the “border” barriers to development.¹⁷ On balance, one might say that while the N&W super-region is a collection of eight separate counties, in no sense is it a region defined by a common set of demographic characteristics and enterprise structure and the main barriers to growth and development differ between the constituent counties.

¹⁶ The only research explicitly quoted in Project Ireland 2040 was a series of population and employment projections to 2040 carried out by the ESRI (see Morgenroth, E., *Prospects for Irish Regions and Counties: Scenarios and Implications*, ESRI Research Series No. 70, 2018).

¹⁷ See Bradley J. and M. Best, *Cross-Border Economic Renewal: Rethinking Regional Policy in Ireland*, 2012, Centre for Cross-Border Studies.

There are about ten references to the Atlantic Economic Corridor in PI 2040, but the only substantive one (on page 41 of PI 2040) is reproduced below (Figure 3.3).¹⁸ This is the only time where there is any reference to a modestly deeper analysis of how to identify and designate different regional spaces that share a range of common developmental challenges. Hence, it is difficult to understand why planning responsibility for the AEC is split up between two Regional Assemblies that share the challenges of peripheral underdevelopment as well as having many heterogeneous internal characteristics.

Figure 3.4: The Atlantic Economic Corridor



Enterprise development models that succeed in an urban setting are unlikely to succeed in a non-urban setting. Aside from Galway, none of the other seven counties making up the N&W region have any towns with a population greater than about 25,000. In Mayo, the largest town, Castlebar, has a population of only 13,054. The remainder of the N&W population outside the city area of Galway is scattered among a series of even smaller towns and villages which often have poor road and rail links and inadequate broadband facilities. The top-down nature of enterprise policy making in the two key agencies, the IDA and Enterprise Ireland, means that it is less likely that they will promote the emergence of “place-specific” enterprise strategies. Unless such policies emerge, the centripetal forces that have distorted spatial growth in Ireland are likely to continue to operate.

PI 2040, in spite of its claims to be a radical departure from the approaches used in the past, represents in many ways a direct continuation of the rather weak and permissive regional policies of the past. The evidence base for the proposed policy initiatives is worryingly weak and there is a confusing conflation of spatial planning (towns, roads, amenities, etc.) with economic development planning (enterprises, jobs, business-related infrastructure, etc.), with much more attention given to the former than to the latter.

In defence of PI 2040, it may be that the intra-regional analysis that is missing in the national document was intended to be supplied by the deliberations of the three Regional Assemblies: E&M, S and N&W. Each Regional Assembly was tasked with drawing up a Regional Economic and Spatial Strategy (RESS) designed to spell out specific regional development needs and objectives. In the case of the N&W region, this will now be reviewed.

¹⁸ All of the other references to the AEC in Project Ireland 2040 tend to be as geographical shorthand for the “west coast” rather than as spatial development characteristics.

3.3.3 THE N&WRA REGIONAL SPATIAL AND ECONOMIC STRATEGY

The publication of the RSES by the N&WRA in 2019 was the first time that a serious effort had been made to plot out a development strategy for the N&W region of the island. In tackling this, there were serious challenges to be faced. First, there was little by way of detailed economic or business research on this region that would be a normal requirement prior to drawing up a forward-looking strategy.¹⁹ Second, the region was quite heterogeneous. Donegal was almost an island, isolated from the rest of the nation. Four of the N&WRA counties (Donegal, Leitrim, Cavan and Monaghan) were “border” counties, across which Irish strategic planning came to a halt. The only large urban agglomeration - Galway city - was located in the extreme south of the region. There were only three towns in the whole N&W region with populations of about 20,000 (Letterkenny, Sligo and Athlone) and the rest of the rest of the towns have much smaller populations and are scattered all over the region.

The choice of Letterkenny, Sligo and Athlone as the three “regional growth centres”, seems to have been influenced by location (extreme north, centre and extreme east of the region) and by size (these were the three largest towns in the N&W region). The expectation was that they would perform “city-like” functions.

The regional development strategy had three stated objectives:

- (a) Compact growth:
- (b) Enhanced regional accessibility
- (c) Sustainable mobility

It was recognised that on the basis of Gross Value Added (GVA) per head, the N&W region was seriously lagging behind the other two Irish regions and that it had moved back from a “More Developed Region” to a “Transition Region”.²⁰

European regional development activities and funding were massively increased in the years prior to the implementation of the Single European Market in 1992 and the Irish national economy benefited hugely from this development aid. The current health and prosperity of the nation is a direct result of how that aid was used to fund national programmes of investment in infrastructure, telecommunications, universities, training, support for enterprises, etc. However, the manner in which the funds were allocated across Irish regions also produced a distorted and lagging pattern of regional development.²¹

The total allocation to Ireland for the current EC programming period 2021-2027 amounts to some €990 million, of which the €217 million is destined for the NW region. National co-finance may double that, but national co-finance is seldom genuinely additional to existing purely national investment programmes.

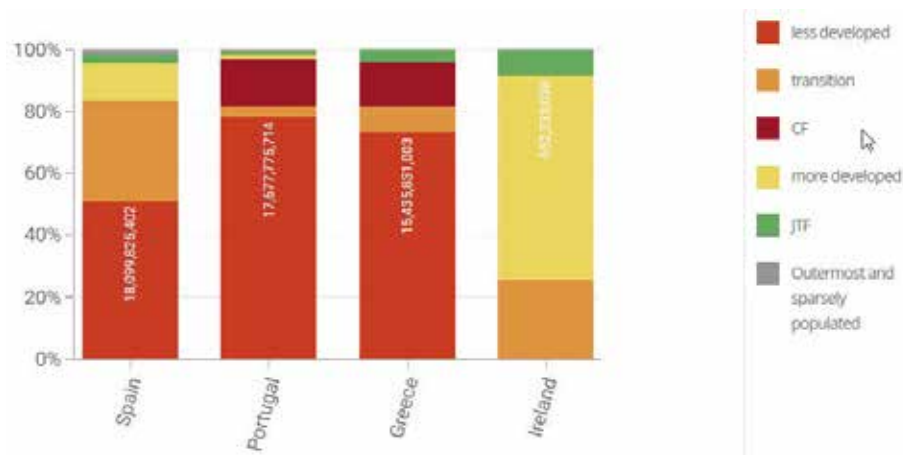
19 The Economy of the AEC: A Study of County Mayo, published in 2019, was a first effort to define and study an economy at the county level (<http://www.westontrack.com>).

20 In fact, the European Parliament, based on a more accurate and searching methodology, has further relegated the N&W region to “lagging” status.

21 In 2012 West On Track submitted a petition to the EU Petitions Committee detailing how some ERDF funding for the North West was being allocated by the government to the more developed South and East region. When the WOT delegation presented the facts in Brussels, the petition was upheld by the Petitions Commissioner. However, the government side denied any maladministration and nothing was done to force a change in funding allocation.

The €217 million for the NW region is about 25% of the total €990 million EC funding for 2021-2027, with most of the rest (about 66%) going to the more developed South and the East & Midlands regions. In contrast to the Irish funding allocations, in Greece, Portugal and Spain almost 100% of their most recent EC funding is being allocated to their own less developed regions and very little to their more developed regions.

Figure 3.5: Regional Funding Allocations: Spain, Portugal, Greece and Ireland



“The €217 million for the NW region is about 25% of the total €990 million EC funding for 2021-2027, with most of the rest (about 66%) going to the more developed South and the East & Midlands regions. In contrast to the Irish funding allocations, in Greece, Portugal and Spain almost 100% of their most recent EC funding is being allocated to their own less developed regions and very little to their more developed regions.”

The design and conduct of regional policy in the N&W region have never been exposed to deep, informed and independent scrutiny. The manner in which policy is implemented (many small funding projects, often with vague and unquantified objectives) makes it almost impossible to evaluate impacts. Current policies are weak, unfocused and under-funded. It is disturbing that the problem of underdevelopment in the N&W region is acknowledged by policy makers, yet they do little to address its underlying causes.

There was a certain logic behind the RSES choice of Letterkenny, Sligo and Athlone as designated “centres of scale”. However, in the case of Sligo, examination of population growth in recent years would have suggested that Sligo was not exhibiting the kinds of characteristics that one associates with dynamic “centres of scale”. As discussed above, between the census of 1991 and that of 2022 the population of Sligo grew by 14.7%. During the same period, five Mayo towns grew by between 70.7% (Castlebar) and 156.1% (Ballinrobe). Ballina, the Mayo town nearest to Sligo, grew by 29.3%, two times faster than Sligo. In the case of Tuam, this town has the potential to grow rapidly and shows how relatively small towns can sustain a wide range of enterprises and activities. With advances in manufacturing and communications technologies, “centres of scale” can actually be quite small.

This creates a potential risk that planning at the N&W level will bypass the dynamic Mayo and Sligo towns in favour of slightly larger towns in other N&W counties (e.g., Sligo, Letterkenny and Athlone). A better approach that took these specific Mayo and Sligo demographic features into account would be to examine how the populations of Mayo towns have grown and how they could be linked to form more effective joined-up urban centres both within Mayo and Sligo as well as between Mayo, Sligo and other N&W counties. With the exception of Galway city, excessive focus on individual slightly larger towns like Sligo, Letterkenny and Athlone, rather than focusing on how slightly smaller towns can be better connected, risks distorting regional planning in the N&W region.²²

Table 3.4: Largest towns in N&W region

COUNTY	LARGEST TOWN	POPULATION
Donegal	Letterkenny	22,549
Sligo	Sligo	20,608
Cavan	Cavan	11,741
Monaghan	Monaghan	7,894
Leitrim	Carrick on Shannon	4,743
Mayo	Castlebar	13,054
Roscommon	Athlone	22,869
Galway	Tuam ²³	9,647

Source: CSO Database

“With the exception of Galway city, excessive focus on individual slightly larger towns like Sligo, Letterkenny and Athlone, rather than focusing on how slightly smaller towns can be better connected, risks distorting regional planning in the N&W region.”

The RSES recognised the pivotal role that could be played by Ballina, drawing attention to its role as a rail freight hub and the fact that the Phase 2 and 3 WRC restoration (Athenry–Tuam–Claremorris) would link it directly south to Galway, Limerick, Cork and Waterford as well as to Dublin, as it is at present:

The town has rail connectivity to Dublin, as well as to the south should the Western Rail Corridor be realised. Ballina has the most significant rail freight activity outside of Dublin, providing a vital service to commercial/industry in the town and beyond and supports the transition to a low carbon region.

The proximity of Ireland West Airport Knock to Ballina benefits the town and significantly broadens the transport network capacity to an international catchment. (RSES Page 122)

22 For example, the towns of Castlebar and Westport are very close to each other and are now linked by a new road. They already have a rail link. Their combined population (as a kind of “twin” town) is 19,926, which is almost the same as the population of Sligo (20,608).

23 We exclude the city of Galway (population 85,910) and select Tuam as the largest town in County Galway.

The importance of Ballina and the other Mayo towns is further recognised in the RSES in its call for enhanced rail services (thereby supporting the transition to a low carbon region) to Dublin and commuter services between Ballina, Castlebar, Westport and Claremorris with connectivity to Galway and Limerick Metropolitan Cities and major international ports such as Shannon/Foynes, should the Western Rail Corridor be realised.²⁴

IRELAND WEST AIRPORT KNOCK

The RSES also draws attention to the strategic role that can be played by Ireland West Airport Knock (IWAK):

The presence of an airport in the region acts as a magnet to draw people and investment to the region, driving economic activity in the form of business and investment as well as tourism and travel. The Airport acts as an international gateway to the West of Ireland as well as the North, North West and Midlands areas. The Northern and Western Region is home to many world-leading multinationals, local companies with global success as well as yet untapped economic sectors. (RSES Page 139)

From the perspective of Ireland West Airport Knock, three of the goals of the Arup Report were crucial to the future growth and development of the airport.²⁵

- Enhance regional and rural accessibility
- Encourage sustainable mobility
- Foster economic activity by contributing to balanced economic growth between urban and regional areas through support of the efficient movement of goods and people to and from economic centres and international gateways.

Starting from a situation today where no Irish airport is served with a rail link, the Arup report noted that responses to public consultation carried out at the start of their work very strongly advocated airport connectivity to the rail system. The report's eventual recommendations were that Dublin airport be served by a new rail line and Shannon Airport be served by building a spur from Sixmilebridge or Cratloe. No rail connections to Cork Airport and IWAK were recommended. Since IWAK is a fast growing airport that serves the N&W region and that has an increasing number of international connections, it had been anticipated that some consideration would be given by Arup to establishing a rail link that could serve IWAK and link it to its hinterland.

The establishment of a rail link to service IWAK is completely dependent on the restoration of the final phase of the WRC. The link from Claremorris to Collooney/Sligo would service IWAK, which is located a seven minute shuttle trip from Charlestown Station.

The failure of Arup to recommend the restoration of the Claremorris-Collooney/Sligo rail link flies in the face of the stated goals of their report. For example, Sligo was designated as a regional growth centre in Project Ireland 2040 and in the Regional Spatial and Economic Strategy of the Northern & Western Regional Assembly. The failure to recommend restoring

24 RSES Page 123 (<https://www.nwra.ie/rses/>)

25 See Section 2 for a complete statement of the goals of the Arup Report.

the rail link south of Sligo to Mayo, onward to Galway, Limerick and further south to Cork and Waterford will leave Sligo cut off from its natural southern hinterland. The only rail link from Sligo will be the existing one to Dublin.

“The failure to recommend restoring the rail link south of Sligo to Mayo, onward to Galway, Limerick and further south to Cork and Waterford will leave Sligo cut off from its natural southern hinterland. The only rail link from Sligo will be the existing one to Dublin.”

IWAK is a crucial lynchpin in the renewal and strategic development of the N&W region of Ireland. It has helped to open up new and more equitable development possibilities for the island which partially offsets further intensive and congestive growth in the urban agglomerations of the East and SW coasts. The growth of passenger numbers passing through IWAK tells its own story: the modest numbers in the early years as the technical resources of the fledgling airport were gradually developed to the highest international standards; the rapid take-off during the 2000-2006 years of heady national growth; absorbing the consequences of the recession of 2007-2015; and the steady climb in numbers when national recovery belatedly took hold; and a strong post-COVID recovery of passenger numbers.

Figure 3.6: Ireland West Airport Knock



The success of IWAK can only be appreciated when one considers it in the context of the spatially distorted development of the island of Ireland. Setting aside the east coast Dublin-Belfast “corridor”, the rise of the five cities (Dublin, Waterford, Cork, Limerick and Galway) has threatened to “anchor” development south of a line drawn from Dublin to Galway.

However, advances in technology and communications have now made it efficient to operate enterprises at a smaller scale and in units that no longer need to be in one location. This opens up development opportunities for the N&W region that is serviced by IWAK, with its scattered small towns and low population density. But an essential requirement is that some very basic infrastructure and supportive facilities are provided in the region so that modern enterprises can operate at lower costs than in big cities and their workforce can enjoy a higher quality life-style.

“An essential requirement is that some very basic infrastructure and supportive facilities are provided in the region so that modern enterprises can operate at lower costs than in big cities and their workforce can enjoy a higher quality life-style.”

Road, rail and broadband links play their part. But in a world where globalisation is a dominant factor driving the economy of the island of Ireland, easy access to international markets for travel and freight will be essential. To future proof the role of IWAK, lands adjoining the airport have already been designated as a Strategic Development Zone (SDZ) when eventually the need to cater for enterprise growth and easier access to airfreight services will arise.

The restoration of the Claremorris-Sligo rail link is an essential part of the kind of infrastructure that would enhance intra and inter-regional accessibility that is a stated goal of the All-Ireland Strategic Rail Review. Here, the situation of IWAK is different from that of the other major Irish airport that was excluded from a rail link, i.e., Cork. Cork city has a population of 223,657 and is only 8km from its airport. IWAK, on the other hand, serves the large and extended N&W region and is not adjacent to any large metropolitan population agglomeration (Figure 3.5). Consequently, enhanced rail and road links within the N&W region are essential for connectivity and to the continued expansion of IWAK.

Figure 3.7: Annual IWAK Passenger Numbers for the Period 1998 to 2023²⁶

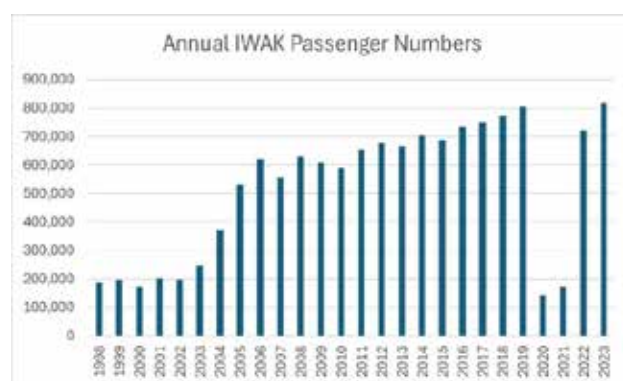


Figure 3.8: IWAK population catchment area



THE REGIONAL IMPORTANCE OF THE ATU FOR SLIGO

The Atlantic Technological University has nine campuses across the north-west region, spanning from north Donegal to west Co. Galway. Campuses are located in Letterkenny, Killybegs, Sligo (2), Castlebar, Mountbellew, Galway city (2) and Letterfrack with a portfolio of 600 distinct higher education programmes, meeting the needs of a diverse range of learners. Enrolments are balanced across the three main disciplines of Science, of Engineering and Design, and of Business, Humanities, Social Sciences and Tourism. With the recent incorporation of St Angela's College into the ATU there are some 23,000 students attending and 2,300 staff employed by the ATU across the region. Many of these students are employed in the local workforce; the ATU provides them with an opportunity to upskill and advance their careers through part-time learning. The ATU has ambitions to grow to some 25,000 students through the expansion of its suite of programmes and by further increasing the training and education of the local workforce. The ATU also aims to build strong research activities focussed on supporting regional businesses to grow and compete globally.

The two ATU campuses in Sligo have 9,000 registered students and 800 employees. The impact of this on the town of Sligo, with 19,500 residents, is significant in terms of income, demand on local services and on public and private traffic and transport infrastructure. Many students travel to the Sligo campuses on a daily basis from south Sligo, Mayo and Leitrim using both private and public transport (where available).

Fig 3.9: The Sligo ATU campus

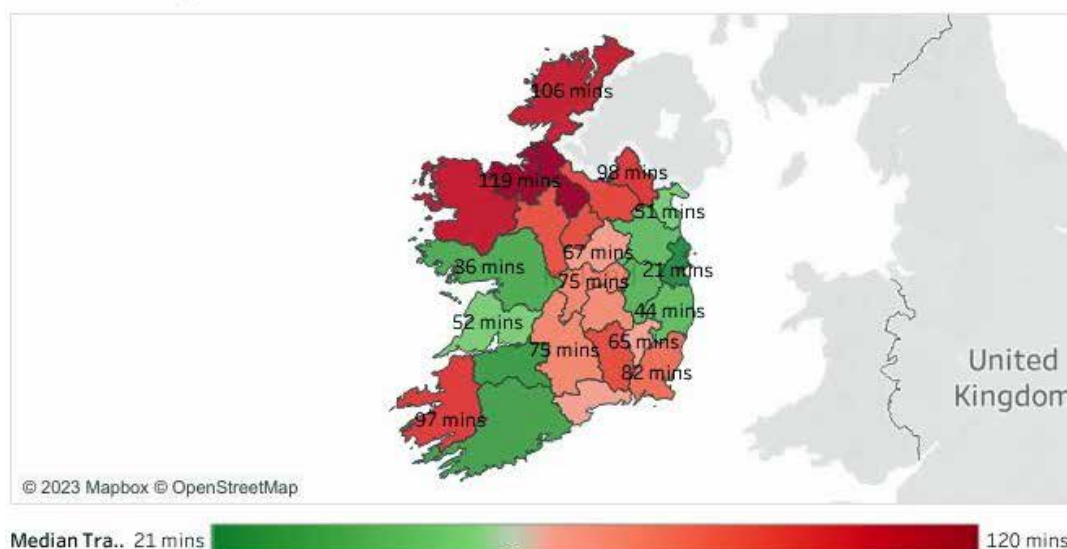


Sligo town is identified in Project Ireland 2040 and the N&WRA RSES as a Regional Development Centre. To achieve this national objective it is imperative that Sligo is better connected to its hinterland with strong connectivity to the national rail network. The new Technological Universities are also targeted as loci for promoting and supporting regional development. Unless the public rail links to and from Sligo are improved, it will be difficult to attract new industries to Sligo and to allow Sligo to develop as a real regional hub. Obviously, the better connected Sligo is to its hinterland, the more attractive it will be as a third level destination of choice for students from across the region. These students are both entrepreneurs and the workforce of the future and it is recognised internationally that a significant proportion of students take up (or retain) employment in the region where they have studied. In that way, the ATU itself provides a powerful conduit to bring more people to the region, many of whom will build their careers and families in the region.

Fig 3.10 Travel times by region to third level institutions. Students in the NW region are the least well served by public transport.

Median Travel Time from Home Address to Institute

Less than 60 mins | More than 60 mins



THE N&W RSES: CONCLUSION

The N&W RSES concludes that a priority core outcome to be delivered across the region shall include strengthening inter-regional connectivity, through the improvement of inter-urban road and rail connectivity, with a particular emphasis on improved connectivity between the largest urban centres and access to ports and airports, for the movement of both people and goods.²⁷ In relation to the future role to be played by rail links, the RSES notes the following:

Many gaps exist within the region's rail network and the National Development Plan 2018-2027 confirms that the Western Rail Corridor Phase 2 from Athenry to Tuam and phase 3 to Claremorris could increase passenger, tourist and commercial use.

The Western Rail Corridor is of strategic importance as it represents a piece of key enabling and sustainable transport infrastructure for the region that presents an opportunity to effect 'transformational change' in the realisation of the Atlantic Economic Corridor. It can link the economies of three major centres in this part of the region (Limerick, Galway and Sligo) and IWAK SDZ. It also offers a sustainable alternative to car travel and advancing Ireland's sustainable development goals.

These findings are then stated in terms of four Regional Policy Objectives (RPOs)²⁸. The need to re-establish a north-south rail link joining Sligo directly to Limerick and further south is supported strongly in the N&W RSES. With this link in place, it would gradually become as natural to do business on the north-south axis of the AEC as it currently is to look east to Dublin for everything. This would provide a key mechanism for small western towns to strengthen and grow. The northern and western region could grow through better linkage of its towns rather than through plumping for a small number of regional growth centres (Letterkenny, Sligo and Athlone) that are never realistically going to rival Galway city in size.

27 RSES page 214 (<https://www.nwra.ie/rses/>)

28 RSES Pages 222-223 (<https://www.nwra.ie/rses/>)

[3.4] TOWARDS A NEW REGIONAL DEVELOPMENT STRATEGY

3.4.1 THE DEVELOPMENT CHALLENGE FACED BY THE N&W REGION IS ACKNOWLEDGED BY POLICY MAKERS

The need for a new and more focused regional development strategy for the N&W region has already been clearly identified and acknowledged by policy makers. Of course, there are narrower financial criteria that must also be examined. These criteria are set out in the document *Common Appraisal Framework for Transport Projects and Programmes* published by the Department of Public Expenditure. The capital costs of an infrastructure investment have to be evaluated fully, as have the likely future utilization and revenue-generating potential of the investment. However, if the wider development rationale is down played and revenue-generation is projected very conservatively, then the resulting benefit-cost ratio (BCR) of the infrastructure project is likely to be understated. On the other hand, if a wider rationale is taken into account with unchanged capital costs, this will boost likely revenue projections and will increase the project BCR.

This aspect is emphasised in the *Common Appraisal Framework*, where it is stated that:

“An economic appraisal assesses the project from the point of view of its impact on the economy as a whole. It is important to note that such an appraisal should not be confined to purely commercial or monetizable impacts of the project, but rather should look at its broader economic, social and environmental impacts”.

The justification provided by Iarnród Éireann in the brief given to consultants EY in their examination of the Athenry-Claremorris restoration is equally valid in the context of the Claremorris to Collooney section:

“The railway between Athenry and Claremorris represents the missing link in a much longer existing transport corridor that connects Mayo by rail to Cork and Waterford via Athenry, Ennis and Limerick. The restoration of this currently unused state asset can play a significant part in the development of the Atlantic Economic Corridor (AEC) in terms of connectivity and regional development. The AEC recognises a changing economy in Ireland where the sustainable development of all natural and infrastructural resources is the basis of economic development and the key comparative advantage when attracting FDI or other investment. An integrated and modern railway that provides a freight, inter-regional and commuter backbone may have a role to play in regional development”.

The Iarnród Éireann Consulting Brief further emphasised the role that a restored WRC could play in the AEC:

The Athenry –Claremorris link will integrate the WRC into the national Intercity rail network and the uplift in demand as a result of this wider rail integration shall also be quantified. The scheme could link many of the smaller urban centres by rail e.g. Gort, Tuam, and Claremorris. The review must quantify agglomeration benefits likely to accrue to these smaller urban centres as a result of being rail connected.”

With respect to freight, the Consulting Brief required an examination of how freight originating in as well as destined for the west of Ireland could be handled more efficiently by the availability of a direct north-south rail link:

As part of the demand modelling and projections task the Consultant shall also quantify the direct and indirect cost benefits of moving freight directly to and from ports other than via the greater Dublin area, and should quantify the value of diverting south-bound freight from the Claremorris-Athlone-Kildare corridor

The Consulting Brief specified an additional concept of “agglomeration-type benefits” that are relevant to regional development in the AEC as follows:

Agglomeration benefits (...) arise because firms derive productivity benefits from being close to one another and from being located in large labour markets. If transport brings firms closer to their workforce this may generate an increase in labour productivity above and beyond that which would be expected from the direct user benefits alone.

The challenge faced in carrying out an appraisal of a large infrastructure investment like the WRC is the requirement to spell out what the wider context, such as elaborated by Iarnród Éireann in their Consulting Brief, might actually look like. However, here we face a serious barrier since there is a dearth of detailed regional economic and business research (e.g., treatment of the aggregate economies of Galway, Mayo and Sligo) and at the more detailed county level (e.g., Mayo separately from the rest of the N&W region). Both the EY and ARUP reports appear to have paid little regard for the above aspects of their brief.

3.4.2 HOW REGIONAL ECONOMIES GROW

When we examine how the Irish national economy and regional economies have developed over time and over space, there are three important features:

1. Economic activity tends not to be spread uniformly over space or over sectors, but tends to cluster or concentrate.
2. Such clustering is clear evidence of some kind of increasing returns (i.e. doubling inputs more than doubles outputs) and this should be exploited by policy makers.
3. ‘Growth centres’ in specific locations (usually, but not always, around cities or towns of above a certain size) will tend to interact with each other over space to form corridors, or elongated growth centres.

The historical context in which this clustering of towns and cities failed to occur in the west of Ireland in the 18th and 19th centuries is well known.²⁹ After independence in 1922, Irish governments were reluctant to implement any excessively narrowly focused “growth centre”

29

For the historical reasons for western underdevelopment, see “To Hell or to Connaught: The origins of Ireland’s east-west economic divide”, lecture to Westport Civic Trust, October 17th, 2019.

policies, opting essentially for a pragmatic policy of “light touch”, laissez faire dispersal.³⁰ Their approach tried to reconcile the often conflicting aims of the claimed economic efficiency of growth poles and the wider social equity of dispersal. But where policy makers stood back, market forces stepped in. Dublin’s explosive growth was unchecked; Cork, Limerick, Galway and Waterford continued to grow, but more slowly; the rest of the country struggled to develop against uneven odds. Development strategy became focused on the “five cities”, but mainly Dublin. Less thought was given to the strategic needs of regions that were remote from these cities, in particular the Northern and Western Region that had suffered from neglect since the 18th century.³¹

The kernel of development models designed for large urban agglomerations like Dublin, Cork and Belfast is that with everyone essentially located in the one small space, communication and connectivity problems either do not arise, or are easy to handle. This is usually contrasted with the challenges facing development in (say) the central-AEC region and specifically in a county like Mayo, where population density is low, small towns are geographically scattered, and communication channels do not always work seamlessly or efficiently. However, such assumptions have begun to be challenged as cities experience a toxic combination of high house prices, congestion, pollution and onerous commuting times and when improvements in communication technologies produce, if not the “death of distance”, then at least a rapid diminution of the costs of distance.³²

“Development strategy became focused on the “five cities”, but mainly Dublin. Less thought was given to the strategic needs of regions that were remote from these cities, in particular the Northern and Western Region that had suffered from neglect since the 18th century.”

The most important enabler of development strategy in Mayo and Sligo concerns “connectivity”, within which are included roads, rail, airports, sea ports and digital connectivity. The next concerns “facilities”, by which mean the advance preparation of a welcoming environment for new enterprises. The third concerns “skills and capabilities”, to ensure that enterprises can attract a work force appropriate for their activities. Although the three kinds of enablers are usually treated separately, they must work in a fully integrated way if development opportunities are to be realised.

In the context of towns that are better linked to each other, there is greater potential to encourage business clustering to enable complementary businesses to start up and progress to making the move from non-traded to traded activities by facilitating cooperation, specialisation, marketing, distribution and sales. If this kind of evolution is to have any chance of happening and a development model based on clusters of small towns is to be established, the connectivity issues discussed above will need to be placed at the centre of the regional development strategy.

30 See Buchanan & Partners, *Regional Studies in Ireland*, Dublin: An Foras Forbartha, 1968

31 The Northern and Western NUTS 2 region consists of counties Donegal, Sligo, Leitrim, Cavan, Monaghan, Roscommon, Mayo and Galway.

32 See <https://www.brookings.edu/research/countering-the-geography-of-discontent-strategies-for-left-behind-places/>

[3.5] CONCLUSION

The analysis of spatial demographics and the structure of the business enterprise sector points to implications for the need to restore the WRC all the way from Limerick to Sligo. The link from Limerick to Galway is already in operation and has proved to be a great success in terms of the growth of passenger numbers since it was reopened in 2010 (see Section 5 for further details). The restoration of the section from Galway/Athenry to Claremorris has been approved in principle by government. The justification for restoration of the final section from Claremorris to Collooney/Sligo is the main focus of the rest of this report. Section 6 describes the existing state of the currently unused Claremorris-Collooney rail line; Section 7 presents an initial effort at the planning and costing of a restored line. Section 8 discusses the potential use benefits of an operational rail service on the fully restored WRC.

The real challenge at a county level is to move beyond simply maintaining the status quo, replacing declining and exiting enterprises with new substitutes. Rather, it is to aim at greatly expanding the size of the enterprise sector in a development model that uniquely suits the spatial and economic characteristics of Mayo and the AEC region in which it is embedded.

“The real challenge at a county level is to move beyond simply maintaining the status quo, replacing declining and exiting enterprises with new substitutes. Rather, it is to aim at greatly expanding the size of the enterprise sector in a development model that uniquely suits the spatial and economic characteristics of Mayo and the AEC region in which it is embedded.”

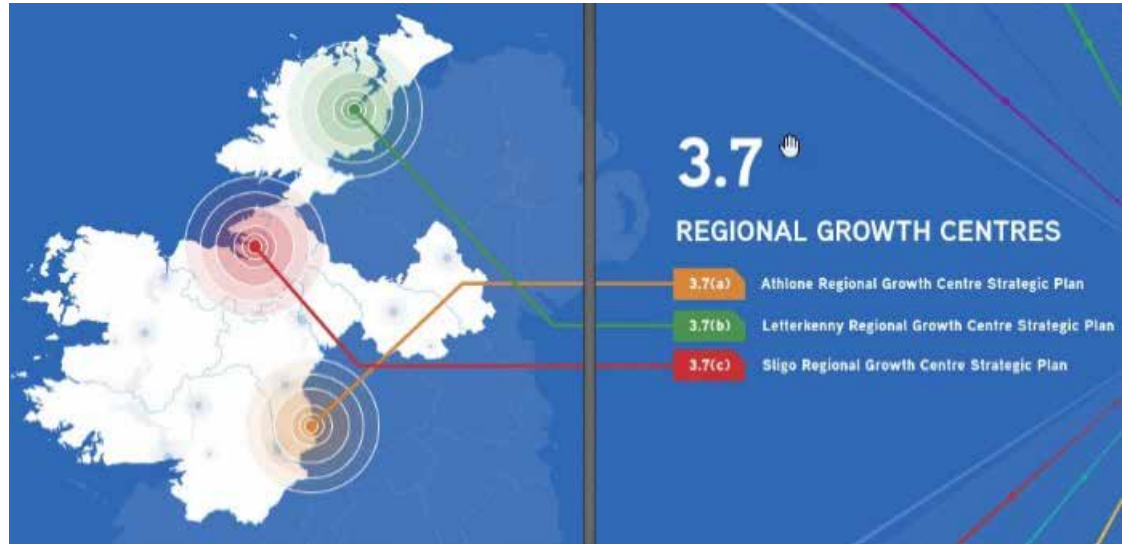
Access and connectivity are vital in a region where towns are relatively small and are dispersed over a large geographical area. If accelerated development is to occur, it is essential to connect groups of adjacent towns in a way that encourages them to become more interdependent, giving more efficient access for people, products and services to internal and external markets. The focus needs to be on the continual upgrading of road, rail, airport and digital infrastructure. But it also needs to embrace the more efficient and effective organisation of the public transport system, both road and rail. These kinds of improvements will require imaginative and flexible transport policies and are likely to be relatively low cost when compared to the construction costs of motorways. The best way to encourage the evolution of a more dynamic enterprise sector in the central-AEC region would be to link its smaller towns in such a way that the groupings of towns take on some of the functional characteristics of larger “virtual” towns.³³

This kind of dynamic and dispersed thinking needs to replace the static and concentrated approach taken in the official planning documents. The approach that emerges from the N&WRA RSES, with its excessively heavy focus on Letterkenny, Sligo and Athlone, is probably motivated by “five city” thinking. In other words, focus on groupings of smaller towns is regarded as risky and problematic. So pick the three largest towns (Letterkenny, Sligo and Athlone) and designate these as growth centres (Figure 3.8).

33

Treating Castlebar and Westport as a “twin” town gives it an effective population about equal to that of Sligo (19,926 vs. 20,608 in 2022). Furthermore, the population growth rate between 1991 and 2022 for Sligo, Castlebar and Westport were, respectively, 14.7%, 70.7% and 86.3%. This strongly suggests that the Castlebar-Westport twin-town complex is a dynamic growth centre and has the potential, together with its rail and air links, to act as a wider population and enterprise “attractor” for the whole central region of Mayo.

Figure 3.11: N&W Regional growth Centres



The case for restoration of the north-south Western Rail Corridor from Athenry to Claremorris has generally been accepted but the case for extending it from Claremorris to Collooney/Sligo has still to be made and accepted. However, the exclusion of a rail link connecting Mayo to Sligo would make it difficult for a genuine growth centre to emerge in Sligo town.

Concerning digital connectivity, research showed that adequate broadband facilities were available in most of Mayo towns. Connection speeds varied from an exceptional 1GB in towns like Claremorris and Kiltimagh to about 20MB in small towns like Louisburgh. Outside the main urban areas, coverage was patchy or was not accessible at reasonable cost.

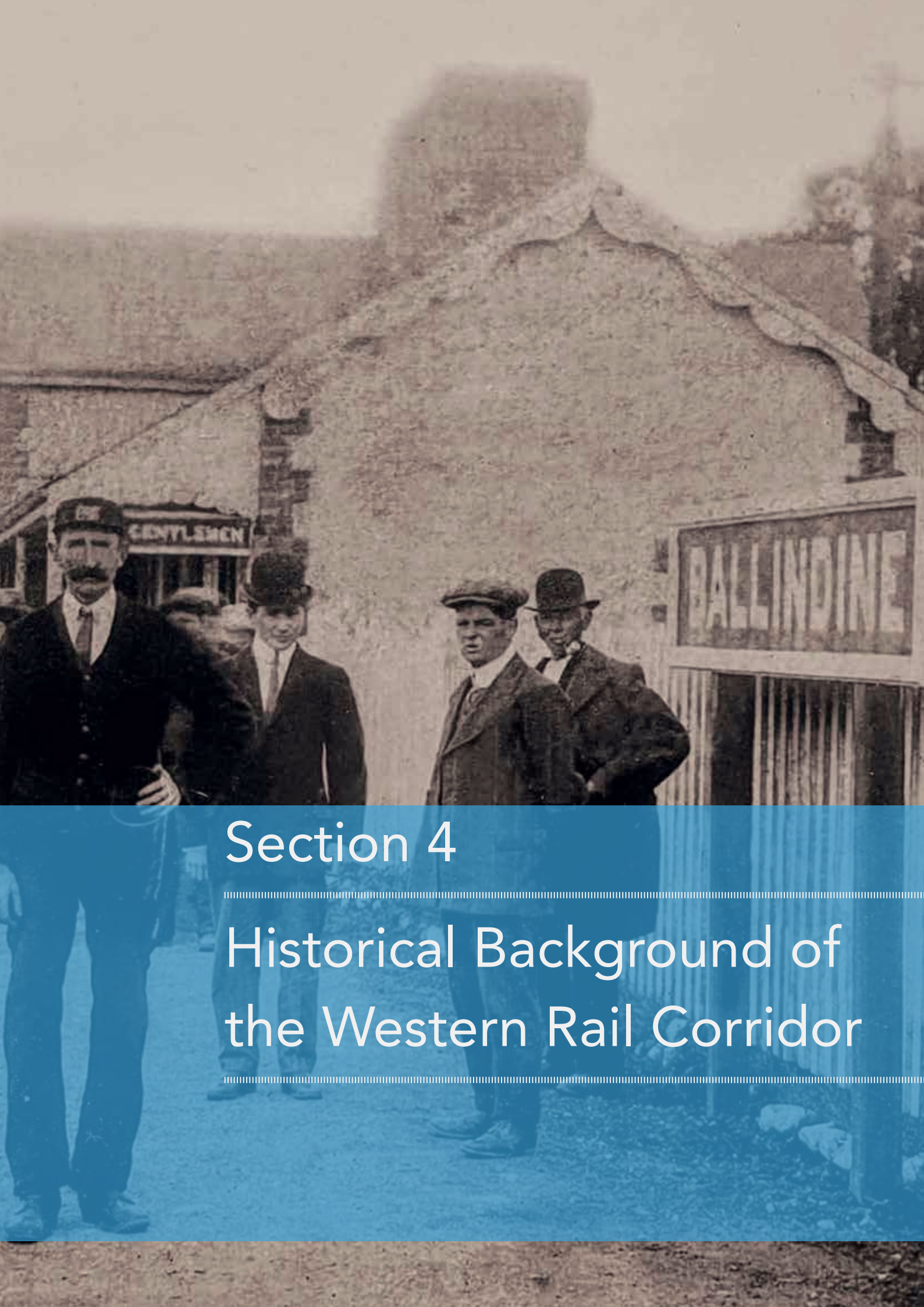
The “connectivity” issues that we have listed fall under the general heading of physical infrastructure. Other infrastructural needs also arise, associated with aspects such as the capacity of the electricity grid and the availability of water resources. These too can present barriers to the growth of enterprises and the ability of regional towns to expand.

If the centralised process of policy formulation in Ireland were responsive to regional needs, and if effective mechanisms existed for those identified needs to find their way into regional policy formation at the national level, the situation would not be so serious. But the manner in which the three Regional Assemblies set up under Project Ireland 2040 are transmitting national policy to the regions (as set out in the draft Regional Spatial and Economic Strategies) suggests that the heterogeneity of counties and their unique potential for growth under new regional thinking are being neglected.



4

PASSENGERS AND STAFF AT BALLINDINE STATION NEAR CLAREMORRIS C.1900 (CLAREMORRIS HISTORICAL SOCIETY)



Section 4

Historical Background of the Western Rail Corridor

[4] HISTORICAL BACKGROUND OF THE WESTERN RAIL CORRIDOR



[4.1] THE WESTERN RAIL CORRIDOR

In recent decades, the 240km of rail track running northwards from Limerick to Sligo has come to be known as “The Western Rail Corridor” or WRC. In the wider region of the Atlantic Economic Corridor (AEC), the WRC is part of what is designated as the Atlantic Rail Corridor (ARC), running from Rosslare and Waterford in the south-east to Sligo in the north-west.¹

As railways started to emerge throughout the world in the first half of the 19th century the matter of a common gauge became increasingly urgent as opportunities for their inter-connectivity grew. By 1850 the gauge question on the island of Ireland (i.e., the distance between the rails) had been settled at 5ft 3in. and the roots of the national railway network had been laid down. The next fifty years saw a steady expansion of railways into most parts of Ireland. By 1880 the national network had probably reached the greatest extent achievable by conventional methods of commercial railway promotion. This left many parts of the country, especially in the less advantaged south and west, without the benefit of access to a railway. The final major phase of railway expansion, in the last two decades of the nineteenth century, was therefore effected by deliberate changes in government policy and the awarding of grant aid.²

Unlike the MGWR Dublin to Sligo or SL&NCR Sligo to Enniskillen lines, which were built with the intent of generating operating profits and providing dividends to their shareholders, the origins of the line from Mayo (Claremorris Junction) to Sligo (Collooney Junction) were rooted in political machinations and a tenacious campaign by local representatives and clergy to counteract the prevailing destitution and desperation in their area.

Chief Secretary for Ireland, Arthur Balfour, was an implacable opponent of Home Rule and sought to “kill home rule with kindness” by securing cabinet approval to spend £1.2 million in Ireland on twelve light railways and other public works projects. The Light Railway (Ireland) Act 1889 was passed to provide for a situation where it was desirable to construct a railway to develop an area, but due to the circumstances of the area, State aid would be required for construction. A Railway Order was passed in August 1892 under the terms of this Act, authorising construction of the 46.25 mile line from Claremorris to Collooney.

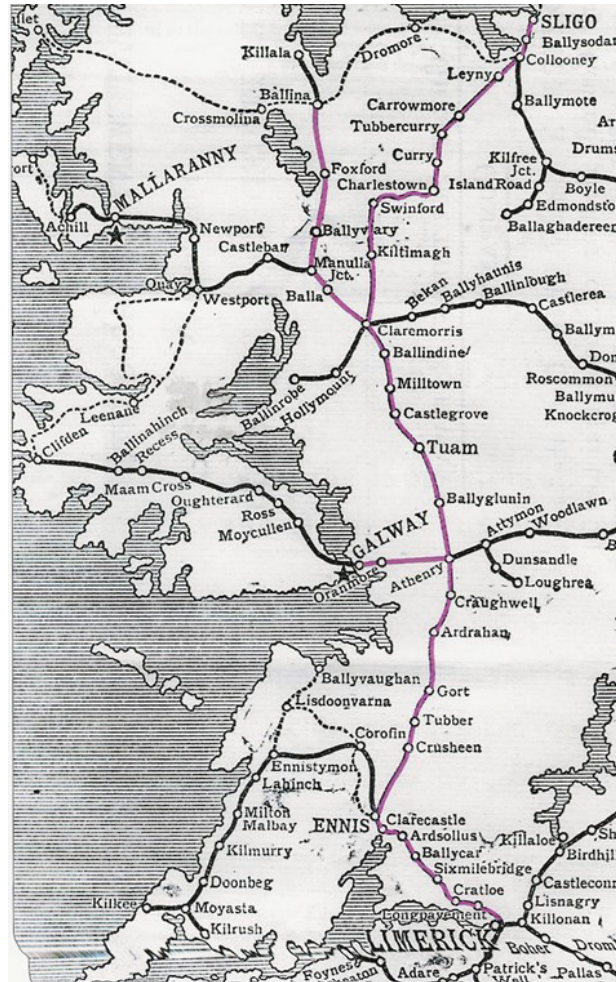
The line from Limerick northwards to Sligo originally operated as part of the Waterford, Limerick & Western Railway (WL&WR)³ and was built in a series of distinct sections over a period of about 40 years by several different private railway companies.

1 The Athenry-Claremorris Section is addressed in detail in *The Atlantic Railway Corridor, The Galway -Mayo Rail Link, An Appraisal* by Dr John Bradley 2021, published by West on Track.

2 Tom Ferris, *Irish Railways - A New History*, Gill & Macmillan, 2008.

3 Ernie Shepherd, *Waterford Limerick & Western Railway*, Ian Allen Publishing, 2006.

Figure 4.1: Map of the Limerick – Sligo corridor from the 1901 timetable published by the Waterford, Limerick and Western Railway. (Barry Carse Collection)



Ennis was reached in 1859, Athenry in 1869, while Tuam had been reached from the Midland route at Athenry in 1860, and extended to Claremorris in 1894. The final link in what became the Western Rail Corridor was the forty six and a quarter mile extension from Claremorris to Collooney, via Kiltimagh, Swinford, Charlestown, Curry, Tubbercurry, Carrowmore, and Leyney. This section was constructed by the W&LR and Collooney was reached in 1895 when the line joined the MGWR line that connected Dublin to Sligo. From January 1st, 1896, the company altered its title to the Waterford Limerick & Western Railway, reflecting its expansion on becoming the fourth largest railway in the country. In 1901 the WL&WR was amalgamated with the GS&WR.

Figure 4.2: A railway work crew pictured at a level crossing near Ballindine in the 1890s (Claremorris Historical Society)



The Western Rail Corridor thus became a natural continuum of one axis of the GS&WR network which stretched from the port of Rosslare through Waterford, Tipperary, Limerick, Clare, Galway and Mayo to Sligo. Amalgamation of the entire network into the national Great Southern Railways (GSR) occurred in the year 1925. From 1925 until 1945 GSR owned and operated all railways that lay wholly within the then Irish Free State.

Figure 4.3: Passengers and staff at Ballindine station c.1900 just six years after the Tuam-Claremorris railway opened. (Claremorris Historical Society)



When Córas Iompair Éireann (CIÉ) was formed as a private company by the Transport Act 1944 and incorporated the GSR and the Dublin United Transport Company, it essentially became a monopoly transport operator. The Transport Act 1950 amalgamated CIÉ and the Grand Canal Company and formally nationalised CIÉ, changing its structure from that of a private limited company to a corporation under a board appointed by the Minister for Transport. This brought the Western Rail Corridor directly under state control.

[4.2] CLAREMORRIS TO COLLOONEY

Although Sligo was the seventh largest town in Ireland in the early nineteenth century, it was not served by rail until 1862, by which time it had declined to fifteenth in size. On December 3rd 1862, the Midland Great Western Railway of Ireland opened a 58-mile extension to the town from the Longford terminus of its Mullingar - Longford branch. With the exception of Wexford, the fourteen larger towns, and many smaller ones, received railway communication before Sligo - in many cases considerably earlier than 1862. The belated arrival of the railway at the town was in part because of its isolation between the main lines of traffic from Dublin to the west (Galway) and northwest (Enniskillen and Derry).⁴ A railway connection to Sligo from the south would take nearly three decades to follow.

A connection linking County Sligo to Enniskillen, Belfast, Bundoran, Derry and the extensive Great Northern Railway network was established in 1882 when the Sligo Leitrim and Northern Counties Railway opened from Enniskillen through Manorhamilton to Collooney (SL&NCR).⁵

The decision to extend the Limerick to Mayo railway northwards to Sligo was taken within months following the establishment of the Congested District Boards in 1891. In the 1890s the Great Famine and its horrific consequences were still recent memories. A bitter land war had produced an uneasy stalemate with only modest reforms won by the Land League. But to people like Quaker philanthropist James Tuke, the isolation and deprivation of the western seaboard was a historical legacy that cried out to be addressed with practical policies.

Under the influence of Tuke and Horace Plunkett, Arthur Balfour (then Chief Secretary for Ireland) established an organisation that sought to be nonpolitical – that is, independent of Dublin Castle and of Westminster, with control over its own budget – in an era when that was well-nigh impossible. An account of that organisation's thirty two years of activity is available in 'The Congested Districts Board of Ireland, 1891-1923', by Dr Ciara Breathnach.

The historical isolation of the CDB region from the rest of the island, stretching from Donegal down to Kerry, was quite extraordinary. An example of isolation was the absence of good transport infrastructure and the limitations of the Irish rail network in the west. While it cost 70 shillings to send a ton of eggs from Cavan to London, it cost only 20 shillings from Canada to London. The CDB carefully identified where barriers to markets and development existed and then designed practical schemes to address them. Examples included improving the quality of egg production and marketing, assisting fishermen to acquire larger boats that could work safely further offshore than currachs, and, significantly, the extension of the railway network.

4 G.R. Mahon *The Railway Magazine* May 1963.

5 The line closed on the 1st October 1957.

On the 1st of April 1890, surveyors commenced marking out the route of the Claremorris to Collooney railway with pegs. This followed years of endless discussions, plans and meetings, as lobby groups and deputations sought to have a railway built through the Swinford and Tubbercurry Union which at that time had a combined population of 80,000 people. The most tenacious of those advocates were two Parish Priests, Fr. Denis O'Hara, P.P. Kiltimagh and Canon Staunton, P.P., Tubbercurry, while Mr. A. J. Staunton, Chairman of the Board of Guardians of Swinford and Tubbercurry Unions, pressed the case for Swinford and Mark Henry did likewise for Charlestown. The promoters were the 'Athenry and Tuam Extension to Claremorris Light Railway Company' (A&TE CLR).

The Midland Great Western Railway (MGWR) which owned and operated the railway from Dublin to Sligo via Ballymote, and to Ballina via Claremorris and Foxford, strongly opposed the project, arguing that Kiltimagh, Swinford, Charlestown and Tubbercurry could be better served by these routes and a separate link which they proposed between Foxford and Ballaghaderreen. The MGWR opposition was overcome and work on the new railway from Claremorris began on New Year's Day 1891, with sod turning ceremonies taking place at Kiltimagh by Fr. O'Hara, Swinford by Mr. A. J. Staunton, and at Tubbercurry by Canon Staunton.

Contracts were awarded to Mr. William Murphy MP for the 17.25 mile Claremorris to Swinford section and to Mr. Robert Worthington for the 29 mile Swinford to Collooney section. The proposed 46.25 mile long (75km) route joined the MGWR line at Collooney, just 6 miles (10km) from Sligo. The total value of the gross contracts came to £240,000.

Figure 4.4: A local construction gang and horses at Tubbercurry 1895 (Flannery Family Archive)



Land for the railway was acquired under the Light Railways Act 1889 which had been passed at Westminster to build it, with an initial down payment and arbitration to follow. Three other railways were built in County Mayo under the provisions of the 1889 Act, Westport to Achill, Claremorris to Ballinrobe and Ballina to Killala. The project promised hundreds of jobs at a time when thousands in the region were in need of gainful employment.

By the end of January 1891, 1,400 men were at work on cuttings, embankments, drainage, fencing etc. A Baronial Guarantee⁶ of £120,000 was provided by Mayo Grand Jury (£65,000)

⁶ Baronial Guarantee: Under the provisions of the Tramways and Public Companies (Ireland) Act, 1883, it became lawful for the promoters of any tramway, being a public company, to make application to the grand jury of any county to propose that a barony or baronies in the county would guarantee the payment of dividends, not exceeding five per cent of that portion of the share capital of the undertaking deemed to be paid-up capital as defined in the Act.

and Sligo Grand Jury (£55,000). These were the forerunners of Mayo and Sligo County Councils. Unfortunately, there were numerous suspensions of work and rather than being completed in two years, the line took almost five years to build. Parliament intervened to remove control from the original promoters, the A&TE CLR, and give it to the Waterford and Limerick Railway (W&LR). Work on the Swinford to Collooney section, which had been commenced by Mr Worthington, was eventually completed by Fisher and Le-Fanu.

The Claremorris to Collooney section finally opened in October 1895 following agreement between the W&LR and the MGWR for joint access to Claremorris Station and running powers over the Collooney – Sligo section. Stations served by the new line were Kiltimagh, Swinford, Charlestown, Curry, Tubbercurry, Carrowmore, Leyny, and Collooney.

The most significant engineering feature on the line was the imposing double arch stone bridge over the Ballina Road at Swinford, built by what was reported at the time as ‘an army of stone masons’. The bridge still stands today, an enduring testament to their skills. The completed line had 48 level crossings and the final cost came to £294,000. The line was officially 46 and a quarter miles long.

The new railway created secure, permanent employment, both skilled and unskilled, for drivers, firemen, guards, permanent way workers or ‘milesmen’, gatekeepers, signalmen, clerks, managers, porters etc., bringing new families to the area with the expertise to operate the line, alongside locals who could be trained. The economic situation of the towns served by the railway changed dramatically and communications were vastly improved for people and goods, whether migratory labourers to England and Scotland, cattle to Belfast or butter to Dublin. The new line also afforded greater access to the region for tourists, pilgrims and sports enthusiasts.

“The new railway created secure, permanent employment, both skilled and unskilled, for drivers, firemen, guards, permanent way workers or ‘milesmen’, gatekeepers, signalmen, clerks, managers, porters etc., bringing new families to the area with the expertise to operate the line, alongside locals who could be trained. The economic situation of the towns served by the railway changed dramatically and communications were vastly improved for people and goods.”

Stone quarries and gravel pits opened and used the railway. It became easier to transport building materials into the area such as facilitated the construction of a new technical school in Kiltimagh in 1894, and a new coaching service was introduced between Swinford and Foxford by the MGWR. At its peak, at the turn of the century, there were three passenger trains in each direction on weekdays.

Throughout most of the line’s operational life train services between Sligo and Claremorris were consistent and comprised a weekday return passenger service from Sligo to Limerick, serving Mayo connections at Claremorris and Galway connections at Athenry. There were never scheduled services on Sundays, but occasional special trains were operated for Knock Shrine, excursions to Strandhill or football matches. Weekday goods trains operated between Sligo and Limerick usually crossing at Tuam, Claremorris or Swinford and regular special goods trains carrying livestock for export through Sligo or Belfast ran until shortly before the line closed. Until the 1940s train crews were generally drawn from Sligo and Tuam depots after which southerly crews came mainly from Claremorris depot.

Figure 4.5: From Collooney Junction, Waterford, Limerick and Western Railway trains continued their journey to Sligo on the MGWR line. This photograph was taken at Ballysodare on 29th June 1938. (H.C. Casserley)



Figure 4.6: New cars from Cork and a loose-coupled goods train pass Claremorris in the early 1940s destined for Sligo. (National Library)



[4.3] THE WRC AND THE CIÉ ERA

In November 1958 the first of a series of Programmes for Economic Expansion came before the Houses of the Oireachtas. Under the heading Public Transport (Paragraph 113) it conveyed an ominous directive from the government:

‘Government policy on public transport has been stated in detail on several occasions in the recent past and is contained particularly in the Great Northern Railway Act, 1958 and the Transport Act, 1958. Under these Acts C.I.E. have become the sole public transport authority in the State with the exception of two small companies operating in County Donegal. C.I.E. are charged with providing reasonable, efficient and economical transport services, the encouragement of national economic development and the maintenance of reasonable conditions of employment for its workers. The Board of C.I.E. are required so to conduct the undertaking as to eliminate losses by 31 March, 1964.’

In a subsequent address to the Institute of Public Administration at the Custom House, Dublin on 27th June 1962, Dr C. S. Andrews Chairman of C.I.E. presented a paper entitled The Future of CIE in which he stated:

‘As to subsidies: it has been made abundantly clear to us by the Minister, both in private and in public, that we cannot look forward to subsidies after the time laid down in the 1958 Act i.e. the 31st March 1964. Apart for the fact that we must naturally accept this intimation without question, it happens to correspond with my own view that blanket subsidies are thoroughly undesirable. To have to accept a blanket subsidy puts an organisation in an extremely weak position psychologically, morally and organisationally. From the point of view of management there can be no satisfaction in working in an organisation where one has to look forward to a subsidy in perpetuo.’⁷

Clearly conflating the concepts of ‘loss’ and ‘subsidy’ Dr Andrews concluded:

‘If we are to achieve a position where we run CIE without a subsidy there are certain self-evident things that must be done and done quickly... it would appear that the areas served by the following uneconomic lines should be served by road.’

Within months, 23 railway routes, linking towns and communities throughout Ireland, were to lose their rail services.

However, annual subsidies for the railways have continued to the present day. For example, the Annual Report of Iarnród Éireann 2022 states:

The amount of Public Service Obligation (PSO) subvention received in 2022 was €225.6”. Iarnród Éireann Annual Report 2022.

As CIÉ adopted a policy of focussing mainly on routes radiating from Dublin, a programme of closures of branch lines and non-radial routes was rolled out in the early 1960s. The Rosslare to Sligo railway became a prime target for run-down of services and ultimate closure. Outright closure was considered politically problematic, so instead closure by stealth was preferred. The strategy for the incremental closure of the Limerick to Sligo railway was thus conceived.

“Outright closure was considered politically problematic, so instead closure by stealth was preferred. The systematic closure of the Limerick to Sligo railway was conceived.”

In the CIÉ programme of line closures of 1963 there was no reference to closing the Sligo-Limerick railway. Rather, there was a dramatic reduction of scheduled passenger services which inevitably led to reduced demand, reduced income, reduced expenditure on maintenance and finally, provided justification for line closure. All scheduled Galway-Limerick passenger and goods trains ceased as did scheduled Sligo-Limerick passenger trains, scheduled Tuam-Galway passenger trains, and the commuter train service between Tuam and Galway.⁸

While scheduled passenger trains on the Sligo-Limerick route ceased on 15th June 1963, a single weekday passenger service between Ballina and Limerick together with a weekday goods train service, and occasional special passenger trains, continued until the complete cessation of passenger services between Mayo and Limerick in April 1976. Finally, in November 1975, the Mayo to Sligo (Claremorris to Collooney) section was completely closed.

Responding to a question from Jim Fahy on the main RTE evening news a senior CIÉ management representative suggested that the Claremorris to Sligo railway might one day re-open 'if gold is found in the Ox Mountains'.

The last passenger train on the line was a Knock Pilgrimage Special Train from Claremorris to Sligo on the evening of Sunday 17th August 1975. The Driver was Hugh Dawson of Claremorris Depot and the locomotive was A20r. The last freight trains, with Claremorris and Sligo crews, ran from Claremorris and Sligo respectively, crossing in Swinford on Friday 31st October 1975. All services were officially withdrawn from 3rd November 1975.

Figure 4.7: The last scheduled trains between Claremorris and Collooney with locomotives 018 and B145 crossed at Swinford on Friday 31st October 1975 with drivers Jimmy O'Grady, Sligo (L) and Harold O'Keefe Claremorris (R).



South of Claremorris, a further series of negative actions finally succeeded in destroying the remaining passenger demand. These included having the single weekday train service stop at stations such as Ballyglunin and Craughwell in one direction only. The consequence was that, for example, passengers could depart for Galway from Ballyglunin but the service did not stop at Ballyglunin on the return journey. Not surprisingly, numbers boarding at these stations plummeted and the company was then able to justify their closure. The *coup de grace* was then delivered in 1973 when the single daily return service from Ballina to Limerick changed to an afternoon service in both directions meeting half way in Athenry, thus removing the prospect of a return journey on the same day for most passengers.

8 This service departed Tuam at 07.55, serving Ballyglunin at 8.05, Athenry at 8.19 and Oranmore at 8.34, arriving in Galway at 8.45. The return service left Galway at 18.25.

SLIGO TOWN AND PORT THROUGH HISTORY

Population movements in Sligo county and town are typical of the pre- and post-Famine patterns of the west of Ireland. Slow growth until the late 18th century; very rapid growth after that, mainly rural, culminating to a peak just before the Famine hit in 1845; a catastrophic decline in rural population thereafter, with static or modest urban growth; resumed, if weak, urban growth in recent years (Figures S1 and S2).

Fig. S1: Population of Sligo county and town 1600-2011



Fig. S2: Population of Sligo town 1600-2011



In the pre-Famine era Sligo port was busier than Galway port, exporting and importing goods to service its hinterland as shown in the Railways Commissioners maps of 1838. For a time it looked as if Sligo would develop as the major port on the west coast, but it never reached its potential and Galway and Limerick grew to dominate it by the 20th century. Post-Famine economic collapse and competition from the new railway after 1862 undermined the profitability of Sligo port when it became cheaper to ship from Dublin.

Recently Sligo town has enjoyed resumed population growth, but this has been slow (Figure S6). Location is one explanatory factor since partition in 1922 separated Sligo from its natural hinterland in Northern Ireland. Transport links that existed, such as the then operational WRC, were not sufficient to overcome the nationwide negative population dynamic that lasted until the 1960s. Soon after that the WRC was closed and Sligo's only rail link was eastwards to Dublin. As Sligo emerges as a dynamic manufacturing, traded service and tourism centre in the N&W region, the restoration of the WRC has become an urgent priority.



Fig. S3 Aerial view of Sligo & Harbour today

Figure 4.8: In March 1975 sections of rail in reasonably good condition were lifted between Kiltimagh and Swinford and exchanged with worn out rails from elsewhere. Closure would follow nine months later (Barry Carse).



In 1976 CIÉ announced that all scheduled passenger services between Claremorris and Limerick would cease from April 4th, leaving only a single daily passenger train between Limerick and Ennis. However, this too succumbed a year or so later, leaving the entire route without any scheduled passenger train service. The cessation by stealth of scheduled passenger trains on the Western Rail Corridor between Limerick and Sligo had been achieved in just thirteen years.⁹

Weekend pilgrimage train traffic remained a regular feature until 1991 with up to ten trains to and from the south of the country using the route on any given Sunday during summer. The freight situation was also starting to disimprove in the 1980s as CIÉ began to withdraw from carriage of general goods. Intermediate stations on the route such as Gort and Tuam were boarded up and tracks left to become covered in weeds, following a similar pattern of neglect and dereliction on the line north of Claremorris.

Figure 4.9: Tuam beet factory sidings in 1975 with main line to the left. There are eight parallel roads or tracks. (D. Carse)



As business and social circumstances changed growing challenges to traditional sources of freight business were becoming apparent. For example, the contraction of Ireland's beet factories, which had previously required hundreds of trains nationwide, had a devastating effect on the railway's beet supply business. Since 1934, the Tuam factory had been a mainstay of the local economy and remained the principal employer in Tuam and the surrounding countryside for much of the twentieth century. However, as the deep recession of the 1980s made business increasingly difficult and compounded the challenge of the sugar quota system, a decision was made by the management of the sugar company to concentrate production in Carlow and Mallow and to close the two smaller factories at Tuam in January 1987 and Thurles in 1989.

Another significant loss of business stemmed from the decline of the cattle and sheep fairs which, since the 1950s, had generated large revenues for the railways. However, the cessation of fair day cattle trains, due to the arrival of livestock marts, meant that this seasonal demand had largely disappeared by the mid-1970s.¹⁰

Figure 4.10: Marshalling a livestock train in the late 1970s. (Barry Carse)



So too, pilgrimage train demand, with connecting buses serving Knock Shrine from Claremorris, which had remained strong into the late 1980s, declined steadily until the early 1990s when the last trains were run.

10

For example, a fair day would see up to four hundred and fifty wagons of cattle or sheep leave Tuam for the North Wall in Dublin, for Limerick via Athenry, or for Belfast via Claremorris, Sligo and Enniskillen.

Figure 4.11: A busy Knock pilgrimage Sunday in the 1980s with buses queuing outside the station to ferry pilgrims to the shrine. (B. Carse)



For its part, as these negative events unfolded, the railway company largely remained a spectator and rather than exploring new ways to generate business for its beleaguered lines, appeared content to shut them down.

Figure 4.12: A Sligo-Limerick goods train passing Tubbercurry in 1974. The train includes a number of containers for the Bell Line en route to Waterford.



Figure 4.13: A Sligo-Limerick passenger service pictured at Claremorris in June 1959 (M. Costeloe)



With the exception of two unusual train movements, the 75km Claremorris to Collooney railway has lain dormant and undisturbed for the last 49 years. On 21st November 1981, following publication of a Regional Development Organisation Report calling for the revival of rail services between Mayo and Sligo, CIÉ invited representatives of the Western Inter-County Railway Committee to travel by special train from Claremorris to Collooney to witness the care and maintenance being exercised by the company.

A second train movement north of Claremorris took place on Saturday 24th September 1988 when locomotive 052 in the charge of Ballina driver Dessie Gallagher hauled two carriages to the Kiltimagh Railway Museum for the local historical society.¹¹

Figure 4.14: The last train movement on the northern section of the WRC. On Saturday 24th September 1988 locomotive 052 hauled two carriages from Claremorris to the Kiltimagh Railway Museum for the local historical society. (J. St. Ledger)



11 To deter encroachment and adverse possession claims, Iarnród Éireann periodically runs 'trains' to prove it is still a railway and records these events. These 'trains' are actually road/rail vehicles with flanged wheels which, under the Railway Safety Act 2005, match the definition of a train. Such a train was engaged in vegetation clearance between Tubbercurry and Collooney from September to December 2023.

In 1975, as the line was officially closing, the then EEC issued a guideline requiring that once a railway had been formally closed to traffic in a member state the alignment must be protected and remain in situ for a period of ten years before any steps towards abandonment or lifting of tracks could be considered. This guideline protected the Claremorris to Collooney alignment until 1985, after which CIÉ initiated steps to formally abandon the 47-mile route. However, these steps were vigorously opposed by the Western Inter County Railway Committee (WICRC), consisting of elected councillors from local authorities along the route from Clare to Sligo.

“This EEC guideline protected the Claremorris to Collooney alignment until 1985, after which CIÉ initiated steps to formally abandon the 47-mile route. However, these steps were vigorously opposed by the Western Inter County Railway Committee (WICRC), consisting of elected councillors from local authorities along the route from Clare to Sligo.”

In the early 1990s the WICRC made a significant breakthrough when the Minister for Transport, Mr. Séamus Brennan TD, agreed that the disused rail track would not be abandoned until the Government could evaluate its case for restoration. Up to that point CIÉ had been sending an annual bill for the cost to them of keeping the track in situ to Fr. Micheál Mac Gréil in his capacity as secretary to the WICRC. This bill had reached the sum of £86,000 by the early 1990s. The WICRC presented the unpaid bill to the Minister and heard nothing further on the matter. By effectively preserving the thoroughfare from Collooney to Limerick for posterity, and by retaining the land in state ownership, Minister Brennan had ensured that the exchequer would save hundreds of millions in avoided costs should the railway need to be restored.

The out of use track, with an estimated value of €950m, remains in the ownership of CIÉ. The basis of this estimate may be found in the Dáil record of 11th July 2018, when the Minister for Transport stated:

‘Notwithstanding the budgetary position of the State at that time, the Government proceeded with the largest transport project in this State since 2011. This was the Gort-Tuam motorway which opened last year and which was prioritised and delivered at the height of the economic crisis at a total cost to the Exchequer and PPP contractors of €1.149 billion.’

It is a matter of public record that the cost of construction of the 57km Gort to Tuam motorway was €550m which means that the cost of the acquired land was approximately €600m.

The Claremorris to Collooney railway is 75km in length, traversing similar terrain to that in south Galway, and equating to €790m at 2017 prices which, when adjusted to 2023 values and taking into account inflation, would amount to €957m.

[4.4] THREE DECADES OF RAIL REPORTS

4.4.1 THE RDO REPORT - 1981

In January 1981, a Joint Railway Committee established by the Western Regional Development Organisations, i.e., Sligo/Leitrim, Galway/Mayo, Clare/Limerick and Tipperary (North Riding), published a report entitled *The Sligo-Limerick Railway, A Case for Its Restoration* calling for the renewal of rail services between Sligo and Limerick. The report was prepared by Dr Mícheál Mac Gréil, Department of Social studies, St. Patrick's College Maynooth in co-operation with the three RDO Directors, Tony Smith (Galway-Mayo), Mona Foran (Sligo-Leitrim) and Paddy Barry (Mid-West).

The purpose of the report was 'to make a case for the restoration of Sligo to Limerick rail services both as an integral part of the rail and road transportation network of the West of Ireland and the whole country'. Although widely reported upon in local print media the report appears to have been given little attention at a national political level.

Ten months later, on 30th November 1981, representatives of the Regional Development Organisations were conveyed by CIÉ in an engineering inspection vehicle on the line from Claremorris to Collooney in order to verify the condition of the railway. Those aboard included Mícheál Mac Gréil, Tony Smyth the Galway-Mayo RDO Director, Martin Finn TD and Jim Fahy of RTÉ, as well as local media and county council representatives. CIÉ was represented by the Assistant General Manager (Railways), Mr. Matt Devereux, and senior regional railway personnel.

Figure 4.15: November 1981: Following the publication of the MacGréil Report CIÉ arranged for an engineering inspection vehicle to travel from Claremorris to Collooney with rail campaigners and representatives of local Regional Development Organisations.



In 1987, the report was reissued as part of a renewed joint effort by the RDOs in the western counties to pursue the reopening of the railway. At the same time, the Joint Committee was expanded and renamed The Western Inter-County Railway Committee (WICRC). For its part, Iarnród Éireann¹² had made known its intention to formally abandon the route but, as outlined above, that plan was successfully opposed by the newly constituted WICRC.

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Iarnród Éireann was established in 1987 under the umbrella of CIÉ, together with Bus Éireann and Bus Átha Cliath.

4.4.2 THE WICRC REPORT 1992

In 1992, a second report entitled *The Claremorris–Collooney Railway: Exploiting a Regional Resource* was published by the WICRC. That report was carried out by European Consultancy Services in conjunction with University College Galway and Liverpool Polytechnic. The report was presented to the Minister for Tourism and Transport having been endorsed by each of the five county councils of Connacht.

The report highlighted the importance of protecting the disused alignment between Claremorris and Collooney for future railway use and, in particular, the importance of Ireland including the Sligo-Limerick-Rosslare railway in discussions with the EEC concerning a Trans-European Network. It also referred to the opportunity for inter-regional passenger travel and the carriage of freight, including maritime containers and pulpwood, the potential for rail passenger services to Knock Airport (now IWAK) and Knock Shrine and recommended that a phased approach to re-utilisation of the railway be undertaken. Like its predecessor, however, the report was ignored by Government.

Figure 4.16: An Irish Traction Group special between Ballindine and Milltown on 8th April 1995. (Barry Carse)



Figure 4.17: Weed-spray train at Ballyglunin on 4th May 2001. This was the last train to run on the Athenry -Claremorris line, apart from inspection and clearance vehicles in the years since. (Ian Walsh)



It should be noted that in late 2023 the EU agreed to include the Western Rail Corridor from Limerick as far north as Claremorris in the Ten-T map of railways eligible for EU grant aid.

4.4.3 THE STRATEGIC RAIL REVIEW 2003

A decade would pass before the matter of reopening the WRC was next investigated, this time by the consultants Booz Allen Hamilton in 2003 as part of a national rail review. The report entitled the Strategic Rail Review advised that the Government should spend €8.5 billion on the development of the national railway network over the next 20 years and that improving routes and maximising their capacity should be a priority.

While the report rejected the suggested development of the Western Rail Corridor between what it described as ‘Sligo and Cork’, it did recommend a separate detailed evaluation of the ‘Sligo-Cork Scheme’ with due consideration for its full range of potential and complementary land use potential.

The Minister for Transport, Mr Seamus Brennan, publicly disagreed with the Report’s approach to ‘disused and lightly used’ lines and said that the report was not ambitious enough. He believed it should be left open to local business communities and local authorities to seek to develop these lines, adding that in the case of the WRC he would favour such a move. He said he had already commissioned an assessment of the cost and benefits and wanted stakeholders in the region to come up with supportive proposals.

Encouraged by Minister Brennan’s support and on foot of a conference on the matter organised by the Western Development Commission, a community campaign group known as West on Track was established to work with the cross-party group of five local authorities in Sligo, Roscommon, Mayo, Galway and Clare.¹³ Ironically, Booz Allen Hamilton’s rejection of proposals to reinvigorate the Sligo to Limerick railway, would ultimately come to be seen as having accelerated its renewal.

13

Today the committee comprises representatives from eight local authorities including Galway City Council and the seven County Councils of Mayo, Galway, Sligo, Leitrim, Roscommon, Donegal and Clare.

West on Track took up Minister Brennan's suggestion that business, communities and local authorities seek to develop rail services on so-called 'disused' and 'lightly-used' lines. Through a joint initiative involving local authorities, led by Galway County Council, Mayo Industries Group, and Iarnród Éireann, a pilot multi-modal (maritime container) rail freight service was introduced between Ballina and Waterford Port in 2006. All such rail freight services had ceased at the time as a result of a policy decision by Iarnród Éireann.

This pilot rail freight service introduced the principle of train charter by logistics companies and has since been proven to be highly successful. West on Track endeavoured to prove that a demand existed for rail freight services between the west and south of Ireland which would be most economically and environmentally served by a direct rail route between Mayo and Limerick, rather than via a circuitous rail route through the congested Greater Dublin Area. The success of the Mayo-Waterford freight train services served as a template for the introduction of additional inter-modal freight trains between Ballina and Dublin Port. Today, Mayo generates 100% of inter-modal rail freight traffic in Ireland as well as 100% of pulpwood rail traffic.

As a result of the 2006 initiative approximately 10,000 freight trains have operated round trips between Mayo and the Ports of Waterford and Dublin diverting over 300,000 long-distance truck journeys, each averaging 300 kilometres and amounting to displacement of approximately 90 million truck kilometres.

"As a result of the 2006 initiative approximately 10,000 freight trains have operated round trips between Mayo and the Ports of Waterford and Dublin diverting over 300,000 long-distance truck journeys, each averaging 300 kilometres and amounting to displacement of approximately 90 million truck kilometres."

4.4.4 THE MCCANN REPORT 2005

In June 2004, an Expert Working Group on the Western Rail Corridor (WRC) was established by the then Minister for Transport, Mr Seamus Brennan TD to examine the proposal to re-open the WRC. It was chaired by Mr. Pat McCann and comprised representatives of local authority management from Sligo to Cork, Regional Authorities, County Development Boards, the Western Development Commission, the Border Midlands and West Regional Authority, the Western Inter-County Railway Committee, West on Track, C.I.E., Iarnród Éireann, Bus Éireann, the Railway Procurement Agency and the Department of Transport.

The McCann Report recommended the phased reintroduction of rail services between Limerick, Galway and Mayo in the following order:

- Ennis to Athenry re-opening to facilitate Limerick – Galway intercity services: short-term
- Athenry - Galway Commuter train services: short-term
- Athenry -Tuam extension with a commuter service to Galway: medium-term
- Tuam-Claremorris extension to include rail freight capacity to facilitate access to southern ports: medium-term
- Claremorris –Collooney. Here McCann recommended that the section be preserved in its entirety and that the viability of restoring it be reviewed in three years i.e., by 2008.

The Government accepted the McCann Report recommendations and formally included a phased renewal of the Ennis to Claremorris sections in Transport 21 which was published in 2005.

4.4.5 TRANSPORT 21

The Transport 21 plan was launched by Government in November 2005. It committed expenditure of €34 billion between 2006 and 2015 to road, rail and light rail projects. The Western Rail Corridor commitments under this plan were largely those recommended by the McCann Report:

2009 – Opening of Ennis-Athenry section

2011 – Opening of Athenry-Tuam section

2014 – Opening of Tuam-Claremorris section

Transport 21 also stated the section of line from Claremorris to Collooney (section four in the McCann Report) should be subject to protection of the alignment. However, in 2011 Government suspended Transport 21, including proposals for further extensions to Tuam and Claremorris, and promised a further review in 2016.

Iarnród Éireann commenced reconstruction of the Ennis to Athenry section in 2006, with further upgrades to the Athenry to Galway and Ennis to Limerick sections, including new stations at Sixmilebridge and Oranmore. A budget of €106m was allocated. Iarnród Éireann completed the works on time and within budget and rail services between Limerick and Galway were restored in 2010, serving seven intermediate stations.

[4.5] CONCLUSION

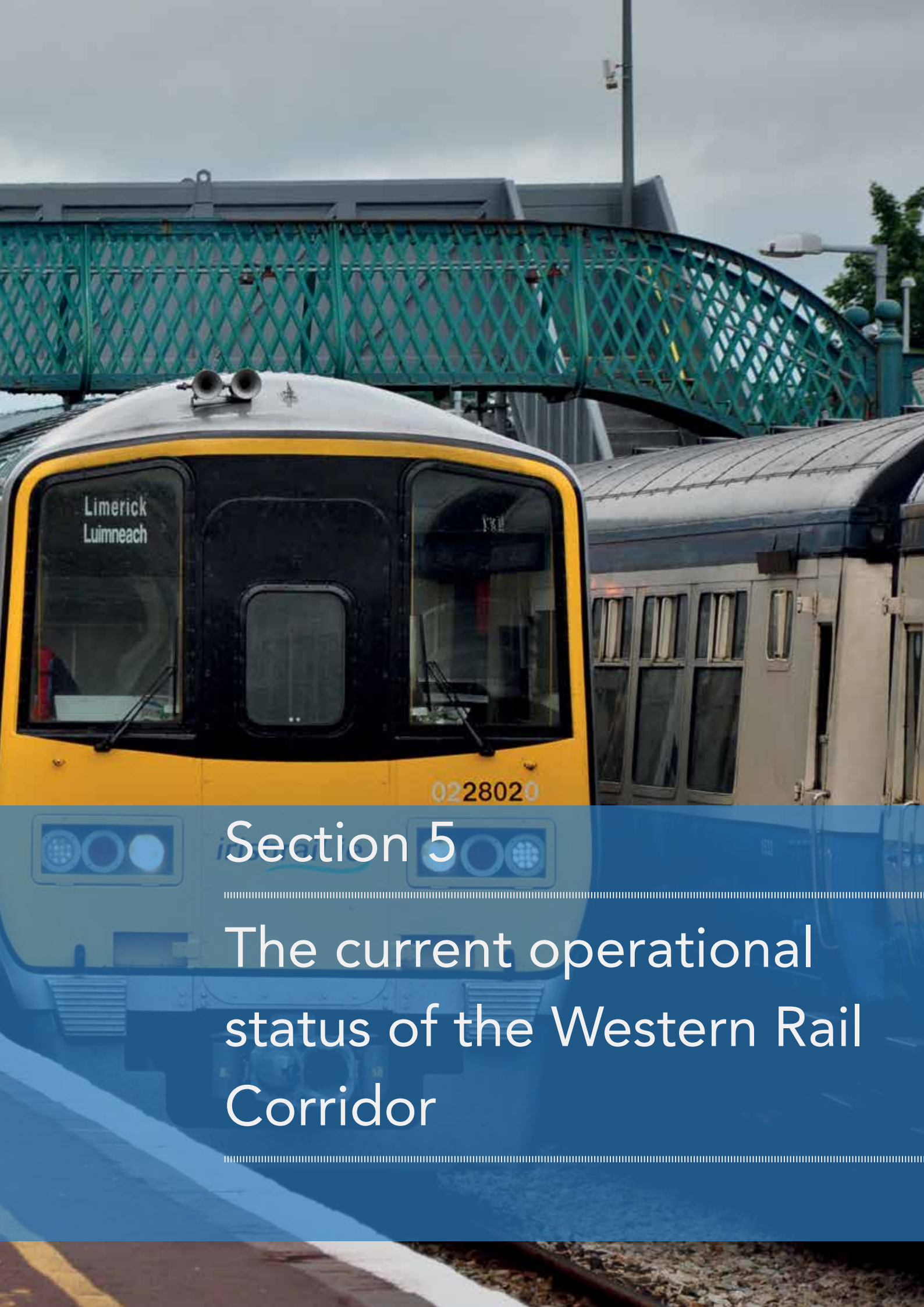
In the latter half of the 19th century the Government of the day approved and co-financed the construction of 75 kilometres of railway between Claremorris and Collooney to facilitate and consolidate good transport communication between the Boroughs of Sligo, Galway and Limerick, serving ten intermediate towns: Collooney, Tubbercurry, Charlestown, Swinford, Kiltimagh, Claremorris, Tuam, Athenry, Gort, and Ennis.

“Thankfully, the basic rail infrastructure has been preserved and the forward thinking of some 160 years ago that created this vital rail link can now be adapted and used by our generation as a means of addressing climate change and economic development challenges that our forefathers could never have imagined.”

In the latter part of the 20th century the Irish government decided to terminate rail services on the route and to allow the 75km railway to lapse into disuse, oblivious or indifferent to the social, economic and environmental consequences for the communities it was intended to serve. Thankfully, the basic rail infrastructure has been preserved and the forward thinking of some 160 years ago that created this vital rail link can now be adapted and used by our generation as a means of addressing climate change and economic development challenges that our forefathers could never have imagined.



PASSENGERS FROM GALWAY ALIGHT AT ENNIS (N. DINNEN)



Section 5

The current operational
status of the Western Rail
Corridor

[5] THE CURRENT OPERATIONAL STATUS OF THE WESTERN RAIL CORRIDOR

5

[5.1] INTRODUCTION

In this chapter we look at how the Limerick-Galway connection was re-established and the operational and service issues that arose after the line resumed operation. The continued growth and success of the line is examined with reference to the official passenger statistics as issued by Iarnród Éireann. A number of outstanding service issues are considered, together with recommendations for improvements which are justified by the success of the line. Significant recent rail developments of relevance to the WRC are outlined, including the upgrading of a number of stations on the route, a strategy to deal with the flooding issue at Ballycar, the publication of the National Freight Strategy and the Velorail project at Kiltimagh. Finally, we draw some brief conclusions.

[5.2] BACKGROUND AND THE RE-OPENING

The term ‘Western Rail Corridor’ is of relatively recent vintage and is generally attributed to the former Junior Minister, the late Noel Treacy TD. Speaking in Claremorris in 1994 at the launch of the revitalised Ballina-Limerick freight route, following a brief period of closure, Mr Treacy hailed the initiative as being ‘The start of a new Western Rail Corridor’. Freight continued on the line until February 2000 when the last Goulding’s fertiliser train travelled northwards from Foynes.

However, as will be seen elsewhere in this report, the actual corridor is of considerably greater scope and significance than simply Ballina - Foynes, having previously served Sligo to Waterford and Sligo to Rosslare for freight and Sligo to Limerick for passengers.

5.2.1 THE REOPENING OF THE LIMERICK-GALWAY LINE

In 2004, on foot of a directive by the Minister for Transport, Séamus Brennan, an expert working group, chaired by hotelier Pat McCann, was established to consider the reopening of the WRC from Limerick to Sligo. The McCann Report was issued in 2005 and recommended the reopening of the Western Rail Corridor in a series of phases.¹

The reopening of the Western Rail Corridor was included in the Transport 21 Programme and work commenced on Phase One in the autumn of 2006. By relaying new track on the disused section between Ennis and Athenry the cities of Limerick and Galway would be linked by rail and new stations and other associated infrastructure provided, both inside and outside of that section. For example, new stations were provided at Sixmilebridge (2010) and Oranmore (2013). The total cost, including the 35-mile relay was €106m. By contrast, the provision of the 35-mile motorway section between Gort and Tuam cost nearly €1.2 billion, or approximately ten times as much.²

The Limerick-Galway route, incorporating ‘Phase 1’ of the Western Rail Corridor, was officially launched by the then Minister for Transport, Noel Dempsey, on 29th March 2010 and services recommenced on the 30th of March 2010.

¹ McCann recommended the reopening of the railway in three phases as far as Claremorris to be followed by a review of the section to Sligo. See [Transport 21 - Wikipedia](#)

² Minister Shane Ross speaking in Dáil Éireann July 11th 2018: “Notwithstanding the budgetary position of the State at that time, the Government proceeded with the largest transport project in this State since 2011. This was the Gort-Tuam motorway which opened last year and which was prioritised and delivered at the height of the economic crisis at a total cost to the Exchequer and PPP contractors of €1.149 billion.”

Figure 5.1: Visiting work on the new line near Craughwell in October 2009 (L-R) Minister Noel Dempsey, Frank Dawson (Galway County Council), Fr. Micheál Mac Gréil (Western Inter-County Railway Committee), Colmán Ó Raghallaigh (West on Track) and Dr. John Lynch (Chairman, Iarnród Éireann).



Figure 5.2: The newly constructed Athenry-Ennis railway with redundant track stacked alongside for disposal (David Dawson).



Unfortunately, the service levels and general operation of the new Limerick-Galway route fell well short of the proposals set out in the business case and as early as February of 2012,³ a report by AECOM/Goodbody into the future strategy for the national rail network, recommended that improvements in speeds and capacity on Intercity lines, including the Limerick-Galway route, be prioritized.⁴ Expressing concern about service levels on the route the consultants stated:

“The key proposal for this route is therefore to introduce consistency with other Intercity services. The increase in service frequency is proposed as a measure to stimulate more Intercity demand.”

No action was taken to implement any of AECOM’s key recommendations regarding service levels and rolling stock. However, in 2014 access to on-line booking was finally made available, special student rates were introduced and free parking provided at some stations along the route.

Figure 5.3: The newly refurbished Gort Station pictured shortly before reopening in 2010. (P. Newman)



[5.3] THE OPERATION OF THE NEW LIMERICK-GALWAY SERVICE

5.3.1 PASSENGER NUMBERS ON PHASE 1 OF THE WESTERN RAIL CORRIDOR 2010-2019

The positive measures taken by Iarnród Éireann in 2013-14 marked the beginning of a steady annual growth in passenger numbers culminating in 531,000 passenger journeys in 2019. There were an additional 140,000 journeys on exclusively Ennis-Limerick commuter services, bringing the total number of journeys on the Limerick-Galway route in 2019 to 671,000.

3 Aecom for Irish Rail: https://www.irishrail.ie/IrishRail/media/Imported/IrishRail_28FebFinal_Part11.pdf

4 The report was entitled the Strategic Rail Investments Needs Review,

5.3.2 THE PANDEMIC AND CONTINUING STRONG GROWTH ON THE WRC IN 2022 AND 2023

As can be seen from Table 5.1, there was an increase of 73,648 passengers (or 16.1%) on the WRC between 2018 and 2019. Due to the Covid-19 Pandemic a full set of figures is not available for 2020 or 2021. However, in January 2023 the National Transport Authority (NTA) confirmed that the Limerick-Galway route continued to be the fastest growing rail route in the country recording an increase over 2019 figures of 14.4%. In fact, the Western Rail Corridor was the only rail line in the country to record double-digit growth.⁵ This pattern continued in 2023 when the Galway-Limerick line carried 626,824 passengers (see table below).

Table 5.1: Passenger Numbers on Phase 1 of the Western Rail Corridor 2010-2019

YEAR	LIMERICK-GALWAY	CHANGE +	ENNIS-ATHENRY*	CHANGE
2010	185,254		43,799	Mar-Dec 2010 only
2011	224,166	21%	34,461	-21%
2012	235,555	5%	34,235	-1%
2013	219,209	-7%	28,473	-17%
2014*	225,116	3%*	51,128	80%
2015	278,532	24%	102,486	100%
2016*	289,323	4%*	100,564	-2%
2017	352,706	22%	133,835	33%
2018	457,688	30%	137,784	3%
2019	531,336	16%	160,135	16.2%
2020**	N/A			
2021**	N/A			
2022	584,469	10% Est.	194,631	14.4%
2023***	626,824		214,648	
Increase since 2010	441,570		170,849	

* Flooding at Ballycar necessitated closure of the line between Ennis and Limerick in 2014 and 2016, hence the lower growth data for those years.

** Due to the Pandemic meaningful data are not available for 2020 and 2021.

*** Data for 2023 supplied by IÉ to Deputy Éamon Ó Cuív, Mar 2024.

5 Figures released by Anne Graham, CE of the National Transport Authority (NTA) in response to a Dáil question by Deputy Éamon Ó Cuív TD.

Figure 5.4: Long queues for the Galway train at Limerick's Colbert Station in early December 2022 (P. Newman)



The chief executive of the NTA, Anne Graham, commented that the overall figures in 2022 were “more in line with the recovery levels internationally on public transport”. In total, the number of journeys taken on Irish Rail services was just under 36 million, down 28 per cent on the comparable figure for 2019 but significantly up on the figures for 2020 and 2021 when the totals were 17.9 million and 17.4 million respectively. More specifically, the numbers travelling on intercity services were down 24.9 per cent, Dart services were down 26.1 per cent and other commuter rail carried 34.6 per cent fewer passengers than in the last full year before Covid-19. The Luas recorded a 20 per cent drop overall, with the Red line down 15.7 per cent and the Green line 24.3 short of its 2019 tally.

Only three routes recorded increases: Limerick - Galway was up 14.4 per cent, while Dublin to Tralee and the commuter line between Cork and Midleton, were up by about 1.5 per cent in each case.

5.3.3 ADDRESSING THE BALLYCAR FLOODING PROBLEM

A long-standing flooding problem at Ballycar near Newmarket-On-Fergus has been the cause of intermittent disruption to rail services on the Ennis-Limerick section of the WRC. In 2014, flooding to a depth of 1.9m caused the closure of the line at Ballycar for over 16 weeks between February and May. The railway was also closed for a period of 22 weeks by a flood event from 15th December 2015 to 17th May 2016 as result of prolonged heavy rain.

Following the recent completion of a multi-agency study aimed at identifying a permanent solution to the problem, Iarnród Éireann indicated in September 2023 that, in order to maintain an essential and reliable service, it is proposing to deliver a €16.7m flood defence system to serve the Ennis to Limerick line. The development will be subject to Department of Transport approval and exchequer funding, with the remedial works to be carried out by an external contractor.⁶

6

Clare FM News interview with Barry Kenny of Iarnród Éireann, 27th September 2023.

5.3.4 EMERGING NEEDS ON THE LIMERICK-GALWAY SECTION OF THE WRC

While the Galway – Limerick line continues to be the fastest growing route in the country there are nevertheless, several major issues which need to be addressed:

At a service level, the number of daily services needs to be increased to at least seven as promised in the original business case and proper early morning commuter services to Galway need to be provided. The Limerick-Galway route should be re-branded and marketed as an InterCity route, which would be a true reflection of its status, and a Leap Card should be introduced for all rail services in the western region.

To facilitate these improvements modern rolling stock i.e., inter-city railcars (ICRs) need to replace the existing outdated ‘commuter’ trains which are not appropriate for journeys of that length.

In order to maximize the potential of the line, the service timetable needs to be accelerated to reflect the full potential of line-speed capacity while Bus Éireann and Local Link Services in Clare and Galway should be linked into and co-ordinated with the timetable, providing integrated public transport from the railway to rural communities.

Direct services linking Cork, Limerick and Galway should be introduced as an extension of the scope of the Western Rail Corridor with a new park and ride station at Crusheen, as promised in 2012-13.

Finally, in order to allow for faster services on the Ennis–Limerick section and to facilitate future rail freight flows, a number of passing loops will need to be provided, potentially at Sixmilebridge, Moyross and elsewhere.

Figure 5.5: A modern intercity railcar set on the Limerick-Galway service passes Ballymaquiff Castle, Labane, Co. Galway on Phase 1 of the WRC. All trains on the line need to be upgraded to this standard. (P. Newman)



[5.4] RECENT RAIL DEVELOPMENTS OF RELEVANCE TO THE WRC

A number of significant station developments have been taking place (or have been mooted) over the past two to three years in the mid-west region, all of which are of relevance to the Western Rail Corridor. These include the refurbishment of existing stations at Ennis, Oranmore and Galway and the provision of a new station at Moyross.

5.4.1 MOYROSS STATION

The Moyross project, located on the Western Rail Corridor, will deliver a new railway station in a growing area of suburban Limerick, which is currently undergoing significant regeneration. It is also a key element of the Limerick Shannon Metropolitan Area Transport Strategy 2040 to support compact growth and improve connectivity for the area's growing population. The project was announced by the Minister for Transport in October 2022.

5.4.2 ENNIS STATION

In 2022 Iarnród Éireann undertook major improvement works at Ennis railway station including the replacement of the original platform one on the east side of the station with a new platform, refurbishment of bathroom facilities and the provision of new ramps, new platform shelter, signage, lighting and street furniture. The development also involved track work and services on the Limerick-Galway route were affected over a period of several months. However, as subsequent passenger numbers showed, the route still recorded growth of 14.4% in 2022, the highest increase on the network.

Figure 5.6: The refurbished Ennis station with passengers waiting for the Galway to Limerick train.



5.4.3 ORANMORE STATION

Oranmore Railway Station officially opened in July 2013, as part of the development of Phase 1 of the Western Rail Corridor. As a result of the success of the station a major upgrade is now planned. This will see the provision of a new 1km passing railway loop to allow trains to pass each other within the twin track section. The works will also include the construction of a second platform at the station, a new footbridge over the rail tracks, a much enlarged car park and lifts to ensure accessibility for all users. Funding of almost €9.3 million was secured for the project under the Urban Regeneration Development Fund, with €3 million being committed by the Department of Transport.

Figure 5.7: Passengers alighting at Oranmore station on the Western Rail Corridor (N. Dinnen)



5.4.4 CEANNT STATION, GALWAY

A major redevelopment of Ceannt Station, Galway, a critical destination along the entire Western Rail Corridor, is currently under way. The new station will have five platforms as opposed to the current two. Planning permission was first granted for the redevelopment in 2014, and extended for a further five years in 2019. The expansion and renovation of the station will ultimately see an additional 2,336sq metres of concourse and platform space added to make it more functional as a hub for rail travel. Other improvements to the station will include the construction of a glazed entrance building, and a partially glazed new roof, to replace the existing structure. New pedestrian entrances and ticketing facilities will also be provided to make it more accessible for passengers, along with multiple other improvements.

In a parallel development, An Bord Pleanála has granted a 10-year planning permission for a €320m 'mixed use' development of lands adjacent to Ceannt Station. The 'Augustine Hill' project will have nine blocks ranging in height from one-storey to 21-storeys – Galway's tallest multi-storey building.

Figure 5.8: A simulated view of the refurbished Ceannt Station, Galway.



5.4.5 RESTORATION OF THE FOYNES – LIMERICK RAILWAY

The current restoration project on the Foynes – Limerick railway marks a significant positive step towards the further development of the broader WRC. The Foynes-Limerick line had been an integral part of the Western Rail Corridor until the last Ballina-Foynes freight train ran in 2001.

In 2021, Shannon Foynes Port's development plan for the future, Vision 2041,⁷ set out ambitious plans to develop a multimodal transshipment facility at the port, including the restoration of the direct link to Ballina. Mr. Jerry Hallisey Head of Business Development said, "The reopening of the Western Rail Corridor is viewed by the Shannon Foynes Port Company as a vital element for the success of the proposed new container services in Foynes. It offers viability to the service offering and nationally it reduces traffic to east coast congested ports and makes an overall contribution to our national decarbonisation ambitions."⁸

Shortly after assuming office in 2020, the Minister for Transport signalled his support for both projects as part of an 'Atlantic rail freight corridor'. Describing the two projects as 'missing links' he observed:⁹

"Developing those two small links would give us a national rail freight service connected to two international deep-water ports"

The restoration project is eligible for EU Ten-T funding and aligns with the Shannon Foynes Port Company's 2041 Masterplan, which aims to transform the port into a hub for the production of giant ocean-based green wind turbines off the Shannon estuary, and as a location for the production and transport of green energies like hydrogen and ammonia. A container handling facility is also planned.

In early August 2022, tender notices were issued for initial clearance works and in November, RTÉ reported a total figure of €104m for Phase One of the project including track removal, installation of new rail track and sleepers, upgrading of road infrastructure at level crossings, rehabilitation of bridges and culverts and renewal of lineside fencing.

7 www.sfpc.ie; The Shannon estuary is Ireland's deepest and most sheltered watercourse.

8 Statement from Jerry Hallisey, Head of Business Development SFPC - March 2021

9 Dáil Éireann debate - Thursday, 24 Sep 2020 <https://www.oireachtas.ie/en/debates/debate/dail/2020-09-24/>

Iarnród Éireann stated that the upgrade of the line would facilitate rail freight services while not precluding the possibility of passenger services being reintroduced on the line in the future. The original passenger line serving Patrickswell, Adare, Askeaton and Foynes closed in 1963.

Figure 5.9: Iarnród Éireann chief executive Jim Meade (left) with John Sisk chief executive Paul Brown at the announcement of Phase One of the Limerick - Foynes project in January 2023.



In January 2023 it was announced that Iarnród Éireann had awarded the €65 million contract for the first phase of the project to John Sisk and Son.

Throughout 2023 rapid progress was made in lifting of old track, removal of ditches and replacement with strong fencing and the laying of essential fibre and utilities. The major physical works are scheduled for completion by late 2024 with the track expected to become operational shortly thereafter.

A second phase will see the provision of a signalling system for the route, CCTV level crossings, trains communications systems and track connections and upgrades at Limerick and Foynes yard, with work due to be completed by 2025.

Figure 5.10: River Maigue Bridge at Adare being lifted out for renovation and restoration as part of the Limerick to Foynes Rail Project



5.4.6 NATIONAL RAIL FREIGHT STRATEGY 2040

On December 1st, 2021, Iarnród Éireann launched its National Rail Freight Strategy 2040 at Ballina rail freight yard, stating that Ballina had been selected as the venue for the event as “it is one of the most important hubs on Ireland’s rail freight network”.

The strategy, which is aligned with Climate Action Plan goals to decarbonise transport, set out a series of initiatives targeted at increasing rail freight operations five-fold. There was no mention of the Western Rail Corridor in the strategy, despite the Minister for Transport having publicly declared in both Dáil Éireann and the Seanad, his desire to see the freight line from Ballina to Foynes and Waterford restored.¹⁰

Since the launch of this strategy, the multi-national company Baxter Healthcare has commenced moving some of its freight by rail to Waterford, predicated on the provision of a rail freight hub in Castlebar and access to the Western Rail Corridor.

The restoration of the Galway-Mayo section of the WRC, has become more relevant due to vulnerabilities in Ireland’s international supply chains as a result of BREXIT. Such vulnerabilities require improved connectivity and direct access to the south-eastern and southern ports of Foynes, Cork and Waterford. The ongoing rail freight issues in Dublin Port serve to illustrate the urgent necessity of having an alternative route for Mayo and potentially Sligo industries to the southern ports.

5.4.7 KILTIMGH VELORAIL PROJECT

An interesting recent development on the northern section of the disused railway has been the development of a Velorail project near Kiltimagh. The development process, initiated almost ten years ago, protects the rail alignment whilst affording a rail use for the railway. On Saturday, June 10th, 2023, some 60 years after the railway line last carried passengers, rail traffic returned to Kiltimagh as the Velorail, the first of its kind in Ireland or the UK, carried its first passengers to and from Kiltimagh station.

The Velorail is a unique and highly innovative project involving the running of pedal powered carriages along the disused railway line. From its starting point at the railway station users can traverse a route measuring 15 kilometres in total - either north or south of the station, depending on the route in operation at the time of booking.¹¹

While the track has remained substantially intact since closure, permissions were required from Iarnród Éireann to use the section of track either side of Kiltimagh and significant work was carried out in clearing and repairing the track, perfecting the road crossings and the station area.

¹⁰ For example: Speeches by Minister E. Ryan, Dáil Éireann, 24 September 2020 and Seanad Éireann, Friday, 23 Oct 2020.

¹¹ See <https://www.velorail.ie/>

5.11: Velorail vehicles on the railway line at Kiltimagh Railway Station in June 2023.



[5.5] CONCLUSION

The reopening of the first phase of the WRC marked a significant milestone in the development of rail on the north-south axis. Despite a slow start, in the midst of a major recession, the Galway-Limerick railway continues to be the fastest growing rail line in the country. Building on that success, the development of the next phase of the corridor from Athenry to Claremorris has recently been recommended in the draft All-Island Strategic Rail Review with particular emphasis on growing rail freight business from western companies to the southern ports. In a related development Iarnród Éireann has announced the development of a rail freight hub in Castlebar which is expected to come into operation next year with the ultimate aim of serving the reopened WRC to the south.

The successful restoration of Phase One of the WRC has opened up rail travel from Galway to Limerick, Cork and Waterford. Restoration of the next phase from Athenry to Claremorris will add even greater connectivity, connecting all of the main towns in Mayo to the north-south network while simultaneously enabling businesses to access the southern ports. At this point the logic of planning for its continuation to Sligo is inescapable. Every link that is added to the corridor adds enormously to the viability and earning power of the route as a whole and serves to create the infrastructural spine so essential to the development of the Atlantic Economic Corridor and the transformation of the entire region.



OWENGARVE RIVER BRIDGE, CURRY, CO. SLIGO (P. BOWEN-WALSH)



Section 6

A virtual tour of the
Claremorris to
Collooney line

[6] A VIRTUAL TOUR OF THE CLAREMORRIS TO COLLOONEY LINE

6

[6.1] INTRODUCTION

The opening of the 46.25 mile extension of the railway from Claremorris to Collooney Junction in 1895 by the Waterford & Limerick Railway completed a 222.25 mile route from Waterford to Sligo. Although closed in 1975, unlike other closed lines it was not dismantled and was never formally abandoned. It remains in public ownership today, although disconnected from the operational rail network at Collooney Junction and at Claremorris.

The line is officially described as ‘Not abandoned and required for future use by Iarnród Éireann’. All of the public road bridges are inspected every two years. To deter encroachment and defend against adverse possession claims, Iarnród Éireann periodically runs ‘trains’ to prove it is still a railway and records these events. These ‘trains’ are actually road/rail vehicles with flanged wheels which, under the Railway Safety Act 2005, match the definition of a train.

Figure 6.1: Detail from Johnston's Railway map of Ireland 1900 with Claremorris-Collooney line shown in yellow.



When the line opened in 1895, there were eight stations: Kiltimagh, Swinford, Charlestown, Curry, Tubbercurry, Carrowmore, Leyny (Coolaney) and Collooney Southern. Curry, Carrowmore and Leyny closed in 1963 when passenger services were withdrawn and the line was closed to all traffic from November 3rd, 1975.

The Claremorris-Collooney line was built cheaply with the minimum of earthworks, following the contours of the ground, avoiding steep embankments, deep cuttings and the provision of grade separated¹ crossings was parsimonious. The gradient profile (Figures 6.2 and 6.3) demanded much skill from engine crews in the steam locomotive era but diesel traction allowed a creditable 50 MPH (80 km/h) line limit from the early 50's.

¹ Grade Separation effectively means bridging, be it rail over road, road over rail, or road over road (two routes crossing each other at different levels, such as motorway flyovers).

Figure 6.2: 'Gradient profile: Claremorris to Sonnagh, indicating river and national primary route crossings'

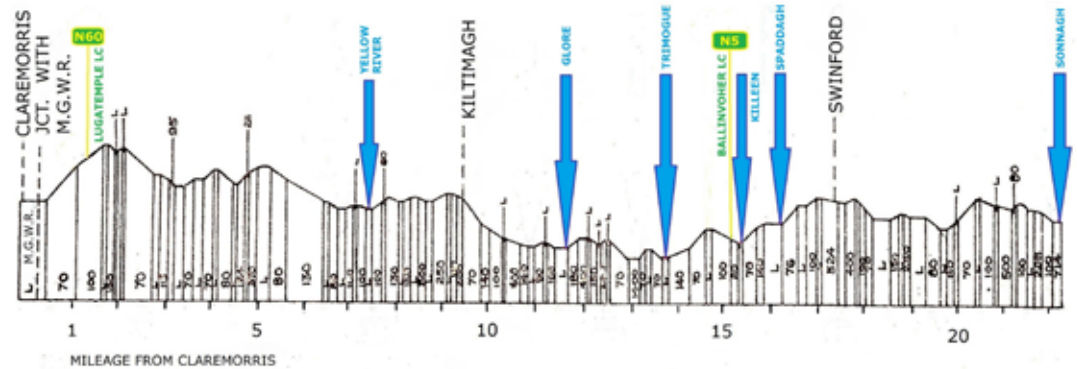
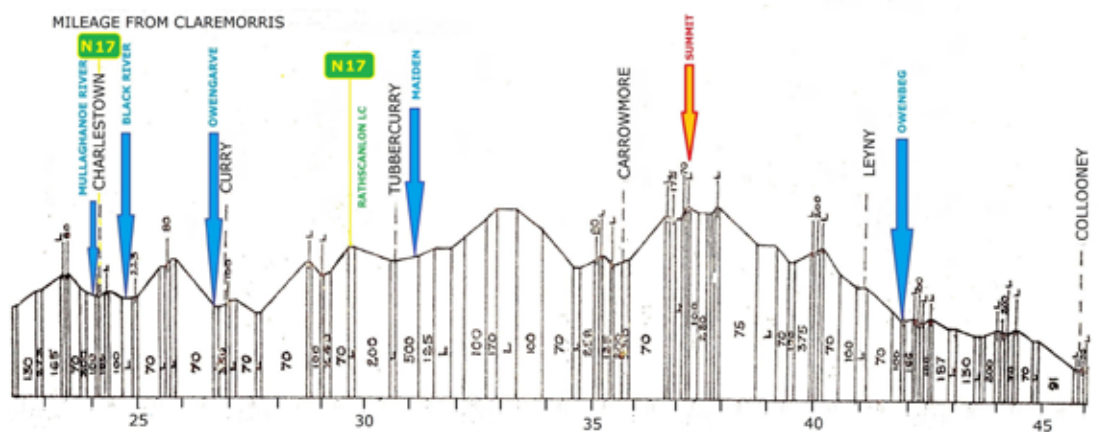


Figure 6.3: 'Gradient profile: Sonnagh to Collooney, indicating river and national primary route crossings'



The permanent way consists mainly of 46.25 miles of 70 lbs. per yard, (originally 60 lbs. per yard) flat bottomed steel rails on Baltic redwood sleepers. There are roughly six miles of track where bullhead rail in chairs² was used. In places thirty foot lengths were welded together to make sixty foot track panels but in the main, forty five foot and thirty foot panels were used, with some of the original rails surviving to closure. Water towers (for steam locomotives) were provided at Swinford, Tubbercurry and Collooney. Tubbercurry had a turntable and an engine shed.

There are 42 bridges on the line of three varieties; 14 Overbridges (OBs), 1 concrete and 13 stone, 12 stone Underbridges (UBs), and 16 steel UBs (3 farm underpasses, 2 stream UBs, 2 public road UBs and 9 river bridges). There are no steel overbridges. In addition, culverts and drainage pipes account for a further 102 smaller structures. These are mainly of rectangular box section, loose stone and slab construction. Many more are cut stone arches, some of equal size and quality to those that bear numbers.

The line has 297 crossings, the vast majority of which are field crossings, with many long redundant and unused. Many more are to single private houses. Regular vehicular traffic uses forty eight 'at grade, public road crossings'³, ranging from national primary routes such as the N60, N5 and N17, to minor L class roads. Twenty four of these crossings were originally attended by a gate keeper and are designated as 'CX' type. There are also many other level crossings on minor public roads and private roads, that were user

² A rail chair is what is between the railway sleeper and the rail itself which 'sits' in it.

³ 'At grade' means a level crossing between road and rail or a crossroads/road intersection on the level.

worked, unattended occupational crossings. These are designated as ‘O’ type. All crossings are identified with the prefix XCL followed by the crossing number, in ascending order northwards from Claremorris.

In order to get a clearer picture of the current physical condition of the line, 49 years after closure, a detailed track survey was conducted from Claremorris northwards to Collooney Junction. The following abbreviations are used; OB for overbridge (railway beneath), UB for underbridge (railway above), MP for milepost and LC for level crossing. The prefix CL, denoting Claremorris as the origin of the line, is used on all bridges, (such as OBCL 226 at Drumneen or UBCL 262 at Masshill Road) to differentiate them from similarly numbered bridges on other lines and to allow easy identification of the location if damaged accidentally.

[6.2] CLAREMORRIS TO KILTIMGH

Our survey commences at the point where the Mayo and Sligo lines diverge, a quarter of a mile northwest of Claremorris station (Figure 6.4). A rising gradient and a curve to the right brings the line beneath Ardroe OBCL 223 and shortly afterwards beyond MP 0.75, beneath accommodation OBCL 224. Both stone bridges are in good condition.

Figure 6.4: Westport line curves left from western end of Claremorris station with Collooney line on right, 2009



Mileposts appear every quarter of a mile on the left, or ‘down side’ (down direction is taken as that of the ascending order of mileage). They bear the mile number and their shape denotes the fraction. A full mile is represented by a steel square painted white with black numerals, a quarter mile by a quarter of the (mile) square set as a diamond, a half mile by a triangle (half the mile square) and three quarters of a mile by a chevron or “V”, the full square minus a quarter.

The line then straightens and at MP 1, passes over farm accommodation steel girder UBCL 225 before crossing the busy N60 Claremorris-Castlebar Road, at Lugatemple LC (XCL 006) before swinging slightly to the left with further slight curves to the right before passing under Drumneen OBCL 226 carrying the R320 Kiltimagh road (Figure 6.5). The line undulates gently on a falling gradient through Aghareville LC (XCL 017), across steel

girder stream UBCL 227 before climbing to Kilcolman LC (XCL 020) and through Ballintaffy LC (XCL 024) just north of MP 4.25. There is an encroachment here at the former crossing keeper's house. The line has been incorporated into a lawn and immediately north of it, is the only part of the line that has never been cleared post closure.

Figure 6.5: Railway passing under Drumneen overbridge (OBCL 226), carrying the R320 Kiltimagh road.



There is a substantial unnumbered culvert just to the north of the uncleared section representative of many similar structures on the line (Figure 6.6). Continuing north, the line crosses Murneen stone UBCL 228 (over R320) which has a height restriction for road traffic (Figure 6.7). It then crosses farm accommodation steel girder UBCL 229, before crossing Murneen LC (XCL 029) just before MP 5.25. This is the southern limit of the Velorail amenity based at Kiltimagh.

Figure 6.6: An unnumbered culvert representative of many similar structures on the line.



Figure 6.7: View north across Murneen underbridge (228) over acute bend on R320.



From this point to Kinaff LC, just before MP 14, the line has been cleared of all vegetation to facilitate the Velorail operation. Beyond Murneen LC the line changes from flat bottomed to bull head rail for two miles. After Cultybo LC (XCL 034) between MPs 6.5 and 6.75, major restoration work has been completed on a 100-metre stretch of embankment that had subsided. (There is some evidence that it is beginning to subside again.) A quarter mile further on the line crosses steel girder stream UBCL 230. From MP 7.0, the line swings to a north-easterly direction as far as Kiltimagh.

A short distance beyond MP 7.25 the line crosses the Yellow River on a single span Warren truss steel girder bridge UBCL 231, the largest engineering feature on the line so far. The deck of the bridge has recently been adapted to allow safe passage of the Velorail carts (Figure 6.8).

Figure 6.8: Single span Warren truss steel Girder Bridge UBCL 231 crossing the Yellow River



Over 100 metres of track has been replaced near MP 7.5 where it had been stolen. The line climbs to MP 8.5 just before Ballyglass (or Cordarragh) LC (XCL 047). Cultybo, Ballyglass and an LC a quarter mile north of Ballyglass have locked, light weight galvanised hinged steel barriers, which are opened for Velorail use. From here, the line falls past MP 9.0 where there is another section of bullhead rail, before crossing the Knock Road (R293) at Thomas Street LC (XCL 056) at the south end of Kiltimagh Station.

The well maintained Kiltimagh station has retained most of what existed at closure (Figure 6.9). It was a block post (one end of a failsafe signalling system for a section of line between two signal cabins) for the section to Claremorris and the section to Swinford. The structurally intact redundant signal cabin is on the up (right) side on entering the station. There is a passing loop with a passenger platform on either side. Short truncated remains of a siding that went behind the up platform and another that served the goods' store on the down (left) side are still connected to the through and loop lines respectively. The goods store has been repurposed as Kiltimagh Museum with two former CIE coaches adjoining it, beneath an open sided shed. The arrival of these coaches from Claremorris in 1988 was the last train on the line, apart from road/rail vehicles used for vegetation control. Beyond the goods' store, the station house has been restored (but with PVC rather than timber sash windows) and is used by the Velorail operator. There is a passenger shelter on the platform opposite, also in good condition.

Figure 6.9: Looking northwest at Kiltimagh station house and James Street level crossing from the up (east) platform.



[6.3] KILTIMAGH TO SWINFORD

Leaving Kiltimagh the line immediately crosses the Kilkelly road (R322) at James Street LC (XCL 057). The newly constructed rail cart shed is on the up side. Beyond MP 9.50 is the site of the Kiltimagh Rail Disaster of December 19th, 1916 where a ballast train from Limerick collided with an empty cattle wagon train from Sligo, resulting in six fatalities. A quarter of a mile further on, the line goes under the stone OBCL 232, which carries the Swinford road (R320), followed by ‘Wickets Walkway’, a pedestrian link between the Bohola and Swinford roads.

The line takes a north-westerly course from MP 10.00 to Polronahan LC (XCL 071) at MP 11.00, before turning northeast through Killedan LC (XCL 079), close to the birthplace of the poet Raftery.

Figure 6.10: Glore River bridge (233) immediately northeast of milepost 11.75.



At MP 11.75 the railway crosses the Glore River on a twin span steel trough girder bridge UBCL 233 (Figure 6.10) following which the line goes through Treanfohanaun LC (XCL 081). Here, there is a hydraulically operated turntable between the rails for turning the Velorail carts towards Kiltimagh, with adjacent seating made from sleepers. The line curves northwest then northeast as it goes towards Ballinlag LC (XCL 091) between MPs 13.50 and 13.75. Similar facilities for the rail carts to those at Treanfohanaun LC are provided here. The four LCs from Polronahan to Ballinlag are fitted with locked lightweight galvanised hinged steel barriers, opened for Velorail use.

The twin span steel trough girder Trimogue River bridge UBCL 234 lies just beyond MP 13.75 (Figure 6.11). Kinaff LC (XCL 092) comes just before MP 14 and a quarter mile further on there is stone UBCL 235.

Figure 6.11: Trimogue River bridge (234) immediately north of milepost 13.75.



The line takes a long curve northeast, then northwest over an embankment, then a cutting to Ballyglass LC (XCL 101), past MP 15.00 where the line has been undermined by drainage failure. A descent through a cutting leads to Ballinvoher LC (XCL 103) where it crosses the N5 and leads to an embankment crossing the Killeen River stone UBCL 236. The N5 crossing at Ballinvoher is in a quite dangerous location for road and rail traffic (Figure 6.12).

Figure 6.12: Motorist's eye view in 2015 of Ballinvoher LC of N5, just south of MP 15.25, travelling east with new gates erected



A climb commences to Esker LC (XCL 107) between MPs 16.00 and 16.25 followed by the Spaddagh River single span steel trough girder bridge UBCL 237 which has recently had its handrails and decking renewed for safety reasons.

Figure 6.13: Milepost 16.50 & whistleboard in use as garden ornaments due to trespass on railway property



Adjacent to Lisheenabrone LC (XCL 110) there is an incursion here where there is a lawn and shrubs on railway property, incorporating MP 16.50 as a garden ornament (Figure 6.13).

Figure 6.14: Southeast side of Swinford goods store, now converted to a cultural centre and library.



Entering Swinford at MP 17.25, the rails change to bullhead type until before the viaduct. Swinford was a block post and the derelict original Waterford and Limerick signal cabin is on the down side. There is a ruined passenger shelter on the down platform which is served by the passing loop and the disused water tower is beyond the platform. The former goods store on the upside (Figure 6.14) has been repurposed as a library and the former station house on the up platform, is a private residence. Major remedial drainage was done here but extensive vegetation growth has hidden the track work. The engineering highlight of the entire line is undoubtedly the double arch stone Swinford Viaduct UBCL 238+239 (Figure 6.15). The larger arch spans the Foxford Road N26 and the smaller arch spans a stream and footpath.

Figure 6.15: Southeast side of Swinford Viaduct (238+239) over the Foxford Road (N26), footpath & adjoining stream, southwest of milepost 17.50.



[6.4] SWINFORD TO CHARLESTOWN

Having crossed Swinford Viaduct the next structure is the restricted height Aclare road stone UBCL 240. Beyond Swinford the line takes an easterly direction as far as Charlestown. Remedial drainage work was done at MP 18.00 and towards the single span steel trough girder Rathscanlon road UBCL 241. A short distance beyond MP 18.25 is a single arch stone stream UBCL 242 and the next structure is an unnumbered small steel girder farm accommodation underpass. The line climbs to MP 19.50, and then descends to MP 20.00, before climbing again to Drumshinnagh LC (XCL 146).

Figure 6.16 Apparent attempt to remove 30-foot length of track between Drumshinnagh level crossing and milepost 20.25



The most serious instance of trespass and encroachment on the entire line occurred for approximately 200 metres north of this crossing. The rails were cut at 30-foot intervals, but left in situ. Iarnród Éireann became aware in September/October 2019 that track was removed and sleepers stored on third party property. The issue was addressed but the track has not been replaced to date (Figure 6.16).

The climb continues over concrete stream UBCL 243, on an embankment and through a cutting before a summit and the only concrete overbridge, OBCL 244 (dated 1894) on the line, carrying the Culmore road. Just before MP 20.75 a section of bullhead rail begins. The line curves around a large bog then straightens out. Sonnagh LC (XCL 160) is at MP 22.00 where the line crosses the road accessing the bog. The line then descends over the Sonnagh River on a single span steel trough girder bridge UBCL 245 before crossing beneath the Sonnagh road stone OBCL 246 followed by a minor LC located just before MP 22.50. Remedial drainage work was carried out at this location. Between MPs 22.50 and 22.75 the rail type reverts to flat bottomed rail and between it and MP 23.00 there is a minor LC followed by Lowpark LC (XCL 169) at MP 23.25 and UBCL 247.

Figure 6.17 View east across Mullaghanoë River bridge from old signal post towards milepost 24.00 & Charlestown station. Turnout to the loop on the down side is just beyond the bridge.



Figure 6.18 Underside of deck of trough girder steel Mullaghanoë River bridge (248) between mileposts 23.75 & 24.00



Before entering Charlestown station, the Mullaghanoë River is crossed by a single span steel trough girder bridge UBCL 248 incorrectly numbered 247 (Figures 6.17 and 6.18). Charlestown has a single platform on the up side and the loop was on the downside. It was previously a block post but the small station building, signal cabin, goods store and sidings which were all on the up side are gone. The county boundary crosses the line immediately before the LC which is in Bellaghy Co. Sligo. (Figure 6.19) UBCL 249 is interesting since from its segmental stone arch north-western portal to a more utilitarian concrete south-eastern one, the stream it covers, forms the county boundary between Mayo and Sligo. It is also the longest culvert on the line, passing beneath the railway, the N17 and a filling station.

Figure 6.19: Looking east through Charlestown N17 level crossing just east of missing milepost 24.00.



[6.5] CHARLESTOWN TO TUBBERCURRY

County Sligo is entered at the N17 Charlestown LC (XCL 174) and from the east side of the gates there is an incursion here where a garage forecourt abuts onto the rail next it. The railway is incorporated into a grassed area and a metal sign for the garage straddles one rail (Figure 6.20). MP 24.00 is thrown on the ground where MP 24.25 should be. MP 24.00 belongs in the station area.

Figure 6.20: Looking east across the N17 at Charlestown Level crossing, past MP 24.00 (missing) towards Curry.



MP 24.25 is incorrectly placed before Bellaghy LC (XCL 179) which should be MP 24.50. MP 24.75 is in the correct location (but thrown on the ground), leading towards the single span steel trough girder Black River Bridge UBCL 250. A climb ensues past Broher LC (XCL 185), south of MP 25.50 and to beyond Broher North LC (XCL 186) at MP 25.75. The line resumes a north-easterly direction and maintains it until Leyny. Curryfule LC (XCL 188) comes just north of MP 26.00, then Bunnacrannagh LC (XCL 190) just before MP 26.25 and then Curry South stone OBCL 251 on the descent to Curry.

Figure 6.21: Owengarve River bridge (252) Curry, between mileposts 26.75 & 27.00



Curry is approached via a particularly fine double arch stone bridge over the Owengarve River, UBCL 252 (Figure 6.21) and then immediately crosses a mill race UBCL 253, and an access road UBCL 254 on adjoining arches before Curry station. Curry station is on the down side with a platform (Figure 6.22), just beyond which is the former goods store, also on the down side, which was served by a siding. The station and goods store are in private hands.

Figure 6.22: Looking north at Curry station just south of milepost 27.00 towards Drumbane South level crossing



Stone stream UBCL 255 is just before MP 27.00 and Drumbane South LC (XCL 196) comes before MP 27.25. Drumbane North LC (XCL 198) is at MP 27.50. There is a single span steel trough girder bridge UBCL 256 at Calloghoge, across a stream just south of MP 27.75 followed by stone stream UBCL 257 at MP 28.00. Next are Carrowwilkin South LC (XCL 201) and Carrowwilkin North LC (XCL 202), one each side of MP 28.25. Remedial drainage work was carried out between both LCs.

There is another incursion at Carrowwilkin North LC where the line has been covered over with gravel and is used as a car park for the former crossing keeper's house. More recently, a solid stone wall has been built across the north side of the crossing (Figure 6.23).

Figure 6.23: Stone wall built across the north side of Carrowwilkin North



Cashel LC (XCL 205) follows, just before MP 29.00. There are a number of places where adjoining landowners have erected fences and beyond MP 29.00 an 'accommodation crossing' has been made where there had not been one previously. There is an embankment past MP 29.50 where there is a large stone stream UBCL 258 over a tributary of the Moy. The northwest buttress wall is compromised by a tree growing out of it. MP 29.75 is vandalised and on the ground. The line climbs to Rathscanlon LC (XCL 211) before descending to Tubbercurry.

Figure 6.24: Motorist's eye view of Rathscanlon LC (N17) south of milepost 30.00



Figure 6.25: Acute angle of Rathscanlon LC (N17) emphasised by traffic south of MP 30.00



Rathscanlon LC just before MP 30, crosses the N17 road at an acute angle and with poor sightlines is quite dangerous. Even if the N17 bypass is built, grade separation or major road realignment is necessary here (Figures 6.24 and 6.25) Two stone overbridges, Casey's OBCL 259 and farm accommodation OBCL 260 come before Tubbercurry, with extensive drainage work in the cutting (Figure 6.26). MP 30.50 is uprooted on the bank beside OBCL 260, which has had some coping stones dislodged. Ballina Road LC (XCL 214) crosses the R294 as the line enters the station.

Figure 6.26: View southwest from Ballina Road (R294) LC Tubbercurry past MP30.75 & farm accommodation overbridges 260 & 259 towards Rathscanlon LC.



Tubbercurry was a block post and retains its two passenger platforms on a gentle curve. MP 30.75 is missing. The station building, goods store, sidings and loading bank were all on the up side and were demolished to make way for the town bypass, Circular Road. The signal cabin on the up side was removed in more recent years. Its lever frame was recovered and is now in use at Whitehead Excursion Station, Co. Antrim. The water tower survives at the

Sligo end of the down platform and there is a siding at the rear of the down platform. The remains of a turntable pit and the foundations of an engine shed with ash pit are west of this siding. There is ample room for a future Park & Ride here. At the time of surveying major clearing of vegetation had started at Tubbercurry station (Figure 6.27) and was completed as far as Collooney. An optic fibre cable (installed by ESAT) runs from here to Collooney Junction on the down side.

Figure 6.27: Clearance works at Tubbercurry station, September 2023



[6.6] TUBBERCURRY TO COLLOONEY

The line leaves Tubbercurry on a short embankment, passing MP 31, followed in quick succession by stone UBCL 261 across the Maiden River, Mass Hill Road UBCL 262, and farm accommodation OBCL 263 beyond MP 31.25 in a short cutting. UBCL 264 is between MP 32 and Carrawntober LC (XCL 222), which is just before MP 32.25 and a straight climb to the summit of the line passes Carrawn LC (XCL 224) just after MP 32.75. The line swings north to skirt the base of Knocknashee and continues its descent through Lissaneagh LC (XCL 227) at MP 34 and with the Ox mountains to the West passes Cloonarara LC (XCL 231) at MP 34.75.

The track is in very poor condition between MP 33.75 & MP 34. A permanent way trolley has been adapted for use as a mobile cattle feeder south of Cloonarara LC and at the crossing itself, there is an incursion in the form of a cattle pen on its north side. There are a number of wire fences and feeding troughs before Carrowmore Station (Figure 6.28) which closed in 1963 and is located shortly after MP 35.75. It is now in private ownership. The station building and single platform are on the up side. A siding served the now derelict goods store, the remains of which are on the down side and Carrowmore LC (XCL 238) is just beyond the platform.

Figure 6.28: Carramore Station looking south towards Tubbercurry, September 2023



Just beyond MP 36 which is thrown on the ground, the line crosses a stone culvert UBCL 265 and straightens out as it approaches Carramore stone overbridge OBCL 266. Following serious drainage issues here, a new drain was put under the line on the Sligo side of this bridge. The fibre optic cable was severed during remedial drainage works near MP 36.50 and repaired. The ‘before and after’ images, taken from farm accommodation OBCL 267, show a remarkable improvement (Figures 6.29 and 6.30).

Figure 6.29 View south towards Carramore bridge (266) showing a severe drainage problem before remediation.



Figure 6.30: View south towards MP 36.50 and Carramore bridge (266) after drainage work.



Perhaps the clearest section of line is around MP 37 where sheep have kept vegetation in check. The original W&LR rails are in place here for several miles (Figure 6.31).

Figure 6.31: View to northeast from embankment between MPs 36.75 and 37.00.



At Carrowloughan South LC (XCL 246) where the Cloonacool road is crossed, just before MP 38, are the remains of the only galvanised iron crossing keeper's house on the entire line. Midway between here and Carrowloughan North LC (XCL 249) at MP 38.25, there is a partial subsidence and collapse of a small embankment and drain). Before MP 38.75, a private house avenue has post and rail⁴ across the line and just beyond it is Killoran LC (XCL 253). Midway between MP 39.50 and Shancough LC (XCL255) at MP 39.75, is stone culvert UBCL 268. Descending through Cultybar wood immediately after MP 40 is stone culvert UBCL 269 and then at MP 40.25 Carrowlearn LC (XCL 259), (Figure 6.32) followed by an old ballast pit on the up side. The line then crosses an embankment and farm accommodation underbridge UBCL 270.

4 Post and rail is a very common form of wooden fencing using upright 'posts' and transverse rails made of wood.

Figure 6.32: Carrowleam LC between MPs 40.25 & 40.50 looking east.



By MP 41.00 the line has reached the outskirts of Coolaney and crosses stone culvert UBCL 271 and Leyny LC (XCL 263) to enter Leyny station at MP 41.25. The reason it was called Leyny after the barony, rather than Coolaney as one might expect, was that there were THREE Collooney stations five miles further on and it was thought adding Coolaney to the list would cause further confusion. The station, which closed in 1963, was a block post⁵. The signal cabin and loop on the upside are gone but the goods store and deteriorating listed station house on the downside survive (Figure 6.33). The old and new MPs 41.25 are thrown on the ground. A good example of the well-built stone culverts on the line goes beneath it, beyond the station (Figure 6.34) followed by Coolaney LC (XCL 265) at MP 41.50 and stone road OBCL 272 (Figure 6.35).

Figure 6.33: View northeast of Coolaney (Leyny) station from Leyny level crossing, November 2023.



Figure 6.34: Unnumbered stone culvert in excellent condition, northeast of milepost 41.25.



Figure 6.35: View northeast towards Ox Mountains through eye of road overbridge (272) between mileposts 41.50 & 41.75



Figure 6.36: Southeast side of trough girder steel Owenbeg River bridge (273) milepost 42.00.



Shortly before MP 42 the Owenbeg River is crossed by a substantial two span trough girder bridge UBCL 273 (Figure 6.36). Between MP 42 and 42.5 there is subsidence in a small embankment and further east there is a stone culvert UBCL 274, beyond which the line takes an easterly course to Collooney. Adjacent to MP 42.5 there was a trailing siding⁶ on the up side from the West of Ireland Brick and Tile Works, the ruins of which are visible. This was the only industrial siding on the line and the works had its own narrow-gauge railway. Beyond MP 42.75 there is a damaged stone culvert UBCL 275. A long straight stretch climbs past MP 43.00 near the old Kinnagrelly schoolhouse, to Bella LC (XCL 279) just beyond MP 43.50. Before passing the school there is a brick lined stone culvert UBCL 276. The 40 miles of CLÁR (Ceantair Laga Árd-Riachtanas) funded fencing (2007) ends at MP 43.

Approaching MP 44, stone culvert UBCL 277 is crossed. On the east side of an accommodation crossing between MPs 44.25 and MP 44.5 (of which there is no trace) the southern portal of an unnumbered stone culvert is compromised by a tree growing from it. There are several former ballast pits between Leyny and this point. Before the site of MP 44.5 is stone culvert UBCL 278 and Kilnarnagh LC (XCL 286) is at MP 44.75. The railway here has been trespassed upon, having being gravelled over outside the former crossing keeper's house and a lawn laid beside it (Figure 6.37).

Descending to MP 45.25 the line crosses the Coolaney road at Ardcotton LC (XCL 288). Between here and MP 45.5 an entrance to a private house has been raised and now obstructs the line. Immediately west of MP 45.75 the adjoining home owner to the north of the line, has fenced in and trespassed on railway property.

6

A siding converging with the railway in the direction of travel. The opposite is described as 'facing' where a train can diverge onto either of two routes.

Figure 6.37: Looking East from Collooney WL&WR station following vegetation clearance 2023, view towards the station house and milepost 46.00.



Collooney WL&WR or southern station is approached through a cutting with a high rock face on its north side. The station was a block post but the signal cabin is long gone as is the turnout at the east (Sligo) end of the loop. There are two passenger platforms with the station building on the up side and a derelict passenger shelter and water tower on the down side (Figure 6.37). From the station, after MP 46, the line climbs for a quarter of a mile curving 90 degrees to the north, to meet the Dublin to Sligo line at the now disconnected Collooney Junction at MP 128 (from Broadstone, Dublin), just six miles from Sligo station (Figure 6.38).

On the up side at MP 46, there was formerly a direct connection to the closed and abandoned Sligo Leitrim & Northern Counties Railway that passed the goods store (now a private dwelling) before going under the Dublin-Sligo line at Connacht's only grade separated rail crossing (Figure 6.39) Slightly further on, a final overbridge OBCL280, carries the Collooney to Ballisodare R290 road over the track bed. This abandoned connection and two bridges will not be part of the restored railway.

Figure 6.38: Site of Collooney Junction MP 46.25



Figure 6.39: The only grade separated rail crossing in Connacht is at Collooney where UBS 594A carries the MGWR over the WL&WR link to the SL&NCR.



Photographs courtesy P. Bowen-Walsh.

[6.7] CONCLUSION

The line is in reasonably good condition throughout considering that maintenance has been minimal apart from some drainage works and periodic vegetation clearance. All of the steel bridges need substantial renewal or replacement. The stone bridges and the majority of culverts are structurally sound. Vegetation currently covers some stretches but overall, the entire line can be said to be ‘shovel ready’ for clearance, ballasting and the reconstruction of a railway to modern standards. It will be necessary to deal with a number of trespass issues as identified above. The most recent clearance did not address them. Particularly striking is the footprint of the railway property itself which, were it to be acquired today, would cost many hundreds of millions.

The reconnection of the Designated Regional Growth Centre of Sligo, with the Regional Capital, Galway by rail, will provide an essential infrastructural utility, fundamental to balanced regional development.



LAYING NEW TRACK ON PHASE ONE OF THE WRC NEAR CRAUGHWELL (P. BOWEN-WALSH)



Section 7

Planning and Costing of
restoration of Claremorris -
Collooney line

[7] PLANNING AND COSTING THE RESORATION OF THE CLAREMORRIS–COLLOONEY RAIL LINE

[7.1] INTRODUCTION

The origins and current state of the rail line from Claremorris to Collooney/Sligo have been described in detail in Section 6 of this Report. We recall that the opening of the 74.5 km extension of the railway from Claremorris to Collooney Junction in 1895 by the Waterford & Limerick Railway completed the 358 km route from Waterford to Sligo. Although closed in 1975, unlike other closed lines it was not dismantled and was never formally abandoned. It remains in public ownership today, although disconnected from the operational rail network at Collooney Junction and at Claremorris.¹

Figure 7.1: Detail from Johnston's Railway map of Ireland 1900 (Claremorris-Collooney line in yellow)



As noted in Section 6 the line is officially described as ‘Not abandoned and required for future use by Iarnród Éireann’. All of the public road bridges are inspected every two years. To deter encroachment and defend against adverse possession claims, Iarnród Éireann periodically runs ‘trains’ to prove it is still a railway and records these events.²

In the McCann report of 2005, the task of restoring the WRC from Limerick to Sligo was divided into four Phases. Phase 1 was Ennis to Athenry. Phase 2 was Athenry to Tuam. Phase 3 was Tuam to Claremorris. Phase 4 was Claremorris to Collooney/Sligo. So, Phase 4 of the Western Rail Corridor extends from Claremorris on the Dublin/Westport line to Collooney on the Dublin/Sligo line, passing through Kiltimagh, Swinford, Charlestown, Tubbercurry, Carrowmore, Leyny (Coolaney) and Collooney, a total length of 74.5 km.

The reopening of this section of railway would provide a link between counties Sligo, Mayo, Galway, Clare, and Limerick with onward connections to the South (Cork and Kerry) and southeast (Tipperary, Waterford and Wexford). This would also reopen a direct route for rail freight traffic from Sligo to Waterford port which has an existing rail connection and to Foynes port which is in the process of being reopened (expected 2025).

¹ It is an anomaly on Irish Railways that imperial measurements are used for distance by the Maintenance of Way Division, when all other measures used by the railway are metric. In this Section we have made a conversion to metric.

² These ‘trains’ used to examine the disused line are actually road/rail vehicles with flanged wheels which, under the Railway Safety Act 2005, match the definition of a train

The task of preparing a comprehensive assessment of the engineering issues that will be involved in restoring the Claremorris-Collooney/Sligo line to full use will require a very detailed survey of the existing infrastructure and of the areas where remedial work will be needed. The present Section is a first attempt to initiate that process and to outline what is likely to be required. Preliminary costings are provided, based on information available from the Phase 1 restoration, suitably indexed for inflation and enhanced modern safety requirements.

[7.2] PASSENGER FACILITIES

Provision will be made for a passing loop in Charlestown with two platforms.

Figure 7.2: Looking west through Charlestown N17 level crossing just east of missing milepost 24.00.



Single platform stations will be provided at Kiltimagh, Swinford and Tubbercurry. The interchange at Collooney for passengers travelling to/from stations east of Collooney on the Sligo/Dublin line will be considered later in this Section. Station services are provided at all stations, including help points, ticket machines, passenger information, CCTV, carparking, electric car charging, bicycle parking, etc.

In the case of Claremorris, existing station facilities can be utilised. Station facilities at Kiltimagh, Swinford, Charlestown, Tubbercurry and the preferred option for Collooney South (see later in this Section) will include CCTV, lighting, ticket vending machines, help points, remote monitoring, passenger information, carparking, electric car charging, bicycle parking, etc. Passenger lifts and a footbridge will additionally be required at Charlestown Station. A pedestrian route will be provided between stations in Collooney for the preferred option (see below). In addition, there will be provision in Charlestown for a bus interchange allowing a bus connection to and from the station to Ireland West Airport Knock (IWAK).

Figure 7.3: Westport line curves right viewed from western end of Claremorris station, Collooney line on left



[7.3] PERMANENT WAY WORKS

Renewal works will consist of complete relaying of the line with continuous welded 54kg rail (CWR) laid on concrete sleepers. The line will require ballasting and tamping to standard, providing a maximum line speed of 120 km/hr.

Point layouts will be required in Claremorris and Collooney for connection to the existing network and in Charlestown for the provision of a passing loop. The loop will be of sufficient length to accommodate standard freight trains operating on the Iarnród Éireann network.

Level crossings, embankments, bridges, culverts, drainage, and fencing will all require renewal. The Claremorris-Collooney line contains at least 102 culverts and 53 bridges (over and under), a combination of stone arch and steel, road, river and cattle passes. Detailed surveys will have to be carried out to establish the actual number of structures on the line.

There is a total of 297 level crossings, ranging from crossings on national primary roads to field crossings. 24 of these crossings are on public roads and were originally attended by a gate keeper. There are also several other level crossings on public roads that were not originally attended. The preferred option for these crossings would be closure and replacement with bridges. However, this will not be possible at all locations. For this initial costing exercise, we have allowed for 25 CCTV level crossings.

There are five possible options for treating existing level crossings:

1. CCTV barriers
2. Bridges
3. Miniature Warning Lights
4. Closure
5. Amalgamation

Figure 7.4: Looking southeast at Kiltimagh station house and Thomas Street level crossing.



Detailed surveying, including traffic surveys on public roads will be required to establish what option would be most suitable for each location. It would be expected that due to changes in land ownership and usage that it will be possible to close or amalgamate many of the crossings. The required civil engineering works will be determined by specialist engineers following assessment of the permanent way and structures.

The line will require civil upgrade works of the following kind:

1. Track renewal throughout with Continuous Welded Rail (54Kg) and Concrete Sleepers.
2. Ballasting, tamping & track alignment.
3. Bridge repairs and/or reconstruction.

Figure 7.5: Single span Warren truss steel Girder Bridge crossing the Yellow River



Figure 7.6: Underside of deck of trough girder steel Mullaghanoe River bridge



Figure 7.7: An unnumbered culvert representative of many similar structures on the line.



4. Culvert repairs.
5. Drainage.
6. Embankment stabilisation works.
7. Rural stock proof fencing.
8. Urban Fencing (palisade).
9. Level crossing upgrade works (user operated).

Figure 7.8: View south through cutting towards MP 36.50 and Carramore bridge showing severe drainage problem before remediation.



Figure 7.9: View south towards MP 36.50 and Carramore bridge following after drainage work.



10. Level Crossing Closures due to land purchase.
11. Level Crossing Closures due bridge construction.
12. Provision of a passing loop in Charlestown.
13. Connection to the Westport Line at Claremorris allowing crossing of trains.
14. Connection to the Sligo Line at Collooney allowing crossing of trains.

[7.4] SIGNALLING

The Claremorris-Collooney line originally had 24 level crossings that were attended by a gate keeper. A number of these crossings could be replaced with bridges which would be the preferred option. However, there are also several other crossings on public roads not originally attended by gatekeepers that may now require upgrade to CCTV barriers. For the purpose of this exercise provision has been made for 25 remotely monitored barrier type CCTV level crossings protected by colour light signals, as already stated the actual number of CCTV level crossings will be determined following surveys.

Four of the crossings traverse national primary and secondary routes and these will require specific treatment. Miniature warning lights can be installed at lightly used public road level crossings.

Signalling equipment, including a train protection system, associated power supplies and telecommunications/transmission networks will need to be provided at Collooney, Charlestown, Claremorris and at remotely monitored level crossings. A fibre optic network, transmission system and power supplies will be required at all barrier type level crossings and signalling locations. An existing fibre optic cable originating in Ballina already runs along the line from Tubbercurry to Sligo.

The connection to the main Dublin/Westport line in Claremorris will be west of the station and will allow services to directly access the existing platforms.

Figure 7.10: Northwest view from Claremorris with Sligo line to the right



The connection to the main Dublin/Sligo line in Collooney will be north of the existing station and will not allow direct access to the existing station. The two best options for the provision of a station in Collooney are as follows:

Option 1: Provide a passing loop where the WRC connects to the main Dublin-Sligo line. The loop would extend south to the existing station where a second platform would be provided. Direct access to the existing main line station is not possible and a reversing movement would be required to access the platforms. This option would add approximately ten minutes to the journey time.

Option 2: Provide a platform and facilities, including car parking, on the WRC at the location of the old Collooney “South” station. This is a short walk from Collooney main line station, and a pedestrian route would be needed to link the two stations.

Option 2 would be the preferred solution.

The line will require Signalling and Telecommunications works listed below.

- Provide colour light signalling, train detection and point’s machines along with the required interlocking, cabling, transmission & telecommunications systems at Claremorris, Charlestown & Collooney.
- Provide a Train Protection System (TPS).
- At Collooney, the connection to the main line will be north of the existing station, a passing loop will be provided at this point.
- The connection to the main line in Claremorris will be west of the station and the existing passing loop can be utilised.
- Upgrade of twenty five level crossings to Remotely Monitored barrier type crossings with Colour Light Signalling and associated equipment.
- Miniature Warning Light systems at lightly used public road level crossings.
- Provision of a fibre network between Claremorris and Collooney (fibre optic cable already exists between Tubbercurry and Collooney).
- Provision of a telecommunications transmission system.
- Provision of Train Radio and Signal Post Telephone Communication System.
- Installation of equipment required for remote monitoring and control of barrier type level crossings.
- Installation of equipment required for the operation of the line from a signalling control point.

Figure 7.11: Turnout from the loop at Collooney Southern station looking east (left), and west (right)



[7.5] JOURNEY TIME

A journey time from Claremorris to Sligo of c.70 minutes (in the case where Option 2 at Collooney is selected) is achievable (allowing for a 120 km/hr line speed and one minute stops at all intermediate stations. That would allow a potential journey time of approximately 2 hours 10 minutes from Sligo to Galway. The breakdown of this time duration could be as follows:

- Claremorris to Kiltimagh (15.3 km) – 10 minutes
- 1 minute stop in Kiltimagh.
- Kiltimagh to Swinford (13 km) – 8 minutes
- 1 minute stop in Swinford.
- Swinford to Charlestown (11.3 km) – 7 minutes
- 1 minute stop in Charlestown.
- Charlestown to Tubbercurry (10.5 km) – 7 minutes
- 1 minute stop in Tubbercurry.
- Tubbercurry to Collooney (24.5 km) – 16 minutes
- 1 minute stop in Collooney (Option 2).
- Collooney to Sligo (10.5 km) – 10 minutes

[7.6] LEVEL CROSSINGS

Several of the level crossings traverse national primary and secondary routes. A brief outline of the options for these crossings could be as follows:

Lugatemple.

- N60 North of Claremorris.
- 100km/h road.
- Suitable for a CCTV barrier crossing.
- An underbridge (road under railway) could be a possibility at this location. However, there could be planning issues from nearby residences. The track gradient in the “down” direction leaving Claremorris could also restrict the possibility of installing a bridge.

Ballinvoher.

- N5 South of Swinford.
- 100km/h road.
- CCTV barrier crossing is possible, additional traffic calming measures would be required.
- Proximity of several residences to the crossing makes the option of a bridge very difficult but the option should be explored.

Charlestown Station.

- N17 Charlestown
- 60km/h road.
- Suitable for a CCTV barrier crossing.
- Bridge not an option.

Rathscanlon.

- N17 South of Tubbercurry.
- 100km/h road.
- CCTV barrier crossing is possible. Additional traffic calming measures would be required.
- An underbridge is a viable option at this location.

[7.7] COSTINGS

7.7.1 PRELIMINARY/ENABLING WORKS

An allowance of €25m is being included for preliminary/enabling works.

7.7.2 PASSENGER FACILITIES

Estimated costings for facilities at five stations, including platforms, CCTV, lighting, ticket vending machines, help points, remote monitoring from existing monitoring centre are included.

The provision of passenger lifts and footbridge at Charlestown Station are also included.

Car Parking and related facilities at five Stations, including CCTV and lighting, are included.

The estimated total cost for the provision of passenger facilities is €25m.

7.7.3 CIVIL (PERMANENT WAY) UPGRADE WORKS

The following items are included under this heading:

- Track renewal throughout (74.5km) with Continuous Welded Rail and Concrete Sleepers
- Provision of a loop in Charlestown with Continuous Welded Rail and Concrete Sleepers
- Provision of a loop in Collooney with Continuous Welded Rail and Concrete Sleepers
- Point work required for connection to the Westport Line at Claremorris (2 x P15 turnouts, 1 x trap points)³
- Point work required for the provision of a loop at Charlestown (2 x P15 turnouts)
- Point work required for connection to the Sligo Line at Collooney (3 x P15 turnouts, 1 x trap points)
- Existing Bridge repairs and/or reconstruction (53)
- Culvert repairs (102)
- Drainage
- Embankment stabilisation works
- Rural stock proof fencing – 68km
- Urban Fencing (palisade) – 24km
- Level crossing (user operated) upgrade works/closure – (223)
- New bridges to replace level crossings (user operated) – (50)
- Miniature Warning Lights at 23 level crossings

Total for Civil (Permanent Way) upgrade works is estimated at €173.1m.

7.7.4 SIGNALLING AND TELECOMMUNICATIONS WORKS

The following items are included under this heading:

- Provide and install colour light signalling, train detection and point's machines (3) along with required interlocking, interface, cabling, power, telecommunications (incl. train radio) and transmission system at Claremorris.
- Provide and install colour light signalling, train detection and point's machines (4) along with required interlocking, interface, cabling, power, telecommunications (incl. train radio) and transmission system at Collooney.

³ A turnout is a track layout that enables trains to move from one track to another. The P15 prefix denotes the length & curvature of the turnout, a speed limit of 40 mph (65 km/hr) maximum across the turnout for the diverging route, full line speed for the straight route. Trap points ('traps') protect the main line from unauthorised rail vehicles moving onto them from sidings or branch lines.

- Provide and install 1 CCTV LC, colour light signalling, train detection and point's machines (2) along with the required interlocking, cabling, power, telecommunications (incl. train radio) and transmission system at Charlestown.
- Provision of 24 remotely monitored barrier type level crossings with colour light signalling and associated equipment.
- Provision and installation of equipment required for level crossing monitoring and control.
- Provision of signalling control point in existing signalling centre.
- Provision of a 74 km cable route & fibre optic cable between Claremorris and Collooney.
- Allowance for intermediate train radio sites (survey dependant).
- Provision of a train protection system throughout the route from Claremorris to Collooney as per Iarnród Éireann standard.

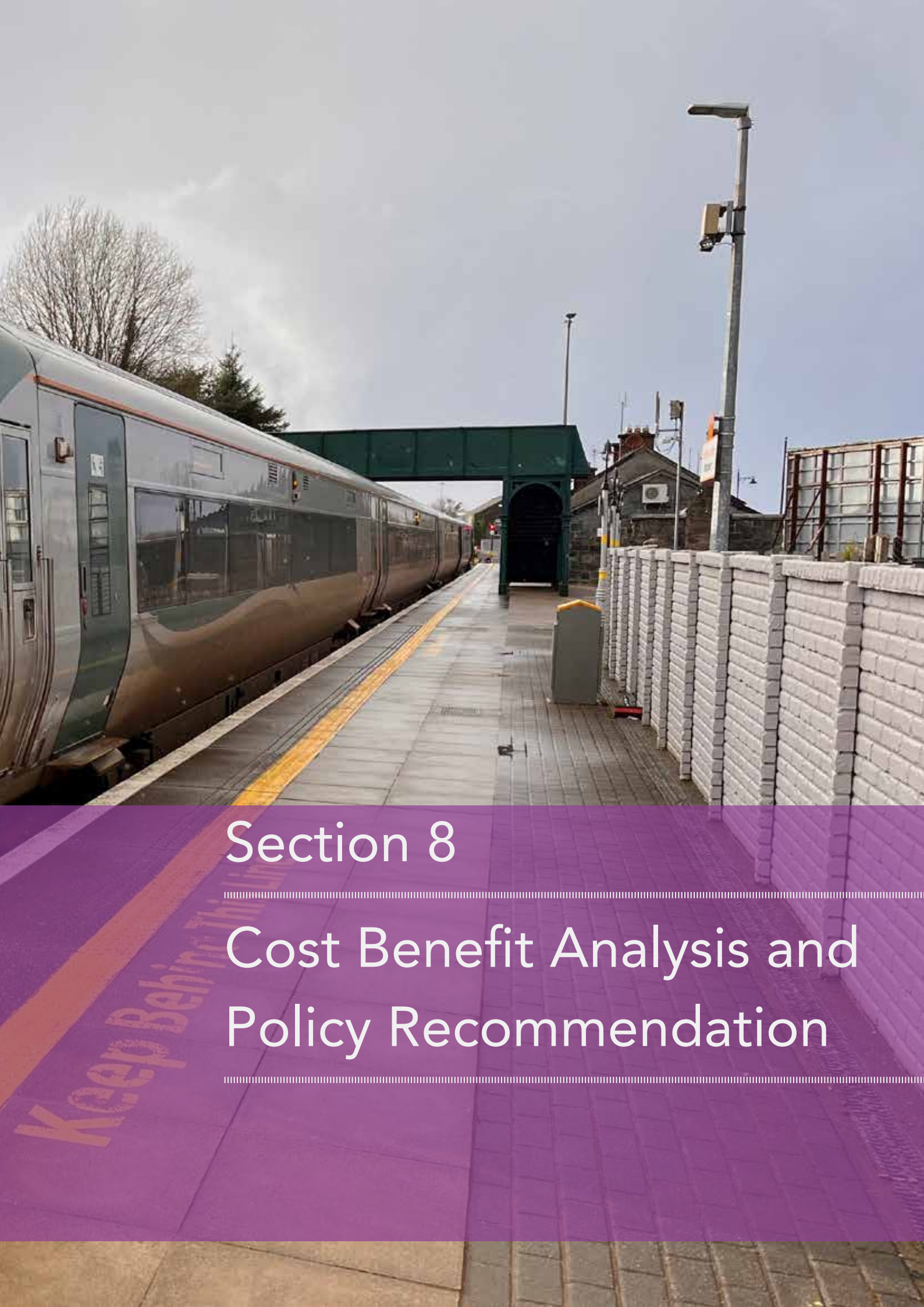
The total for Signalling and Telecommunications works is estimated as €120m.

7.7.4 TOTAL COSTS

The total Cost of Works required for the re-opening of the Claremorris to Collooney line (including preliminary & enabling works) is estimated as €343.1m. A contingency of 20% brings this to €411.72m. This amounts to €5.5m per kilometre of restored track.

It should be noted that Arup estimate the cost of a reinstated 120 kph Railway (single track) at €5.94m per route km, excluding major structures, stations and land. This would come to €445.5m for an equivalent distance to Claremorris-Collooney.



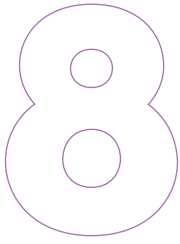


Section 8

Cost Benefit Analysis and Policy Recommendation

Keep Behind the Line

[8] BENEFITS ASSOCIATED WITH RESTORATION OF THE CLAREMORRIS-COLLOONEY LINE



[8.1] INTRODUCTION

Of the two sides of any cost-benefit appraisal of an investment project, the benefit side is always the more difficult to project. Construction costs are incurred up front and can be estimated with a fair degree of accuracy at the initial planning stage. However, revenue and other benefits are generated downstream and over the expected long lifetime of the investment asset. These are more difficult to project. For example, the availability of a new resource—a bridge, a restored rail service, etc.—is likely to provide some clear and transparent benefits, but over time, the new resource is likely to alter the behaviour of potential users in a way that is complex and can be difficult to predict.

In the case of restoration of the Claremorris-Collooney line of the WRC, the capital costs—by far the largest cost element—are incurred in the early years, while the revenue and other benefits are generated over a much longer period that only commences when construction is complete and actual operations start up. During those future years the world will face a massive challenge to slow down and reverse climate change brought about in large part by anthropogenic CO₂ emissions. This is likely to have a significant impact on the way that we travel by air, by sea, and on land. On land, there will need to be a transfer from modes of travel that use fossil fuels heavily and in a profligate way, to modes that minimise fossil fuel use and eventually shift to the use of electricity generated by renewable sources. These benefits, although difficult to quantify in strictly monetary terms, must be taken into account correctly in a situation where future risk could take an existential character.

In this section we address the challenge of quantifying the benefits that will be associated with the restoration of the WRC network link from Claremorris to Collooney/Sligo. An important part of these benefits will be the possibility of switching an element of current road transport to rail, and the revenue from passenger and freight operations that could be generated to support the rail services. But more importantly, the provision of a new, efficient and cost-effective transport mode based on a restored rail line that links the towns located on the north-south axis of the Atlantic Economic Corridor (AEC) is also likely to generate considerably greater interaction between these towns than is manifest at present. The lack of high quality north-south transport infrastructure in this region has served to isolate towns both from their neighbouring towns and from them and other towns spread out along a north-south axis.

“The provision of a new, efficient and cost-effective transport mode based on a restored rail line that links the towns located on the north-south axis of the Atlantic Economic Corridor (AEC) is also likely to generate considerably greater interaction between these towns than is manifest at present.”

To carry out a detailed evaluation of project benefits from scratch would be a task requiring more resources than are currently available. Indeed, there is some evidence that it was also a task that exceeded the resources available to the consultants Arup when they undertook their all-island strategic review of the entire Irish rail system. More specifically, there is not sufficient information available from the Arup published material to understand to what extent and how Arup addressed these issues in the AISRR. The astonishing fact that the disused Claremorris-Collooney line is not even mentioned in their Report indicates that no formal analysis was carried out on its restoration.¹ Consequently, we are obliged to follow a

¹ As noted in Section 2, Arup proposed the construction of an entirely new rail line linking Galway and Sligo, but discarded it on grounds of low return on investment.

more qualitative approach but try to address the issues that would have to be addressed in a full demand forecasting exercise.

In Section 8.2 we examine the question of forecasting revenue benefits from passengers on a restored Claremorris-Collooney line.² Here, it must be kept in mind that when this line becomes operational for passengers, it will complete a much longer network extending up and down the west coast and providing quicker rail links to the cities of Galway and Limerick and Sligo town itself, one of the largest in the N&W region.

In Section 8.3 we turn to the range of other benefits of travel by rail compared to other modes. These include:

- “noise benefits”,
- “local air quality benefits” pertaining to emissions of oxides of nitrogen (NO_x) and particulate matter (PM) emitted by petrol and diesel engines,
- “greenhouse gas benefits”, i.e., the extent to which the operation of the rail link is likely to lower or raise emission of CO₂, a factor that is central to the requirement of slowing down and reversing climate change,
- “physical activity benefits” associated with the restored rail link.
- “collision’ benefits”, i.e., a road safety benefit for reduced collisions based on the CSO’s national accident rates per kilometre travelled
- “net transport user benefits” associated with ‘time’ savings and ‘travel cost’ savings.
- possible impacts of restoration of the rail link on the public finances, i.e., implications for future revenue from direct and indirect tax revenues.

In Section 8.4 we examine the situation of rail freight in Ireland and the additional role that a restored WRC could play. Having considered the above range of benefits, we then step outside the narrowly focused CBA methodology in Section 8.5 in order to draw on the previous discussion in Section 3 on the economic development rationale for restoring the WRC. The historical data on existing modes of travel in north Mayo and Sligo may not be a good indicator of how these modes would shift if the entire WRC was restored to operation. Specifically, NTA journey data may not always provide a good basis for projecting the consequences of a radical transformation of the public transport system in a region like Mayo in the centre of the AEC and one that needs to be considered in a regional development context over a very long time scale. Such consequences are difficult to quantify within strict CAF guidelines, but do suggest that there is very likely to be an upside to our analysis in terms of higher passenger numbers and faster growth. Section 8.5 summarises our main points and concludes.

[8.2] PASSENGER REVENUE

8.2.1 INTRODUCTORY REMARKS

Annual passenger revenue is the product of rail travel demand (journeys per year) multiplied by the average fare paid per journey. Estimating travel demand on a restored Claremorris-Collooney line must be seen in the context of a fully restored and operating Limerick/Galway to Claremorris line and would ideally be based on a bespoke travel demand model. Such a model would describe the available travel mode choices in the area of interest (i.e., as between car, bus/coach, or train) according to a series of variables such as journey time, convenience and cost. It could be used to forecast future travel mode choices based on projected population growth and other indicators, and how travel demand is likely to shift between existing modes or to an entirely new mode i.e., rail.

The kinds of explanatory variables typically affecting the passenger choice for each travel mode are shown in Table 8.1.

Table 8.1: Travel demand model variable inputs

PRIVATE CAR	BUS/COACH	RAIL
Walking Time To/From Car	Walking Time To/From Stop	Walking Time To/From Station
In-Vehicle Travel Time	Waiting Time at Stop	Waiting Time at Station
Vehicle Operating Cost	In-Vehicle Travel Time	In-Vehicle Travel Time
Vehicle Parking Cost	Interchange Penalty (if applicable)	Interchange Penalty (if applicable)
	Ticket Fare	Ticket Fare

Once the rail travel demand model is developed, rail passenger demand numbers would be determined for a specific initial year of operation of the restored rail link. A ‘ramp-up’ of demand over a three to five year period is usually assumed in order to account for the time required for passengers to adjust their travel patterns to the newly available transport mode, with the full projected demand being realised only when the ramp-up period ends. Other things being equal, subsequent demand would usually be assumed to expand broadly at the same rate as the underlying growth of population in the region.³ Ticket revenue would then be estimated by establishing and assigning fare zones to each modelled origin/destination flow on the relevant rail network.

In section 8.2.2 we review how the Consultants Arup carried out their analysis and projection of passenger demand as a result of improvements to existing rail lines, restoration of currently disused lines, and construction of entirely new lines in the course of their All Island Strategic Rail Review (AISRR). Our focus is primarily on the WRC extension from Claremorris to Collooney since our objective is to examine how the very specific developmental role envisaged for rail improvements in the N&W region were actually handled by Arup in the course of their research and whether that report produced a credible and robust evaluation of the benefits of restoring the Claremorris-Collooney rail link.

³ For example, if it became a national priority to switch as much road traffic as possible to rail, demand would increase faster than population growth.

From the analysis contained in Section 2, we already know that Arup ignored the existence of the currently disused Claremorris-Collooney rail link and explored a series of conjectural new rail lines, one of them linking Galway to Sligo. So, in effect, no cost-benefit analysis of restoring the Claremorris-Collooney line to operational use was ever carried out.⁴ In the absence of access and resources to operate sophisticated demand planning transport models such as used by Arup, in sub-section 8.2.3 we carry out a fairly simple exercise to produce a judgement of the likely usage and benefits of a restored Claremorris-Collooney line as a direct link from Sligo to Galway as the final element in a fully restored WRC.⁵

8.2.2 ARUP ON PASSENGER DEMAND FORECASTING

Rail travel times:

The Arup passenger demand analysis starts off with their “Cube Model”. This model is used to generate estimated journey times by rail to and from every station included in each of their “packages”. As noted in Section 2, the four “regional and rural” packages (3a, 3b, 3c and 3d) were analysed in isolation. Instead, they were analysed jointly with the preferred inter-city package 2a that dealt with rail linkages between the seven cities on the island. The output of the Cube Model is the Generalised Journey Time (GJT) between all relevant station pairs, and consists of the following three components:

T = station-to-station journey time (including interchanges)

S = Service interval penalty

I = Sum of interchange penalties

where

$$\text{GJT} = \text{T} + \text{S} + \text{I}$$

Inputs to the Cube Model consist of frequencies of trains, travel times between stations and stopping patterns. Outputs are the GJT and its three components between all relevant stations. The role played by the generated GJTs is important since it is one of the drivers of passenger demand. High GJTs will reduce demand if other available non-rail modes are faster. Low GJTs will increase demand if other available modes are slower. The amount of increase or decrease in passenger demand will be determined by “elasticities”, i.e., parameters in the forecasting model that tell us how much a specific change in GIT will affect passenger demand.

4 Such analysis may have been carried out by Arup, but if it was, it was not included in the Arup Report material that was placed in the public domain.

5 The line from Athenry to Claremorris is currently in the process of being prepared for restoration. Since progress on restoring the Claremorris-Collooney link is likely to take some time, the obvious way to evaluate its benefits is in the context of a fully restored and fully operating WRC that comes north as far as Claremorris..

The passenger forecasting model:

Two different approaches to forecasting passenger demand are used by Arup. The first approach is used where there are existing operational stations and already established travel flows. The second approach is used for new stations, where there are no such travel flow data available. Arup refer to the first approach as the Passenger Demand Forecasting Handbook (PDFH) which was developed for use in Britain. The assumption was made by Arup that conditions in Ireland are sufficiently similar to those in Britain that the PDFH can be transferred to and applied in Ireland.⁶

The approach taken by Arup is to model passenger demand for existing operational stations in terms of a series of driving variables. These are as follows:

1. Population (Pop)
2. Employment (Emp)
3. GDP/capita (GDP/C)
4. Car travel time (CTT)⁷
5. Car operating costs (COC)
6. Generalised Journey Times (GJT)

So, the forecasting model for existing stations is:

$$\text{Passenger Demand} = f(\text{Pop}, \text{Emp}, \text{GDP/C}, \text{CTT}, \text{COC}, \text{GJT})$$

Data for passenger demand in the year 2019 were assembled from annual ticketing data provided by Iarnród Éireann, where approximations were used to fill in for any missing origin and destination information on tickets. These data were then used to calibrate the forecasting model in the year 2019 and to prepare it to generate passenger demands out to the year 2060, i.e., some 20 years beyond the envisaged opening of the network changes that are recommended.

Based on historical survey data, aggregate passenger demand was segmented into three categories:

1. Commuting
2. Business travel
3. Leisure

Projecting the drivers of passenger demand:

The challenge faced by Arup in using the PDFH methodology lay in projecting the six variables that drive passenger demand, as listed above, from 2019 to 2060. Some are slightly less difficult to project than others. For example, population data can be projected with an acceptable degree of confidence some decades into the future, based on birth and death rates and likely migration flows. Car operating costs in the future will depend on the price

⁶ The implications of the assumption that the British PDFH methodology can be transferred to Ireland for the analysis of Irish conditions are serious, but no justification or testing of the assumption is contained in the Arup AISRR material placed in the public domain.

⁷ Curiously, no account was taken by Arup of bus travel times.

of fossil fuels and of electricity, and are assumed by Arup to drift downwards over time. Car time projections will depend on congestion and/or other restrictions that may be placed on the use of private cars, and are assumed to drift upwards over time. Generalised Journey Times (GJTs) will depend on the exact nature of the rail line being examined and any proposed service improvements, but can be projected with a reasonable degree of robustness when these factors are decided. However, GDP and employment are extremely difficult to forecast even five years out, and impossible to project over longer time horizons other than in a very conjectural sense.⁸

The GDP and employment projections actually made by Arup are simplistic and crude. Furthermore, they are projections for the aggregate national economy and say nothing about the likely evolution of regional economies, even at the level of the three major regions: E&M, South, and N&W.⁹ Consequently, they paid no attention to differential regional growth or to the manner in which rail improvements could assist in rebalancing regional growth across the Irish regions.¹⁰

Projected demand for existing stations

In keeping with the Arup terminology used in the cost-benefit analysis described previously in Section 2, we show their projected passenger numbers for Packages 2a and 3a,b,c,d and e.¹¹

Table 8.2: Arup Passenger projections for existing stations (annual, millions)

Package no.	Package	2019	2060
2a	Higher speed inter-city plus decarbonisation	99.54	150.24
3a	Package 2a plus Northern Ireland	101.63	152.86
3b	Package 2a plus West Coast	100.00	150.99
3c	Package 2a plus South Coast	100.41	151.66
3d	Package 2a plus North Midlands Coast	100.77	152.02
3e	Package 2a plus cull of 3a,b,c and d	118.60	179.26
3a minus 2a	Pure Northern Ireland	2.09	2.62
3b minus 2a	Pure West Coast	0.46	0.75
3c minus 2a	Pure South Coast	0.87	1.42
3d minus 2a	Pure North Midlands	1.23	1.78
3e minus 2a	Pure culled Packages 3a,b,c and d	19.06	29.02

8 The only formalised longer term forecasts for the Irish national economy are those prepared by the ESRI and published in their Medium-term Review. A time horizon of five years is taken. However, this ESRI publication has not been updated in recent years.

9 The excuse offered by Arup is that such regional data are not available in Ireland. But one would have expected the commissioning agency, the Department of Transport, to provide better guidance to the consultant in the context of Project Ireland 2040 and the three Regional Economic and Spatial Strategies (RSEs), where the rebalancing of regional development is stated as a policy priority.

10 We note in passing that Arup's GDP and employment projections for Northern Ireland (proxied by UK aggregate data) are very pessimistic when compared to the projections for Ireland. For example, NI population is assumed to flatline from 2019 to 2060, compared to 55.6% growth in Ireland. Employment numbers in NI are assumed to grow by 19.5% between 2019 and 2060, compared with 55.6% for Ireland.

11 Recall that Package 2a was the higher speed inter-city spine, including decarbonisation. Packages 3a,b,c and d added the four "regional and rural" options. Package 3e was 2a plus the best options culled from Packages 3a, b, c and d.

The implication is that the initially proposed line improvements for, say, the West Coast (in Package 3b) would produce an increased annual demand for passengers in 2060 of 300,000 per year more than the base year (2019) demand of 460,000. However, when all four initial “regional and rural” packages were culled, together they would generate demand for an increase of about 10 million passengers per year by 2060.

The logic underlying these projections is difficult to interpret. The projections were generated purely by the six “driving” variables listed above and took no account of capital and operating costs of the type that feed into the cost-benefit analysis that was previously examined in Section 2. Hence, demand generated by the total of the “isolated” regional and rural packages 3a,b,c and d should logically have been higher than that generated by the aggregate “isolated” culled version of the combined packages 3a,b,c and d (i.e., the “isolated” package 3e), since 3e is a sub-set of the combined set of packages 3a,b,c and d. Yet Table 8.2 suggests that while “3e minus 2a” will generate passenger demand of over 29 million by 2060, the aggregate of the “unculled” 3a,b,c and d minus 2a will only generate demand of 6.6 million by 2060. If our interpretation of the Arup analysis is correct, there appears to be an inconsistency in these results, pointing, perhaps, to incorrect handling of the regional and rural packages.

Projected passenger demand for new stations

For projecting passenger demand for new stations, Arup use a different approach: The Trip Rate Model (TRM), described as follows:

TRMs are based on the gravity model in which demand for rail travel between the new station and the seven cities is a function of the population at the new station and the separation of the two stations. The separation variable used is Generalised Journey Time (GJT)

To make the problem more tractable, Arup only modelled trips from new stations to and from each of the seven cities, since the base data showed that 71% of trips at rural town stations were to and from the seven cities. The missing 29% of trips were “grossed up” using an adjustment factor, the nature of which is unexplained. Such a model can only be calibrated using actual passenger data. So, a database was prepared for 95 rural and town existing operational stations and the model estimation data were as follows:

1. Trips made in 2019 to and from the 7 cities from each selected existing station.
2. Resident and employed populations at specified distances between 1 and 20 km from existing stations.
3. GJTs to and from the 7 cities for each selected existing station.

In operationalising the Trip Rate Model, the following population data were used for new stations on the WRC (taking the Galway, Mayo and Sligo new stations as examples), where the third column of Table 8.3 contains the most recently published CSO Census data for the relevant towns:

Table 8.3: Population in new station catchment areas

	Population	Population	Census 2022
New Station	2 km catchment	5 km catchment	Town population
Tuam	7029	9259	9647
Kiltimagh	837	1832	1232
Charlestown	754	1438	1172
Tobercurry	1069	2506	2307

We note that the population data used by Arup for the 2km catchment area are considerably smaller than the actual town population data as published in the 2022 Census of Population. This suggests that the larger 5km catchment area population may also be understated, with the implication that the passenger forecasts subsequently generated by the Trip Rate Model may also be understated.

Equations of the following general form were calibrated using the above model estimation data from existing stations:

$$T = a_1 + a_2 \text{ POP} + a_3 \log(\text{GJT})$$

where T is the annual number of two-way trips from the selected existing stations and the 7 cities, GJT is measured in minutes and POP is a population measure. Having calibrated these models on data from existing stations, they were then applied to project passenger data at new stations, as defined in the Packages 2a, 3a,b,c,d and e.

A radius of 2km and 5km from the new station were selected. Some sample outputs from the model for the West Coast Package (3b) are shown below.

Table 8.4: Projected annual rail trips: selected new stations (thousands)

New Station	3b	3e	min 2019	max 2019	min 2060	max 2060
Tuam	191	197	190	210	310	340
Kiltimagh	64	0	50	70	90	110
Charlestown	49	0	20	50	40	90
Tobercurry	52	0	30	60	50	90

Note that all stations on the currently disused line linking Claremorris to Collooney are excluded from Package 3e (except for the existing mainline stations at either end (i.e., Claremorris and Collooney). So they drop out of the new station forecast. It is not clear from the published Arup report what kind of line was envisaged by Package 3b that went through Kiltimagh, Charlestown and Tobercurry, other than vague references to a “new line”.

These projected passenger numbers are very low and for Kiltimagh, Charlestown and Tobercurry would represent a maximum projected daily trip rate of 300, 250 and 250 respectively. In the case of Tuam, where its projected population (using Arup growth rates) could be 15,000 by 2060, the maximum daily projected trip rate would be 930.

Some conclusions on the Arup passenger forecasts

The conclusion we reach after examining how Arup projected passenger demand from 2019 out to 2060 is that the methodology may have been appropriate for projecting inter-city demand or demand between existing stations on lines that connected the regions with the seven cities and had existing heavy usage. However, the model as applied to analysing new stations that connected regions and adjoining counties with each other and where no rail service had operated for decades, has probably greatly understated both the potential passenger demand and the wider regional development benefits. The Trip Rate Model appears to have been based on town population data that are low and incorrect. The 2km and 5km catchment areas are far too small in a regional setting where towns are separated from each other by greater distances. Unlike in large urban areas, where many alternative modes of transport are available and population is more concentrated, people living in the N&W region will seek out the nearest railway station and are prepared to drive considerable distances within their region in order to avail of long-distance rail travel.

Consequently, it is not surprising that Arup, on the basis of their passenger demand modelling, effectively wrote off almost all of the contents of their initial regional and rural packages and, in the case of the WRC, ended up with merely proposing some improvements to the existing Limerick-Galway line and – grudgingly – the restoration of the Athenry-Claremorris line for freight use.

“The (Arup) model as applied to analysing new stations that connected regions and adjoining counties with each other and where no rail service had operated for decades, has probably greatly understated both the potential passenger demand and the wider regional development benefits. The Trip Rate Model appears to have been based on town population data that are low and incorrect.”

8.2.3 ESTIMATING LIKELY PASSENGER DEMAND FOR A RESTORED CLAREMORRIS-COLLOONEY LINE

The task of projecting likely passenger demand for a restored rail line linking Claremorris to Collooney should not be approached in the manner used by Arup. This region does not have any large metropolitan population agglomerations; its towns are relatively small and are scattered over the region; at present, they are poorly connected to their hinterlands on a north-south axis; bus services are available but the time intervals between buses can be very long. Existing rail services, where available, provide links on an east-west axis rather than on a north-south axis and consequently, shut the region off from the regional city in Galway and from Sligo, the largest town in the region. Consequently, car ownership rates are high and travel by car within the region is a necessity and will probably remain a necessity pending a radical revision of public transport facilities.

“To formulate a realistic view of the potential of rail travel in north Mayo and south Sligo we need to break out of conventional transport modelling and think in terms of ambitious, targeted regional development initiatives.”

Where there is an existing rail service and alternative public transport modes are available, it is possible to design and calibrate transport models in order to gauge how demand is likely to evolve in the future. However, use of such data taken from existing rail lines in the N&W region is likely to give a very pessimistic view of future potential since the calibrating data will have been conditioned by the poor quality of the existing rail service and the depressed nature of the local economy due to its peripherality and poor transport infrastructure. To formulate a realistic view of the potential of rail travel in north Mayo and south Sligo one has to break out of conventional transport modelling and think in terms of ambitious, targeted regional development initiatives.

We start from the fact described earlier in Section 3 that the growth rates of the towns that lie along the Claremorris-Collooney line have been depressed and are much lower than the growth rates of towns in central and southern Mayo. To base passenger projections on these low populations and sluggish growth patterns (see Section 3, Tables 3.2 and 3.3) is equivalent to making an assumption that they will continue to exhibit slow growth out to the year 2060. The direction of causality is important here. The slow growth is due in large part to the peripherality caused by poor transport infrastructure. A key role to be played by a restored Claremorris-Collooney line would be to reduce the peripherality of the region and to permit its towns to grow at the same rate as the central and southern Mayo towns.

“A key role to be played by a restored Claremorris-Collooney line would be to reduce the peripherality of the region and to permit its towns to grow at the same rate as the central and southern Mayo towns.”

The next issue is that the adoption by Arup of British rail forecasting models for use in an undeveloped region like NW Mayo and Sligo fails to take account of the transport needs of people living and working in the region. Unlike densely populated urban areas where there are very frequent bus and tram services, in Mayo and Sligo population is dispersed in small towns over a wide area, population density is low, and travel by car has come to dominate transport modes simply because there are no good alternatives.

Difficulties in accessing the regional capital in the south (Galway), and the largest town in the north of the area (Sligo), have distorted travel patterns for many decades. The existing rail services direct people to Dublin in the east, a factor that almost certainly has impacted negatively on the growth of both Galway and Sligo. Data from Rail Tours Ireland suggest that the absence of any rail link travelling northwards from Galway city deflects tourists to the south, if they are travelling from Dublin, and deflects them to Dublin in the east, if they are travelling northwards up from Shannon and Limerick. Consequently, the N&W region loses out on increasingly popular rail-based tourism.

The recently created Atlantic Technological University (ATU) to service third level education in the N&W region has constituent campuses that stretch from Letterkenny in Donegal, to Sligo, Castlebar and Galway in the south. If these different campuses are to be able to operate in an integrated way with each other rather than as an isolated, stand-alone mode, the

ability of students to commute up and down the north-south axis will be necessary. The isolation of the Letterkenny campus is a very special case, along with the rest of Donegal, but is currently outside the remit of this report¹²

A final issue concerns the long time horizon over which the Irish rail network strategic review was carried out. It would not be an exaggeration to characterise the Arup approach to the N&W region as one where the currently depressed and lagging state of the economy of the region virtually ensures that capital expenditure is unlikely to exhibit a benefit-cost ratio greater than unity (i.e., breakeven). Indeed, our analysis of Arup results in Section 3 suggested that the BCR for the initially proposed rail projects in the Western region was as low as 0.1. When the initial Arup proposals in the West region were culled, a vital factor that had the potential to dynamise the economy was removed. In that case, the lagging region will simply continue to lag. The circularity of this logic flies in the face of the policy objectives set out in PI 2040 and the RSES of the N&WRA, where the goal of greater regional development balance was articulated.

If we make the reasonable assumption that the causes of underdevelopment in the N&W region are partially due to poor transport infrastructure, it follows that if the infrastructure is improved, there would be nothing to prevent the currently slow-growing towns of north Mayo and South Sligo from achieving population growth rates similar to the fast-growing towns of central and south Mayo and north Galway. In Table 8.5 we show actual and projected population data for the six towns that would be on the restored Claremorris-Collooney/Sligo line.

Table 8.5: WRC town population projections to 2060

Town	Census 2022	Arup 2060	Projected 2060
Kiltimagh	1,232	1,639	2,957
Swinford	1,459	1,940	3,502
Charlestown	1,172	1,559	2,813
Tobercurry	2,307	3,068	5,537
Collooney	1,797	2,390	4,313
Sligo	20,608	27,409	49,459
Total	28,575	38,005	68,580

In Table 8.5, the column headed “Census 2022” shows the town populations taken from the recent census. The column headed “Arup 2060” is the population for these towns if they experienced the national population growth rate that Arup assumed for the period 2019 to 2066 (i.e., 33% in total). The column headed “Projected 2060” was derived by taking the 2022 census data and growing it by an average of the total growth of the four Mayo towns for the 31 year period 1991 to 2022 (i.e., 140% in total).

What this suggests is that if the listed towns were to experience the kind of growth for the 41 year period 2019 to 2060 that the south Mayo towns actually experienced over the 31 year period 1992-2022, the whole demographic character of this region would change dramatically. Using the Arup national growth rate, on the other hand, would produce far lower population projections. The consequences for projecting passenger demand of using the higher growth population projection would be considerable and would move any cost-benefit analysis closer to breakeven, even on a narrow, strictly monetised basis.

12 Arup recommended the construction of a new rail link between Letterkenny and Derry City. However, the isolation of the Letterkenny campus from the other ATU campuses in the south of the N&W region is likely to present a challenge for the ATU management.

There is no certainty that the provision of better transport infrastructure and, specifically, the restoration of the Claremorris-Collooney line, would actually produce this kind of dramatic turnaround in the towns that would be served by the line. However, if the transport access infrastructure is not upgraded, there is far greater certainty that the region will continue to lag even further behind the more developed eastern and southern regions and that the north Mayo and South Sligo towns would continue to grow very slowly.

“If the transport access infrastructure is not upgraded, there is far greater certainty that the region will continue to lag even further behind the more developed eastern and southern regions and that the north Mayo and South Sligo towns would continue to grow very slowly.”

The relatively slow growth of the population of Sligo town presents a challenge to plans for regional development that needs to be addressed. When Sligo town was selected as one of three designated Regional Growth Centres in the N&W region by PI 2040, it was chosen on the basis of its present population. The three designated towns – Letterkenny, Sligo and Athlone – were the only ones with populations over 20,000. However, their population growth between the census of 1991 and 2022 has been very different for the three towns, as shown in Table 8.6.

Table 8.6: Population growth in designated Regional Growth Centres

Town	1991	2022	% growth
Letterkenny	10,726	22,549	110.2
Sligo	17,964	20,608	14.7
Athlone	15,358	22,869	48.9

These data beg the question as to why the growth of Sligo town over the 31-year period 1991 to 2022 was 7.5 times lower than Letterkenny and 3.3 times lower than Athlone. Distance from larger population agglomerations is one factor. Poor transport infrastructure is another. There is not much that one can do to address the first factor, other than to ensure that the towns in Sligo’s hinterland themselves become dynamic and serve to complement and reinforce the growth of Sligo. As for the second, a restored rail connection from Sligo to the south and improvements to the N17 would transform the growth potential of all towns in this region and provide the opportunity for Sligo town to become a genuine regional growth centre with the possibility of doubling its population to 40,000, promoting it to the ranks of the largest towns in Ireland.¹³

With faster growth in Sligo and renewed dynamism in the smaller Mayo and Sligo towns, the Mayo/Sligo element of the N&W region would become a series of interlinked population centres with good transport and communication links, which would replicate many of the benefits of a conventional city agglomeration. Examination of the enterprise sectors in Mayo and Sligo, as discussed in Section 3, suggests that this region, even in its currently lagging state, is capable of generating and sustaining a wide range of entrepreneurial dynamism.

13

The top five largest towns in Ireland are all in Leinster: Drogheda, Dundalk, Swords, Navan and Bray. They are also the only ones with populations over 30,000 people.

“A restored rail connection from Sligo to the south and improvements to the N17 would transform the growth potential of all towns in this region and provide the opportunity for Sligo town to become a genuine regional growth centre with the possibility of doubling its population to 40,000, promoting it to the ranks of the largest towns in Ireland.”

If we take the Local Electoral Areas in Sligo, Mayo and Galway, the population distribution at the time of the 2022 census is shown in the first column of Table 8.8. The second column shows the population projection for 2060, using the Arup assumption for national population growth (i.e., 33% increase between 2019 and 2060. Column 3 shows the population projection using a conjectural 100% growth rate assumption.¹⁴ Before dismissing such a high population growth assumption, it is useful to examine the population density in all EU member states and to realise that Ireland lies 20th out of 27 in the population density ranking with 74 persons per sq. km, well below the EU average of 106 (Table 8.7).¹⁵ The Irish national population density would be 98 persons per sq. km in 2060 based on the Arup projection rate of 33% and 147 persons per sq. km based on the conjectural 100% growth projection. Even at the 100% growth projection, this would place Ireland at the same population density as Denmark is today.

The purpose of these conjectural population projections is to stress the point that future Irish population growth is very likely to be very different from growth in the more developed and already densely populated EU member states. We need to plan for that now. In the coming decades our population is likely to grow at rates that have not been experienced previously, and that growth is likely to be spread more evenly over the national territory than it has in past decades if policy makers take regional development seriously. The strategic planning of the rail system in Ireland needs to recognise this fact and should not be based on the kind of marginal projections used by Arup that take no account of the current state of the economies of the regions and of the priority assigned in official planning strategies to developing these regions in a more balanced way.

If a forward looking approach to the strategic planning for future rail infrastructure in the N&W region is not adopted, an approach that simultaneously anticipates faster growth and assists it, investment in rail infrastructure will remain difficult to justify. Any assumption of the kind made by Arup that the N&W will continue to experience low population growth and will lag further behind the more developed eastern and southern regions, will simply become self-fulfilling.

14 Recall that six Mayo towns experienced growth higher than 100% in the 31 year period 1991 to 2022 (see Table 3.1 in Section 3).

15 The population density of the United Kingdom in 2022 was 276 persons per sq. km, that would rank it fourth in the EU list, behind Belgium if the UK was still in the EU.

Table 8.7 Population densities in EU member states

RANK	MEMBER STATE	POPULATION	AREA KM ²	DENSITY KM ²
1	Malta	542,051	316	1,715
2	Netherlands	17,811,291	37,378	477
3	Belgium	11,754,004	30,667	383
4	Luxembourg	660,809	2,595	255
5	Germany	84,358,845	357,569	236
6	Italy	58,850,717	302,079	195
7	Denmark	5,932,654	42,925	138
8	Czech Republic	10,827,529	78,871	137
9	Poland	36,753,736	311,928	118
10	Portugal	10,467,366	92,227	113
11	Slovakia	5,428,792	49,035	111
12	Austria	9,104,772	83,878	109
13	France	66,070,697	638,475	107
14	Slovenia	2,116,792	20,273	104
15	Hungary	9,597,085	93,012	103
16	Cyprus	920,701	9,253	100
17	Spain	48,059,777	505,983	95
18	Romania	19,051,562	238,398	80
19	Greece	10,394,055	131,694	79
20	Ireland	5,194,336	69,947	74
21	Croatia	3,850,894	56,594	68
22	Bulgaria	6,447,720	110,996	58
23	Lithuania	2,857,279	65,284	44
24	Estonia	1,365,884	45,336	30
25	Latvia	1,883,008	64,586	29
26	Sweden	10,521,556	447,424	24
27	Finland	5,563,970	338,411	16
	European Union	448,387,872	4,225,134	106

Table 8.8 Population in Sligo, Mayo and Galway LEAs

SLIGO	2022	ARUP 2060	PROJECTED 2060
Ballymote-Tobercurry, Sligo	28,449	37,837	56,898
Sligo-Drumcliff, Sligo	18,817	25,027	37,634
Sligo, Strandhill, Sligo	22,932	30,500	45,864
MAYO			
Ballina, Mayo	25,858	34,391	51,716
Claremorris, Mayo	29,336	39,017	58,672
Castlebar, Mayo	32,080	42,666	64,160
Belmullet, Mayo	12,683	16,868	25,366
Westport, Mayo	19,947	26,530	39,894
Swinford, Mayo	18,066	24,028	36,132
GALWAY			
Conamara North, Co. Galway	18,053	24,010	36,106
Tuam, Co. Galway	35,544	47,274	71,088
Ballinasloe, Co. Galway	29,855	39,707	59,710
Loughrea, Co. Galway	25,498	33,912	50,996
Athenry, Oranmore, Co. Galway	35,105	46,690	70,210
Gort-Kinvara, Co. Galway	25,923	34,478	51,846
Conamara South, Co. Galway	23,345	31,049	46,690
Galway City West	26,618	35,402	53,236
Galway City Central	29,705	39,508	50,410
Galway City East	28,091	37,361	56,182
TOTAL POPULATION	485,905	646,254	971,810

[8.3] OTHER ASSOCIATED BENEFITS

8.3.1 INTRODUCTION

The Department of Transport's Common Appraisal Framework (CAF) sets out various methods that attempt to quantify the monetary value of other associated benefits of transport projects, including reduced noise, improved local air quality, reduced emissions of greenhouse gases (GHGs), physical activity benefits, reduced collisions (safety), net transport user benefits, and direct and indirect impacts on public finances. For the reasons described previously in this report, it is not possible to carry out detailed quantitative analyses of these benefits for the Claremorris to Collooney/Sligo line due to a lack of up-to-date and reliable data. However, the CAF also supports (at Section 4.5) the production of a Project Appraisal Balance Sheet. The Project Appraisal Balance Sheet includes an element where qualitative statements are made regarding the benefits. This section intends to evaluate each environmental factor qualitatively in that way, making conclusions only whether the net impact is positive (i.e., a benefit), or negative (i.e., a disbenefit), and where possible, whether the magnitude of the impact is significant.

8.3.2 LOCAL AIR QUALITY BENEFITS

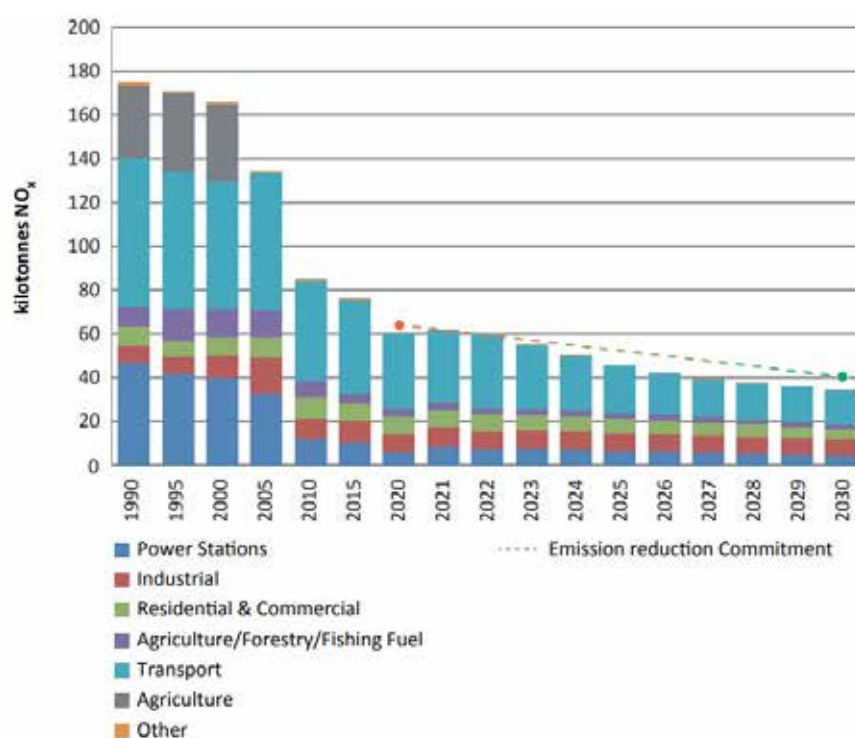
This factor pertains to emissions of oxides of nitrogen (NO_x) and particulate matter (PM) emitted by petrol and diesel engines.

8.3.2.1 NITROGEN OXIDES (NO_x)

Emissions of nitrogen oxides (NO_x) contribute to acidification of soils and surface waters, ground level ozone formation (exacerbating asthma), and excess nitrogen or saturation in terrestrial ecosystems. Ireland's national emission reduction commitment for NO_x for 2020 under the NECD was a 49 per cent reduction compared to a 2005 baseline level. Emissions have reduced by 53.8 per cent in the period 2005-2021 and therefore Ireland remains in compliance with the emission reduction commitment for 2020. Ireland has an emission reduction commitment of 69% for 2030 compared to 2005 levels.

Figure 8.1 below shows Ireland's historic and projected NO_x emission levels by sector along with Ireland's agreed reduction commitments. The turquoise segment represents the transport sector, which is the largest contributor to the NO_x emissions inventory. These air emissions result from road and rail transport modes and exclude aviation. The largest NO_x emission reductions needed between now and 2030 are from the transport sector.

Figure 8.1. Trend in NO_x Emissions 1990-2030 & Emission Reduction Commitments 2020-2030



Source: EPA - Ireland's Air Pollutant Emissions 1990-2030

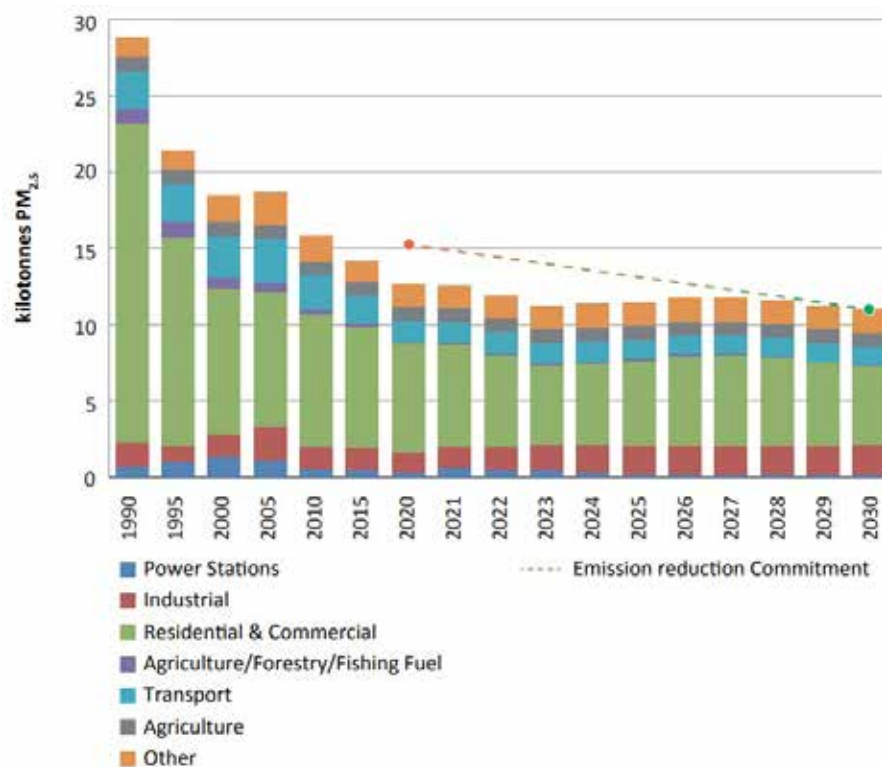
8.3.2.2 PARTICULATE MATTER (PM_{2.5})

Emissions of small particles can penetrate the lungs and cause damage. Fine particulates are known as PM_{2.5} (aerodynamic diameter < 2.5µm). PM_{2.5} is an indicator of anthropogenic (manmade) emissions. Fine particulate matter PM_{2.5} is responsible for significant negative impacts on human health.

Ireland's national emission reduction commitment for PM_{2.5} for 2020 under the NECD was an 18% reduction compared to a 2005 baseline level. Emissions have decreased by 32.7% in the period 2005-2021 and therefore Ireland remains in compliance with the emission reduction commitment for 2020.

Emissions of PM_{2.5} from the transport sector are generated almost entirely from the combustion of diesel fuel. Diesel particulate matter is believed by experts to be more damaging to human health due to carcinogenic compounds adsorbed to the surface of the particles.

Figure 8.2. Trend in PM_{2.5} Emissions 1990-2030 & Emission Reduction Commitments 2020-2030



Source: EPA - Ireland's Air Pollutant Emissions 1990-2030

For both NO_x and PM_{2.5} (local air quality benefits), mode-switching from roadway to railway has the potential to reduce emissions for both passenger and freight transport. This benefit will increase if zero emission locomotives and/or railcars are phased-in, such as battery-electric and hydrogen powered models. An overview of these technologies is included as Section 9 of this report. Therefore, the impact of the project on local air quality is considered a benefit with moderate significance.

8.3.3 GREENHOUSE GAS (GHG) BENEFITS

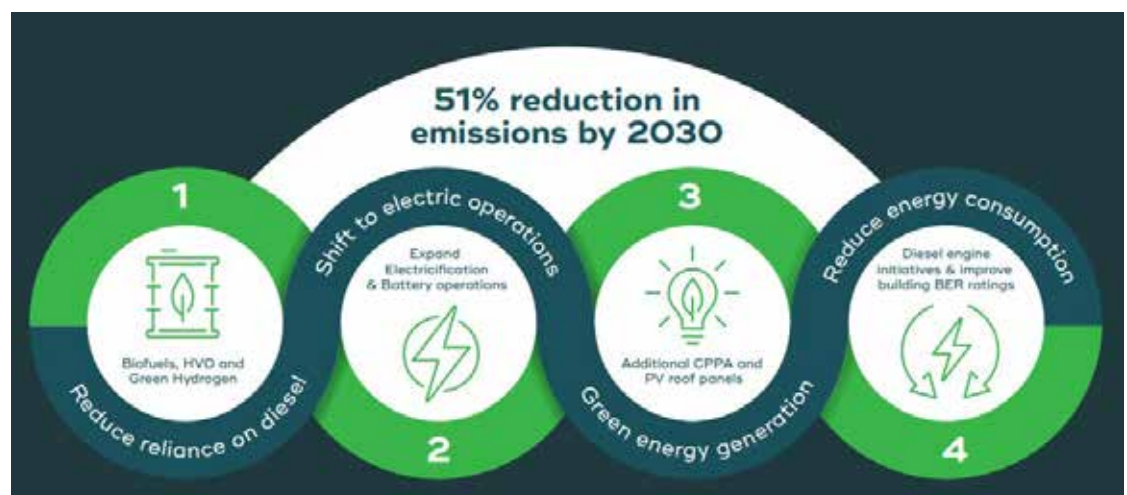
As cumulative global emissions and CO₂-attributable warming continue to rise annually, immediate emissions reductions and smart policies to transition toward a net-zero carbon economy are critical. With one train capable of carrying one ton of freight nearly 200 kilometres on one litre of fuel, railway operators such as Iarnród Éireann remain a key partner capable of delivering sustainable transportation solutions in the near term and for the long haul.

KEY TAKEAWAY: As the most fuel-efficient way to move freight over land, freight railways actively invest in infrastructure, equipment, and technology and deploy sustainable business practices to reduce their carbon footprint and build a more resilient network for a future shaped by climate change.

According to Iarnród Éireann's Climate Action Plan,¹⁶ rail is the only mode of motorised transport in Ireland to have almost continuously reduced its CO₂ emissions since 1990, at the same time as increasing transport volumes. Iarnród Éireann surpassed the EU 2020 target of 20% efficiency improvement and the National Public Sector target for 2020 of 33%.

To meet a public sector target of 51% reduction in emissions by 2030, Iarnród Éireann must reduce its combined annual Scope 1 (direct emissions) and Scope 2 (purchased energy emissions) to circa 70,800 tonnes, relative to 2018 while growing the passenger and rail freight businesses at the same time. This, in turn, will supporting the overall national reduction in transport emissions.

Figure 8.3. Iarnród Éireann's 2030 Decarbonisation Pathway



Source: Iarnród Éireann's Climate Action Plan 2023 – 2030.

While Ireland aims to decarbonise all modes of transportation to the degree possible, lowering GHG from the railway transport sector represents the logical first mode to transition. This is

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For Iarnród Éireann's Climate Action Plan, see <https://www.irishrail.ie/en-ie/news/iarnrod-eireann-climate-action-plan>.

due to the railway's central purchasing of locomotives and railcars, relatively few refuelling points at depots, land ownership, and design control over refuelling infrastructure.

Overall, the effect that the project can have on reducing GHG emissions is significantly positive. Conversely, in the absence of the Claremorris to Collooney/Sligo rail link, the Atlantic Economic Corridor (AEC) is provided with a single transport mode (roadways), which are much more difficult to decarbonise.

Similar to "local air quality benefits," greater reductions in GHG emissions will occur if zero emission locomotives and/or railcars are phased-in, such as battery-electric and hydrogen powered models. An overview of these technologies is included as Section 10 of this report.

8.3.4 PHYSICAL ACTIVITY BENEFITS

Railway links also have the potential to induce cycling beyond baseline levels due to the relative ease with which bicycles may be accommodated by a train compared to other transport modes. The ability of a bicycle-train-bicycle commute vastly increases the number of origins and destinations that may be accessed via the railway network. Therefore, induced cycling journeys and associated benefits can be expected from the project. Additionally, railway commuters tend to incorporate longer walks from work or home to a railway station, thereby incurring additional physical activity benefits.

Iarnród Éireann's existing intercity train intermediate cars already have capacity for 2 No. bicycles. New additional new carriages now being delivered have a further two nominated bicycle spaces (with locating straps) in the multipurpose area. However, this multipurpose area can accommodate a variety of uses for example such as a larger group of bicycles and cyclists provided they are attended during the journey, or families with buggies.

Figure 8.4. Interior of new ICR with bicycle section and fold-up seats (N. Enright)

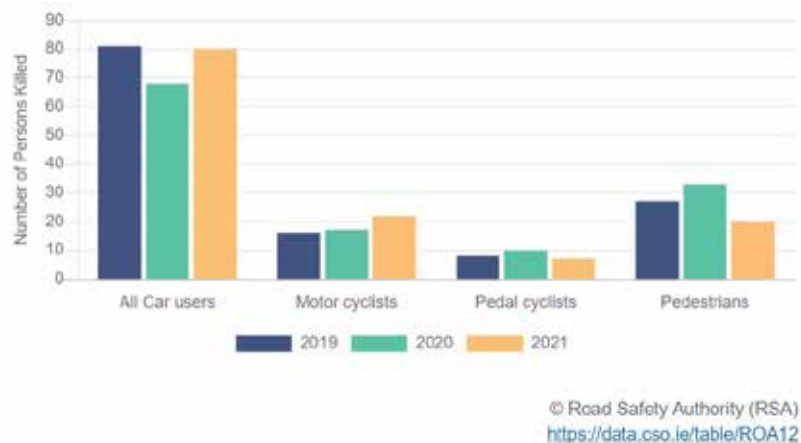


Overall it is considered that the project will have a moderately significant positive physical activity benefit.

8.3.5 ROAD SAFETY BENEFITS

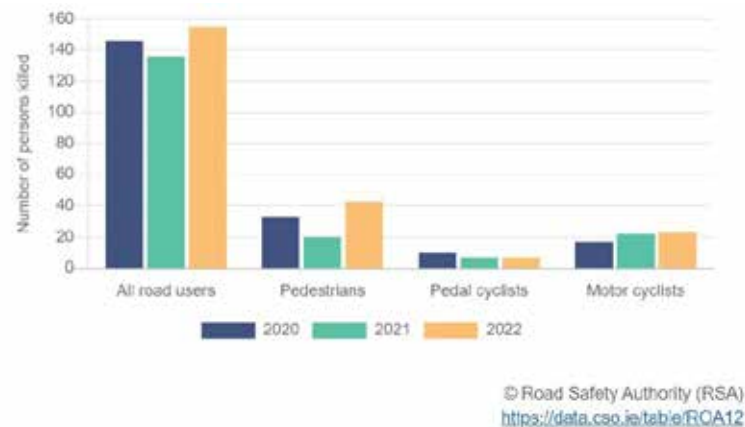
Also referred to as “collision benefits,” this benefit refers to the potential to reduce collisions between road users and their resulting injuries and fatalities. According to the CSO’s latest available road safety statistics, there were 137 fatalities and 5,596 injuries on Irish roads in 2021.

Figure 8.5. Number of fatalities by road user type, 2019-2021



Data is provisional

Figure 8.6. Number of fatalities by road user type, 2020-2022



The project has the potential to eliminate both heavy goods vehicles and light duty commuter vehicles from roadways. Passengers travelling via rail experience a near-zero risk of an injury or fatality. Therefore the project is considered to have a small, but positive benefit road safety benefit. Iarnród Éireann’s continued efforts to eliminate unprotected and self-operate level crossing in favour of automatic level crossings (or grade-separate crossings) will maximize the magnitude of the project’s benefit.

8.3.6 NOISE

Noise from major railways is regulated under the Environmental Noise Directive (2002/49/EC). In Ireland only two rail agglomerations are subject to the Environmental Noise Directive (2002/49/EC)—those being Dublin and Cork.

Reactivation of the Claremorris to Collooney/Sligo rail link would initially create additional noise along the line, but would in turn, remove noise sources along local roadways. The line operates mainly in rural areas, and therefore, there are few affected noise receptors.

In time, if traction power is converted to battery electric or hydrogen powered vehicles, noise will significantly decrease due to the cessation of diesel internal combustion engines for motive power. Overall, the project has the potential to deliver slightly positive noise benefits.

8.3.7 NET TRANSPORT USER BENEFITS

This overall benefit includes a range of benefits related to a transport user's travel time, overall cost of transport, and other monetary and non-monetary factors. Traditional transportation demand models have evaluated the time component of this benefit in terms of travel time only. That is, an hour-long commute in a personal vehicle was deemed equal to an hour-long journey on a train. However, a more detail approach requires consideration that the quality of travel time is an important part of the decision-making process. That is, commuters are willing to trade the shortest possible commute time for a slightly longer commute provided the latter is more comfortable, reliable, and convenient.

With regard to the major three modes of commuter travel (personal vehicle, public bus, and railway), the personal vehicle provides the lowest quality of travel time. Commuters must dedicate their full attention to the task of driving. Commute times can vary based on traffic and weather conditions, and parking must be provided for at both ends of the journey. In contrast railway travel provides the highest quality of travel time. Modern railway carriages are equipped with tables, Wi-Fi, charging points, toilet facilities, and catering facilities (when/where available). Commute time on a train can be almost as productive as time at the office. Commuter busses can provide some of these facilities, but in general are less comfortable, provide less personal space, and less-smooth journey.

Figure 8.7. Interior of Iarnród Éireann's Class 22000 Intercity Carriage



Additionally, rail transport is by far the most disability-friendly mode of public transport. Wheelchair and mobility-aided riders can board and alight trains at platform level, or with staff assistance using a ramp. On-board conductors and station operatives provide extra assistance when needed, and the on-board toilets are wheelchair accessible. Likewise, many stations contain dedicated handicapped parking spaces, lifts, automatic doors, and other disability friendly features.

Figure 8.8. Wheelchair User Alighting Iarnród Éireann Train (pic. P. Bowen-Walsh)



Regarding journey cost, access to Ireland's rail network provides an opportunity for significant cost savings. Many families find that living in walking or cycling distance to a railway station reduces reliance on the personal automobile so that a family can rely on a single personal vehicle, even if multiple members are commuting. Other incentive programs, such as the Taxsaver scheme, can reduce the cost of commuting by rail to well below the cost of operating a personal vehicle.

Overall, the project's potential net transport user benefits are positive and highly significant.

8.3.8 IMPACT ON PUBLIC FINANCES

This impact pertains to the possible impacts of restoration of the rail link on the public finances (i.e., implications for future revenue from direct and indirect tax revenues). Prior analyses have employed a very narrow methodology—looking primarily at reduced fuel excise and motor taxes received by the Exchequer due to modal shift. To properly quantify this potential benefit, a much broader and longer-term view is required, taking into account the other factors set forth in the Section.

One benefit is the ability of rail-served communities to attract Foreign Direct Investment (FDI), resulting in higher corporation taxes, payroll taxes, and commercial rates. A recent example of this is the 2023 announcement by Dexcom—a manufacturer of continuous glucose monitoring for people with diabetes—to locate a new, 1,000-employee manufacturing facility in Athenry, Co. Galway. The €300 million facility is located within walking distance of the Athenry railway station, and planning conditions require that Dexcom operate a shuttle service for employees. Similarly, Dexcom officials have expressed an interest in shipping their product via rail to their central European distribution facility.

Figure 8.9. Artist's impression of Dexcom Athenry Manufacturing Facility (Under Construction)



Another example of indirect benefits to public finances resulting from the project would be realised if a shuttle service to Ireland West Airport was implemented between Charlestown Station and the airport's terminal. In 2023, Ireland West Airport reported record passenger numbers, with 818,000 passengers. With new destinations, this figure is forecast to soon surpass one million passengers, with the potential to increase to two million passengers in the long term. A shuttle service connecting the airport to the railway network can be accomplished using standard airport shuttle vehicles powered by alternative fuels.

It is believed that Ireland West Airport is the easiest of Ireland's major airports to connect to the rail network, with the reactivation of the Claremorris to Collooney/Sligo line. The rail line would catalyse both foreign direct investment and tourism throughout the region.

Figure 8.10. Ireland West Airport



Another possible positive impact relates to higher housing prices in the areas adjacent to railway stations, resulting in higher Local Property Tax (LPT) revenue. Additionally, new housing, and transport-oriented redevelopment and infill projects could be prompted by the development, resulting in stamp duty on property transactions and ongoing LPT and commercial rates inflows. Additional benefits may arise from reduced rural unemployment and social welfare outlays, to increased occupancy rates of shop units in town centres, again improving commercial rates inflows.

Overall, the project's impact on public finances is considered to provide a significant benefit, and may be the most compelling reason to implement the project without delay.

[8.4] RAIL FREIGHT BENEFITS

8.4.1 INTRODUCTION

In 2005 Iarnród Éireann took a corporate decision on economic grounds to cancel all scheduled freight trains and to close its Uniload service. With Ireland continuing to be unique in Europe by having no grant aid or subsidy to rail freight, Iarnród Éireann felt obliged to confine their freight activities to block trains where they were confident of an economic return. The result was the closure of all container freight terminals including North Wall in Dublin. Virtually all rail freight traffic ceased within months leaving only Tara Mines ore traffic to Dublin Port, and Pulpwood from Westport and Ballina to Waterford, on the railways. Some freight yards were sold and staff numbers were reduced dramatically, while a modernisation of the mainline railway network got underway with an emphasis on passenger services.

Figure 8.11: Waterford Port to Ballina DFDS Liner passing Claremorris (Pic. Daniel Mogridge)



This closure of the rail freight sector happened as the McCann Report sponsored by the Minister for Transport Seamus Brennan to investigate the merits of opening the Western Rail Corridor between Sligo and Limerick, was reporting a demand from Mayo Industries for a continued multi modal container service to Dublin Port and also to Waterford Port. Thanks to the combined efforts of community (West On Track and Local Authorities), industry (Mayo Industries) and Iarnród Éireann, a model was quickly designed in Mayo to facilitate the operation of multi modal (maritime container) trains between Ballina and the Port of Waterford. This successful pilot project subsequently led to the re-introduction of container trains between Ballina and Dublin Port.

Dublin Port invested in new rail sidings that enabled transfer of loads between ship and train within the port confines. In 2011 there was significant investment in the expansion of sidings at Ballina with a further €2m invested there in rail freight facilities in 2020.

Work is currently underway to restore the passenger and freight railway between Limerick and Foynes new Tier 1 Port. With the advent of BREXIT, it is clearly logical to invest in rail connectivity between the thriving inland port at Ballina, the Iarnród Éireann-planned Tactical Rail Freight Terminal in Sligo and the increasingly important southern ports, so as to maintain the supply chain to the West and North West.

Figure 8.12: An IWT Intermodal container train approaches Ballina from Dublin Port 2020 (N. Enright)



8.4.2 RAIL FREIGHT TODAY

Currently there are three main freight customers of Iarnród Éireann. The first, International Warehousing & Transport (IWT), charts six container trains weekly making round trips between Ballina and Dublin Port with an average payload of 700 tonnes. The second, Coillte, a state owned commercial forestry business, charts two/three trains weekly for the carriage of bulk pulpwood from Ballina and Westport to their Smartply Plant at Waterford. The third, XPO Logistics, operates two round trips weekly between Ballina and the Port of Waterford.

Remarkably, all container rail freight in Ireland today operates either to or from the inland port/tactical Rail Freight Terminal located at Ballina. This is currently the only location on the entire Irish railway network owned by Iarnród Éireann that has the capacity to load or offload containers to and from trains. The other two rail container facilities are the property of Waterford and Dublin Ports. As a railhead, Ballina gathers/distributes containers from its wider hinterland. Commodities in the containers range from inbound imported raw materials for regional industries to finished products such as beverage concentrate, medical products, pharmaceuticals. and other products for export.

“All container rail freight in Ireland today operates either to or from the inland port/tactical Rail Freight Terminal located at Ballina. This is currently the only location on the entire Irish railway network owned by Iarnród Éireann that has the capacity to load or offload containers to and from trains.”

The fact that Mayo generates over 450 such freight trains annually on round trips to and from two ports begs the question as to what is the true national potential of rail freight for other parts of the country. There is increasing recognition that transporting freight by rail across Ireland has many advantages, not only from an economic viewpoint, but also in terms of the environment. Working with logistics companies, Iarnród Éireann has operated a modern and efficient intermodal container freight train service between Ballina and the Ports of Dublin and Waterford for the past 18 years. These trains displace approximately 15,000 truck journeys, each averaging 300 kilometres, amounting to 4.5 million truck kilometres per annum.

Since the initiative was introduced in 2006 approximately 10,000 freight trains have operated round trips between Mayo and the Ports of Waterford and Dublin diverting over 300,000 long-distance truck journeys, each averaging 300 kilometres amounting to displacement of approximately 90 million truck kilometres.

Figure 8.13: Container and Pulpwood Trains pictured in the freight yard at Ballina Inland Port (N. Enright)



Ireland's newest Tier 1 Europort is currently being developed at Foynes and is currently being reconnected to the national rail network. The government has also decided to reinstate the rail link between Claremorris and Athenry in order to provide rail access to Foynes and other southern ports for Mayo industry. Unless the rail link from Claremorris to Sligo is also reinstated, direct rail access to Foynes from Sligo and the North West Region will be restricted to a circuitous route via the Greater Dublin Area (GDA) that is 400 kilometres longer than via the extended Western Rail Corridor for each round trip. Such diversions will further congest the predominantly single track route serving Dublin from Sligo and add over 100,000 kilometres annually, if there were to be five weekly services on the Sligo to Foynes route.

Such diverted freight trains (via Dublin rather than directly along the West coast) would also incur additional Track Access Charges, charged by the railway company for the use of its track. Charges for these diverted trains would be 60% greater than those for the direct WRC route. From the point of view of a freight logistics company, based on five weekly freight services between Sligo and the Port of Shannon Foynes, the difference in annual Track Access Charges would be approximately €550,000. Such an excessive cost could undermine the economic viability of the rail option and potentially lead instead to over 9,000 truck journeys, with all of the associated environmental disadvantages.

Details of the Track Access Charges payable for projected freight services on the revitalised Western Rail Corridor are given in Table 8.9. This represents a direct cash contribution from rail freight traffic towards the maintenance of railway infrastructure. It is equally important that the economies associated with the shorter direct access to the Port of Waterford afforded by the WRC be realised.

A recent positive development is the announcement by Iarnród Éireann of its intention to develop a rail freight hub in Castlebar to service a number of Mayo's major multi-national companies (MNEs) who have asked for the provision of such rail infrastructure and access to rail services to the southern ports and to Dublin. Pending the provision of the Castlebar facility and the reopening of the Claremorris-Athenry section, Baxter Healthcare have already begun to move product to Waterford from Ballina using XPO services via the greater Dublin area.

8.4.3 RAIL FREIGHT PERFORMANCE

In 2023, Iarnród Éireann's key rail freight traffic included container (intermodal) trains from Ballina to Dublin Port and Waterford Ports, and pulpwood trains from Co. Mayo to Waterford. Total rail freight revenue in 2022 (the latest year for which accounts are published) was €4.83m. Iarnród Éireann has worked successfully with end users to gradually reverse the decline in rail freight traffic experienced in the early 2000s, and is currently exploring a renewed strategic focus seeking to chart the role that rail freight services can play into the future, in the context of the Climate Action Plan.

Iarnród Éireann declares that it is "committed to the growth of rail freight which will focus on the commercial, environmental and economic value that rail freight can provide in the years ahead."¹⁷ Based on the success of the Ballina Inland Port there is clearly the opportunity for similar railheads in Galway Sligo and Limerick. In 2015, the Western Development Commission (WDC) commissioned a study to investigate the potential for further demand for rail freight services into and from the Northern and Western Region that indicated a potential four-fold growth in rail freight nationally, if properly supported.¹⁸

Addressing the potential for new rail freight traffic to and from the western region (s5.2.11) the WDC analysis concluded:

"Rail freight services also need tracks to run on, timetable paths to run in, and railheads to interchange freight with other modes of transport and facilities such as factories and warehouses. The current network has a finite capacity, so in order to grow the level of traffic (and the length of trains), investment in the rail network will need to start within the next 5 years and ramp up considerably in the years that follow. This could include reinstatement of disused lines such as the Western Rail Corridor, connections to ports and rail freight interchanges."

The availability and further expansion of rail freight services (with its low carbon footprint relative to road haulage) could help provide a regional advantage, attracting new enterprises which might have a need for a high-volume, environmentally-sustainable transport solution while also tapping into existing businesses who might make the change from road to rail. The prospects for this kind of rail freight expansion are illustrated by the views of three actual and potential users of the service: Waterford Port, Shannon Foynes Port and International Warehousing and Transport (IWT) set out below.

¹⁷ Iarnród Éireann annual Report 2019 page 53

¹⁸ "In the short term, there is scope to almost double the number of trains operating to and from the Western Region, from an average of four per day (two in each direction), adding a further 2.8 to 3.7 trainloads per day" WDC 4.5.3. (<https://www.wdc.ie/wp-content/uploads/WDC-Rail-Freight-Study-Final-Report-18-12-15.pdf>)

Waterford Port

The Port of Waterford is a modern, efficient port and the closest Irish lift-on/lift-off and bulk port to mainland Europe. A national rail link runs through the port extending the full length of the Atlantic Rail Corridor northwards to Ballina and Sligo. The main centre of operations is at Belview Port on the River Suir, 8km downstream from Waterford city.¹⁹

Figure 8.14: Ballina Rail Freight liner unloading at Waterford Port (Belview) 2015: (Pic. Port of Waterford)



The Port of Waterford is strongly supportive of the restoration of the rail freight connection to the West and Northwest. A new Ballina-Waterford service, operated by XPO Logistics, a recent entrant into the Irish rail freight business, has been operating twice weekly since the summer of 2023.²⁰ The Port of Waterford Corporate Plan for 2020-24 states: “Re-activation of the rail freight connection to Ireland’s Northwest and West is an ongoing priority. This facility can support growth in container handling through the Port and provide an economic and environmentally sound option for exporters and importers outside of our immediate region.”

“Port of Waterford fully supports the opening of the Atlantic Rail Corridor and will assist in whatever way it can to revitalise rail freight throughout Ireland, particularly in the West. Opening of the Atlantic Rail Corridor from Mayo via Limerick to Waterford would bring fantastic new opportunities to shift freight from road to rail.”

Mr Frank Ronan, Chief Executive, Port of Waterford – March 2021

Shannon Foynes Port

Shannon Foynes Port Company is the statutory authority for the 500 sq. km Shannon estuary and is Ireland’s largest bulk port, catering for circa eleven million tonnes annually. It is one of three Tier 1 ports of national significance, as designated by the Irish Government, along

19 www.portofwaterford.com;

20 XPO Logistics, Inc. is the second largest contract logistics provider and the second largest freight broker globally. [Pivotal Supply Chain Solutions | XPO Logistics](#)

with Dublin and Cork. Shannon Foynes Port is also a Ten-T, European Commission Core corridor port on the Europe/North Atlantic corridor and on the North Sea/ Mediterranean Corridor. Shannon Foynes Port's development plan for the future called Vision 2041²¹ sets out ambitious plans to develop a multimodal transshipment facility at the port.

Figure 8.15: A view of Shannon Foynes Ten-T Port (Pic. Shannon Foynes Port)



As part of the port development it is expected that the reopening of the Foynes to Limerick rail line will be complete in 2025. It is notable that for many years the Western Rail Corridor incorporated that section of railway with regular freight services from Ballina and back. The last Ballina-Foynes service ran in 2000. The Port is anxious to restore the direct link to Ballina and the North West as part of its development. In September 2020 the Minister for Transport Mr. Eamonn Ryan TD spoke of the two projects as being complementary describing them as “missing links”. He observed:²²

“Developing those two small links would give us a national rail freight service connected to two international deep-water ports”

“The reopening of the Western Rail Corridor is viewed by the Shannon Foynes Port Company as a vital element for the success of the proposed new container services in Foynes. It offers viability to the service offering and nationally it reduces traffic to east coast congested ports and makes an overall contribution to our national decarbonisation ambitions.”

Mr. Jerry Hallisey Head of Business Development SFPC - March 2021

International Warehousing and Transport (IWT)

IWT is the largest single freight customer of Iarnród Éireann. It currently charts twelve rail freight services weekly on the Ballina–Dublin Port route and is strongly supportive of restoring the direct rail link from Mayo to the southern ports. IWT has invested in excess of

²¹ www.sfpc.ie; The Shannon estuary is Ireland's deepest and most sheltered watercourse.

²² Dáil Éireann debate - Thursday, 24 Sep 2020 <https://www.oireachtas.ie/en/debates/debate/dail/2020-09-24/>

€2 million in its depot in Ballina, with a capacity to operate the first and last mile on a 24/7 basis. A modern fleet of trucks and heavy lift port-type reach stackers for lifting containers are available on site.

Figure 8.16: The first chartered IWT train from Dublin Port to Ballina passes Claremorris 20th August 2009. More than 3,500 such trains have operated since. (L. Khorsheed)



IWT has specifically indicated its interest in expanding its rail freight operations to serve locations on the Western Rail Corridor. A number of other potential customers have been identified, including potential traffics from Cork to Ballina, Foynes to Ballina and Waterford to Tuam, Claremorris, Ballina and Sligo.²³

“The restoration of the rail freight connection from Mayo southwards to those southern ports, as proposed recently by the Minister for Transport, would allow for greater flexibility and alternative exit points for current business as well as the development of such new business opportunities.”

Mr. Colin Dunne, Joint Managing Director, IWT, - March 2021

The Irish Exporters Association (IEA)

In its 2021 pre-budget submission, published on October 1st, 2020, the Irish Exporters Association (IEA) welcomed the comments by Transport Minister Eamon Ryan about the potential reopening of the Western Rail Corridor linking to the ports of Foynes and Waterford, and highlighted the importance of creating sustainable alternatives to the UK land bridge for Irish freight.

In its submission the IEA stated: “It is becoming increasingly apparent and ever more urgent that Irish freight both outbound and inbound will be snarled up in any delays that occur in British ports post January 1st, 2021, whatever the outcome of the negotiations. This has been abundantly clear to us in the IEA for some time. Britain is not ready for the transport (and by extension the supply chain) challenges of Brexit. Alternatives to the land bridge

23 IWT to Joint Oireachtas Committee on Transport, Tuesday 16th February 2021. https://www.oireachtas.ie/en/debates/debate/joint_committee_on_transport_and_communications_networks/2021-02-16/

using direct shipping from Irish ports to France and the Netherlands will be required to keep our supply chains flowing. We urge Government to remain vigilant that support may be required to open new routes directly to the continent.”

“We welcome recent comments made by the Minister for Climate Action, Communication Networks and Transport about the independent review of and consideration being given to the potential reopening of phases 2 and 3 of the western rail corridor. The IEA believes that increased rail freight capacity should play an important and significant part of our climate change agenda. The further expansion of rail freight also has the potential to contribute to Ireland’s regional development.”

Irish Exporters Association - October 2020.

It is noted that Dublin Port’s Masterplan 2040 recognizes that the Port, as currently configured, will be unable to cope with projected volumes of freight traffic by 2035 and that any further growth will have to be at other locations.²⁴ IMDO research figures show the number of TEU (20ft. equivalent units) being shipped through Irish Ports reached one million units in 2019. Annual growth from 2013 had been 7%. Data for 2019 broken down by port were: Cork 240,186, a growth of 5% on the previous year; Dublin was 774,056, a 7% growth in 2018; and Waterford, 49,348, a 12% growth in 2018. It is not unreasonable to assume that industrial development policy in Ireland will seek to encourage the development of manufacturing activities towards the West and other regions away from Dublin. A key element in ensuring the success of such a policy will be to guarantee access to markets through efficient links to our gateway ports.

8.4.4 THE WRC AS PART OF THE IRISH RAIL FREIGHT NETWORK

The EU designation of 2021 as European Year of Rail was a part of the “European Green Deal” suite of political objectives and policies.²⁵ The case for increasing the railway’s share of heavy freight traffic on the island of Ireland has been well made as a part of the “greening” of the Irish economy agenda. Other significant factors include a reduction of road congestion and accident levels, the increasing pressure on road hauliers to secure and retain drivers, working time restrictions and uncertain fuel costs.

The view is sometimes expressed that Ireland is too small for rail freight. However, it is sustainability rather than distance that determines whether a rail freight path is viable or not. This is illustrated by the success of bulk rail freight flows of just 80 km from Tara Mines to North Wall and the evidence of intensive container (inter modal) and pulpwood rail traffic between Mayo and Dublin/Waterford ports over the past 18 years.

Mayo freight trains carry payloads amounting to 240,000 tonnes annually, displacing 15,000 truck journeys covering 4.5 million kilometres. With the exception of pulpwood, traffic operated by Iarnród Éireann on behalf of Coillte, all Ireland’s rail freight traffic runs into and out of Irish ports. The ports of Rosslare, Waterford, Foynes and Cork all see the growth of rail freight volumes as a key element in their masterplans and development strategies.

²⁴ <https://www.dublinport.ie/masterplan/masterplan-2040-reviewed-2018/>

²⁵ https://europa.eu/year-of-rail/index_en

This map illustrates the railway network of Ireland. A prominent red line traces a route from Sligo in the north, through the west coast (passing Ballina, Castlebar, and Galway), down the south coast (through Limerick, Waterford, and Wexford), and finally to Cork. Other major routes are shown in green, connecting Dublin to various parts of the country, including Belfast, Drogheda, and the west coast. The map also shows numerous smaller towns and stations, as well as geographical features like the Atlantic Ocean and the Irish Sea. A compass rose is located in the top left corner.

The Rail Freight Network

The IÉ track infrastructure is predominantly single track and is subject to congestion where train movements increase. In the case of traffic to and from Mayo, the current routes for both Dublin bound and Waterford bound rail traffic are increasingly congested. The 205 km railway from Portarlinton to Ballina is single track. Re-use of the Athenry to Claremorris section would offer a de facto double track access as far west as Claremorris which is just 50 kilometres from Ballina. The continuing expansion of Dublin's rail commuter belt is likely to further increase congestion on the network east of the Shannon. The re-opening of the Sligo-Mayo railway will divert new freight traffic destined for southern ports away from the Greater Dublin Area where it has no business.

The railway line from Sligo through Mayo and Galway to Limerick, Cork and Waterford, offers considerable capacity for both passenger and rail freight. Restoration of the Collooney-Athenry link will enable traffic to the existing rail-served Port of Waterford and planned rail connections to Shannon Foynes and Cork, ensuring a better overall utilization of the rail network.

Environmental Advantages of Rail freight

Modern rail freight generates less than a quarter of the CO₂ emissions of road haulage. It decongests the road network and provides a complementary and efficient route to market for business which is both reliable and cost effective. In the UK, a total of ninety TEUs (20ft containers) are common on trains. In Ireland thirty-six is the maximum at present. Plans are in place to increase train lengths, increasing rail freight competitiveness and further reducing environmental emissions.

As understanding of the public health impacts of poor air quality has grown, so the pressure on sectors responsible for the majority of diesel emissions has increased. Road haulage, buses and private cars are increasingly under the spotlight. A 2017 scoping paper by the Rail Freight Group Campaign for Better Transport found air pollution to be a major public health issue.²⁶ The World Health Organisation implicates outdoor air pollution in three million premature deaths each year, including 400,000 premature deaths a year in EU countries. Such pollution is recognised as contributing to conditions including cardiovascular illnesses, lung cancer, childhood asthma and Parkinson's disease.²⁷ Other pressing pollution concerns associated with diesel emissions include Nitrogen Oxide (NOx) , particulate pollution, benzene and carbon monoxide.

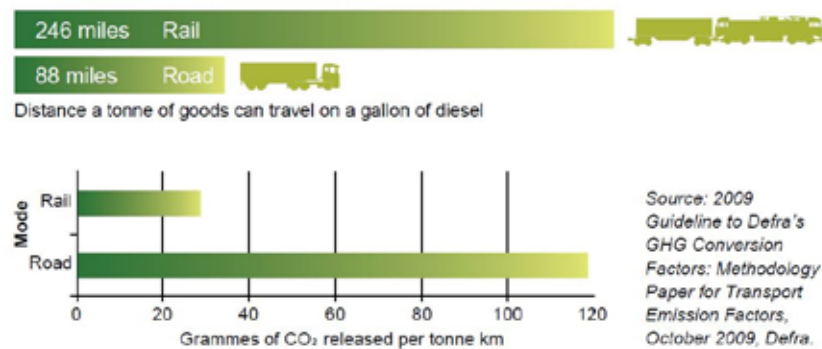
Overall, rail plays an important role in reducing the environmental impact of transport and has the capacity to do more. Research suggests that transferring more freight from road to rail could bring major reductions in pollution. For example, the current twenty weekly freight train movements in and out of Mayo translates to around 360 fewer lorries per week between Ballina and Dublin/Waterford. The re-introduction of rail freight to the Western Rail Corridor has the potential to increase this to 500 fewer truck movements per week and to further ameliorate road congestion and reduce pollution.

The movement of freight by rail, where industry shares a transportation mode with others, is analogous to the way in which carpooling helps move more people for less fuel, cost, and road congestion. In terms of fuel consumption rail freight is more economical than road, as illustrated below.

26 <http://www.rfg.org.uk/wp-content/uploads/2017/12/Air-quality-freight-FINAL-2.pdf>

27 <http://www.who.int/mediacentre/news/releases/2016/air-pollution-estimates/en/>

Figure 8.18: CO2 emissions per tonne km: Rail vs. Road



Reductions of 75% in fuel emissions are achieved by using rail over truck transport with consequent reductions in greenhouse gases. In addition, road repairs and replacements are not only expensive, but they also involve the use of heavy machinery that consumes fuel, contributing further to greenhouse gas emissions. Road surface/pavement damage is proportional to the fourth power of the vehicle weight, so a 9-ton truck does over 3000 times the road damage of a 1-ton car. Fewer trucks on the road means that roads require less maintenance. Fewer trucks means less traffic. Traffic congestion means that drivers are regularly forced to waste fuel as they wait or move at low speeds.

EU Green objectives

In 2020 the European Commission announced its 'Sustainable and Smart Mobility Strategy' and 'Action Plan' with regards to the transformation of European transportation.²⁸ Objectives include the doubling of rail freight traffic by 2050, and the doubling of high-speed rail traffic by 2030. Additionally, there is a strong focus on the TEN-T network and the European Rail Traffic Management System (ERTMS). Specifically, the TEN-T and Rail Freight Corridors regulations will be addressed together, in order to establish a single integrated 'European Transport Corridors' system.²⁹

"The Action Plan foresees changes in connectivity across different transport modes that will allow the seamless transshipment of freight. Refinement of ERTMS services and functions, combined with partnerships for further development, will be prioritised by the Commission. The Action Plan aims to reduce carbon emissions by 90 per cent by 2050 and create a smart, competitive, sustainable, and safe transportation system in Europe. EU Commissioner for Transport, Adina Valean stated: "Transport matters to us all because it is the backbone that connects European citizens and businesses. We shouldn't lose time in getting fit for the future and unfold the potential to revolutionise the way we move, making our mobility smarter, more efficient, and also greener. A major opportunity of rail freight transport is to replace road transport in journeys longer than 300 km."

European Commission, 2020

²⁸ <https://www.railfreight.com/railfreight/2020/12/11/rail-freight-transport-at-the-centre-of-europes-mobility-strategy/>

²⁹ On 9th August 2019 Ireland formally requested the European Union to amend the Ten-T Regulation and requested the European Commission to consider the existing requirements for the Ten-T Core Network with a view to including the Atlantic seaboard region of Ireland on the Ten-T Core Network. A successful outcome would render rail investment in the WRC eligible for EU grant aid.

Rail freight revenue

Revenue received by Iarnród Éireann from rail freight customers is divided between the Railway Undertaking (RU) Division which operates the trains and the Infrastructure Manager (IM) Division which maintains the track, signalling, etc. The figure payable to the IM is known as a Track Access Charge (TAC). This is a form of toll charged for the use of the railway and its freight handling facilities. This is calculated using a formula determined by an Essential Functions Body (EFB) designated under the European Union (Regulation of Railways) Regulations 2015. Córas Iompair Éireann, as distinct from Iarnród Éireann, is the essential functions body.

The current Iarnród Éireann Network Statement for the 2024 timetable period states that the variable usage track infrastructure charge applied to services operating on the network is on a rate of €0.0077 per gross tonne kilometre. The amount payable for each rail journey is calculated by multiplying the gross tonne kilometres operated by €0.0077. On this basis, a freight train on a round trip from Ballina to Waterford Port via the Western Rail Corridor would pay a Track Access Charge of €3450; while a train from Ballina to Foynes would pay €2650. It is estimated that a standard Intermodal freight train from Sligo to Foynes will pay €2954 in track access charges at current rates. This is in addition to whatever charge the Railway Undertaking makes for the actual operation of the trains, e.g., fuel, crews, maintenance, replacement, etc.³⁰

Table 8.9 illustrates the value to Iarnród Éireann of Track Access Charges (TACs) from 2021 Mayo freight train operations, estimated to amount to approximately €1.3m per annum. In addition there is a charge for the operation of the train service by Iarnród Éireann.

Table 8.9 Estimated Value of Current Track Access Charges (TACs- 2021)

CURRENT	ORIGIN - DESTINATION	WEEKLY TRAINS	TRACK ACCESS CHARGE PER TRAIN €	GROSS ANNUAL TRACK ACCESS CHARGES (TACS) €M
Current	Ballina/Dublin	6 inter-modal	€3000	0.940
	Ballina/Westport-Waterford	2 Pulpwood	€3350	0.350
Annual Total		416 Trains		1.29m

As mentioned above, XPOs's new rail freight intermodal service commenced in 2023 between Ballina and Waterford Port. It is required to travel the more circuitous and congested route via the Greater Dublin Area until such time as the Western Rail Corridor becomes available. Clearly, this new service and the existing pulpwood services could be operated more economically via the extended Western Rail Corridor. If the Athenry-Claremorris WRC extension is undertaken quickly to link with a reconnected Shannon Foynes Port, it is reasonable to project at least five weekly freight services (i.e. one daily) to and from the inland Port in Ballina and an equal number from the Iarnród Éireann proposed new rail freight hub in Sligo during the first five years of operation. These may turn out to be conservative projections.

30

It is noted that while EY confirmed on page 1 of their report that revenue is "ticket revenue plus additional rail access charges for freight" they gave no value for these payments in their calculations of rail freight income.

Figure 8.19: Waterford-bound Coillte Pulpwood Train at Westport (Pic. Noel Enright)



Given the growing demand from companies across the west for rail freight access, over the first five years after the proposed restoration of the next phase of the WRC (2029-2034), freight services on the extended Western Rail Corridor may be projected to number at least five, possibly up to ten, weekly round trip services to Waterford and Shannon Foynes Ports carrying containers, pulpwood and bulk products. This number will increase further following the renewal of the Sligo to Mayo route.

There is every likelihood that current Track Access Charges in Ireland will be reduced, as they are regarded as a disincentive to the transfer of road freight to rail, and they are among the highest in the EU. It is expected that any reduction in income from such TACs will be offset by a state subsidy of the rail freight infrastructure, as is the case throughout the EU. While charges to customers for the use of the railways will decrease, revenue earnings for the Railway Undertaking will actually increase due to substantial growth in business.

In addition to the Track Access Charges by the Infrastructure Management Division, illustrated below, there is a charge by the Iarnród Éireann Railway Undertaking Division for operating the services, to cover fuel, crews, maintenance, depreciation, etc. It is considered that the Track Access Charges represent approximately 40% of the total charge to the customer at present.

For comparison purposes, Track Access Charges for a round trip intermodal service between Sligo and Foynes would be €2954, and between Sligo and the Port of Waterford would be €3880 at current rates.

8.4.5 CONCLUSIONS ON FREIGHT

The only intermodal (container) rail freight traffic on the island of Ireland today is the daily operations between Mayo and Dublin/Waterford. All Waterford round trips from Mayo must currently travel via the Greater Dublin Area on a circuitous route that is 40 kilometres longer and subject to higher Track Access Charges than would be the case if the more direct and less congested route via Galway and Limerick were used. Ballina is currently the only rail freight container handling facility on the entire Iarnród Éireann network, and is Ireland's only inland port.

In the post-Brexit era there will be increased use of southern ports for importing raw materials and exporting finished product to the continent. Enterprises located in the Northern and Western region need to have direct rail access to these ports. Forcing these enterprises to rely wholly on trucks for access to these ports will inevitably carry a heavy environmental penalty.

Rail freight in Ireland generates approximately €1.5m gross profit annually. Customers are subject to one of the highest Track Access Charges in the EU for use of the railway network. Each additional weekday round trip freight train service using the extended WRC will contribute €700,000 to Iarnród Éireann's Infrastructure Manager (IM) Division in Track Access Charges. Annually. (700 tonnes x round trip average 500 km x 260 days x €0.0077per tonne/km = €700,700)

Mayo intermodal trains currently contribute to carbon savings by displacing approximately 15,000 long-distance lorry movements involving over 4.5 million road kilometres annually. It may be extrapolated that proposed additional intermodal trains on the Western Rail Corridor would displace over 9,000 long distance lorry movements involving 2.5 million road kilometres annually from the start of operations. Rail transport of freight uses 15-25% of the direct energy per tonne-kilometre compared with transport by road.³¹ Unlike most EU countries Ireland offers no state aid or subsidies towards rail freight.

The restoration of the rail link between Mayo and Galway, linking in to the existing rail route to the South, will help to address one of the Government's headline priorities, i.e., minimising the impact of BREXIT on trade and the economy in a timely and cost-effective manner. It will also offer new opportunities for industry in Galway, Clare, Limerick and Tipperary to access rail freight while freeing up paths for more passenger services on the radial Dublin - Westport/Galway routes, which will continue to be utilised for Dublin Port traffic. Critically, once the Mayo-Galway section has been restored the way will be then clear for Sligo to be reinstated as part of the developing North-South network.

The year 2021 was the European Year of Rail. It is an objective of the EU action plan to double the volumes of rail freight by 2050. The action plan aims to reduce carbon emissions by 90 per cent until 2050 and create a smart, competitive, sustainable, and safe transportation system in Europe. The freight developments projected in this report would facilitate a doubling of rail freight volumes to and from the Northern and Western Region within the timeframe established by the EU.

[8.5] BENEFITS IN A WIDER REGIONAL DEVELOPMENT CONTEXT

We have presented our analysis of the monetary and non-monetary benefits that are likely to arise from the restoration and operation of the Claremorris-Collooney link of the WRC. Without access to resources and institutional assistance (e.g., from IÉ and the NTA), to carry out a financial appraisal starting from basic principles, we have been obliged to work largely within a qualitative methodological framework.³²

The results of this section are designed to feed into Section 9 to follow, where the benefits of the line restoration are combined with our attempt to quantify the capital costs of restoring the line to full use (as described in Section 7).

An area of our benefit analysis that is least satisfactory relates to future revenue generated by passengers. To treat the line restoration as merely an additional transport mode to those currently available (i.e., cars and bus/coaches), intended mainly to serve people living close to the rail line running from Claremorris to Collooney, would be to underestimate seriously the potential demand for rail passengers. Re-establishing a rail connection between the north-western part of Mayo and Sligo to south Mayo, Galway, Limerick and further south would offer the prospects of wider network benefits that could support a more dynamic economy in the whole region, but specifically in the lagging north western part.

As shown above, there are a wide range of other benefits that are associated with switching transport modes from road to rail. Here, the application of narrowly based cost-benefit analysis is only able to handle monetised benefits associated with transport mode switching between the available transport modes which are treated in a fairly static way.³³ Such analysis is complicated and technical, and makes large demands on data that derive from historical travel patterns where all that has changed is the provision of an additional transport mode (i.e., rail), and the quantified/monetised benefits will always tend to be very small.³⁴

There are wider, more serious flaws with the use of cost-benefit analysis in the context of an island-wide strategic plan for renewing the rail network (as in the Arup Report), but also when evaluating any isolated part of that network (such as Claremorris-Collooney line restoration). First, as discussed previously in Section 3, a more relevant perspective within which to evaluate the full restoration of the WRC is a regional development context where the rail line serves a transformational role in linking the towns of north Galway, Mayo, and Sligo/Leitrim/Roscommon on a north-south axis and strengthening the regional economy. Over a time horizon of about 50 years both the regional economy and the urgency to decarbonise will evolve and change. Marginal changes in CO₂ emissions are likely to be completely inadequate in the face of a very likely need to reduce drastically the use of fossil fuels. A transition from fossil-fuelled cars, buses and HGVs to electrically powered vehicles will only address the challenge partially since the very manufacture of such vehicles in the required numbers will also use up resources and generate CO₂ emissions. Any drastic reduction in the number of such road-based vehicles, be they fossil-fuelled or electric, could only be feasible through a switch to rail, with road use for shorter journeys and to access the rail modes.

Second, to focus mainly on a narrow geographical area close to the Claremorris-Collooney

32 As noted in Section 2, the Arup Report faced a similar dilemma and resorted to a mixture of formalised quantification, where data were available, and a top-down, qualitative approach, when data were not available.

33 In other words, the nature of the road and rail infrastructure is held fixed, demand forecasts are based on notional population projections that are likely to be wrong, and the future costs of the different types of fuel/power are handled simplistically.

34 This can be seen in the original EY Report on the Athenry-Claremorris restoration and in the West on Track Report that examined the EY analysis critically.

alignment will result in a significant under-estimate of the true potential of the WRC. Attempts to apply cost-benefit methodology on a piecemeal basis miss out on wider network benefits that only arise from an integrated and interlinked rail system. However, the absence of access to Iarnród Éireann and NTA data sources prevents us following up our appraisal in a way that would include the wider network benefits of a fully restored WRC.

Finally, an in-depth, comprehensive, forward-looking, half-century analysis of the likely benefits of restoring the Claremorris-Collooney line needs to be undertaken. In the short term, the costs of restoration will dominate the analysis and the switch to rail may be slow. However, the experience of the build-up of use of the restored Limerick-Ennis-Athenry-Galway line, as documented in Section 5 suggests that the benefits of rail, when recognised by the public, soon kick in and usage can rise dramatically. There is no reason to believe that a restored Claremorris-Collooney line would be any different. If the demographics of Mayo and Sligo remain largely unchanged, except of unbalanced population growth in their towns (as documented in Section 3), then the benefits of rail restoration are likely to be modest. However, if the N&W region is provided with appropriate transport infrastructure that knits together its dynamic towns on a north-west axis, development is likely to be rapid and the build-up of rail use can be expected to follow the pattern of the Limerick-Galway rail line.

“To focus mainly on a narrow geographical area close to the Claremorris-Collooney alignment will result in a significant under-estimate of the true potential of the WRC. Attempts to apply cost-benefit methodology on a piecemeal basis miss out on wider network benefits that only arise from an integrated and interlinked rail system.”



9

A photograph of an offshore wind farm at sunset. The sky is a mix of soft pinks, oranges, and blues. Several wind turbines are visible, their blades blurred by motion. The lower half of the image is covered by a semi-transparent red overlay.

Section 9

The Role of Ireland's rail network in decarbonising the transport sector

[9] THE ROLE OF IRELAND'S RAIL NETWORK IN DECARBONISING THE TRANSPORT SECTOR



[9.1] INTRODUCTION

This section sets out the role that Ireland's railway network must play in decarbonising the transport sector, thus enabling Ireland to meet its policy objectives regarding offshore wind generation, transport sectoral GHG reductions, and green hydrogen production (See Section 9.2). Ireland's railway network is a critical vehicle by which specific Government policies will be delivered. Without further significant investment in expanding and enhancing Ireland's railway network, it is unlikely that these goals will be achieved.

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Many engineers and energy economists believe that a global post-carbon economy will rely on hydrogen. Liquid and gaseous fossil fuels, such as diesel, gasoline, and natural gas possess very favourable characteristics regarding ease of extraction and production, energy density, ease of transport, and ease of storage and handling. Technologies employing combustion of these fuels have been evolving ever since the industrial revolution and have been optimised for performance and efficiency. It is only our somewhat recent understanding of the deleterious effects of climate change resulting from anthropogenic GHG emissions that requires us to rapidly change course and transition to a non-carbon-based economy.

The key technology obstacles that must be overcome relate primarily to generation of renewable energy both spatially and temporally, and the transport and storage of this energy when it cannot be generated exactly where and when needed. Battery-electric technology offers one possible solution, but also has significant drawbacks. For example, if the energy used to charge batteries is not produced from renewable sources, batteries actually increase GHG emissions and energy use due to efficiency losses incurred when electrical energy is converted to chemical energy, then back to electrical energy, and then finally to mechanical (kinetic) energy. Also, the mining of metals necessary for battery production has been shown to cause unintended lifecycle GHG emissions as well as other significant environmental impacts in the areas where mined. Nonetheless, battery electric technology, such as battery-electric vehicles, plug-in hybrids, and standard hybrid vehicles, are an important bridging technology.

For Ireland, a more robust and efficient solution begins with the development of our massive offshore wind resources. Offshore wind—particularly off of our West Coast—has the potential to deliver much of Ireland's transit sector energy needs. The renewable electricity that is generated and brought onshore can be delivered directly to the National Grid to match the demand curve, and particularly the peak demand period during early evening. During periods of low demand (night-time, weekends, and warm weather), the excess renewable electricity can be diverted to one or more near-shore hydrolytic plants to generate "green hydrogen." If hydrogen plants are located at rail-served ports (such as Shannon Foynes Port), the green hydrogen can be diverted directly to locomotive and railcar refuelling infrastructure.

The additional produced green hydrogen can be transported by cryogenic tanker wagon or container, anywhere on the Iarnród Éireann network, to fuel locomotives and railcars at depots, or to supply refuelling infrastructure for on-highway vehicles and other industrial uses. If the Claremorris to Collooney/Sligo rail link is not reactivated, there is a substantial risk that Sligo and large sections of the Northwest Region will be deprived of this source of green hydrogen, thereby making it considerably more difficult for the Government to achieve its policy goals. This result has not been considered heretofore and was not weighed at all in the All-Ireland Strategic Rail Review.

Figure 9.1: Cryogenic container capable of delivering “Green Hydrogen” to all points on the Iarnród Éireann Network (Image: Michael Ismar, NPROXX)



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[9.2] IRELAND POLICY CONTEXT

9.2.1 RENEWABLE ENERGY POLICY

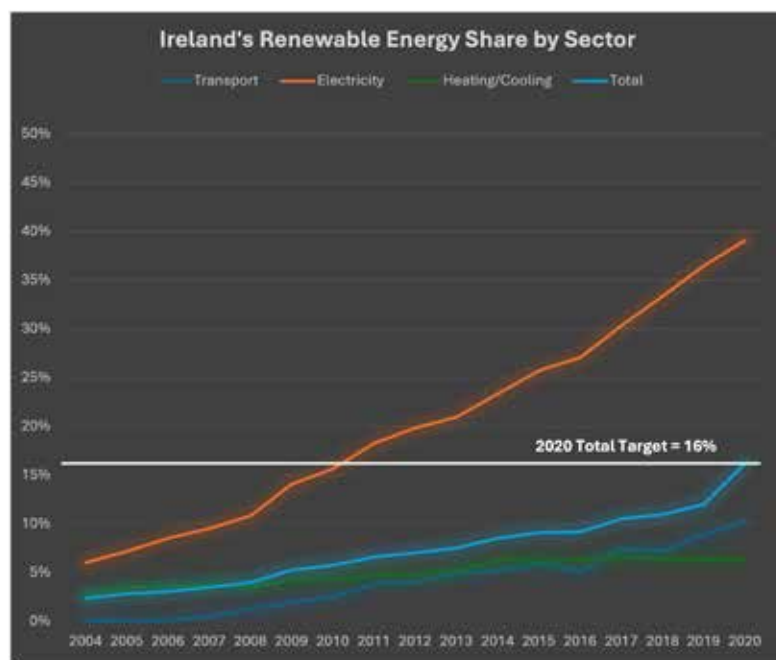
The 2009 Renewable Energy Directive (2009/28/EC) established a binding requirement that Ireland increase its overall renewable energy share (RES) from 3.1% (the 2005 baseline) to 16% (the 2020 target). This was to be accomplished by achieving 2020 sectoral targets for transport, electricity generation, and heating and cooling. Ireland’s actual overall RES in 2020 was 13.5%, meaning that Ireland was obligated to acquire statistical transfers of renewable energy from other Member States to compensate for this shortfall.¹ Specifically, Ireland executed statistical transfers from Estonia and Denmark in the amount of €50 million

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See: Renewables, Energy Statistics in Ireland, SEAI.

in late 2020² for which Ireland received no other benefit than avoiding EU infringement penalties. See Figure 9.2 for sectoral and total RES (including statistical transfers).

Figure 9.2: Sectoral and Total Renewable Energy Share, 2004 to 2020



Source: EU Energy Statistical Pocketbook and Country Datasheets

Despite Ireland's inability to raise its overall RES by 13% over a 15-year period, the Government committed to further ambitious sectoral reductions and emission caps equivalent to a 51% reduction relative to 2018 baseline levels by 2030 (See Table 9.1).

Table 9.1. 2030 Sectoral Reductions and Ceilings Equivalent to 51% Reduction from 2018 Level

Sector	Reduction	2018 *	2030 ceiling *
Electricity	75%	10.5 MtCO ₂ eq	3 MtCO ₂ eq
Transport	50%	12 MtCO ₂ eq	6 MtCO ₂ eq
Buildings (Commercial and Public)	45%	2 MtCO ₂ eq	1 MtCO ₂ eq
Buildings (Residential)	40%	7 MtCO ₂ eq	4 MtCO ₂ eq
Industry	35%	7 MtCO ₂ eq	4 MtCO ₂ eq
Agriculture	25%	23 MtCO ₂ eq	17.25 MtCO ₂ eq
Other**	50%	2 MtCO ₂ eq	1 MtCO ₂ eq

* = Figures for MtCO₂eq for 2018 and 2030 have been rounded. This may lead to some discrepancies.

** = F-gases, Petroleum Refining and Waste

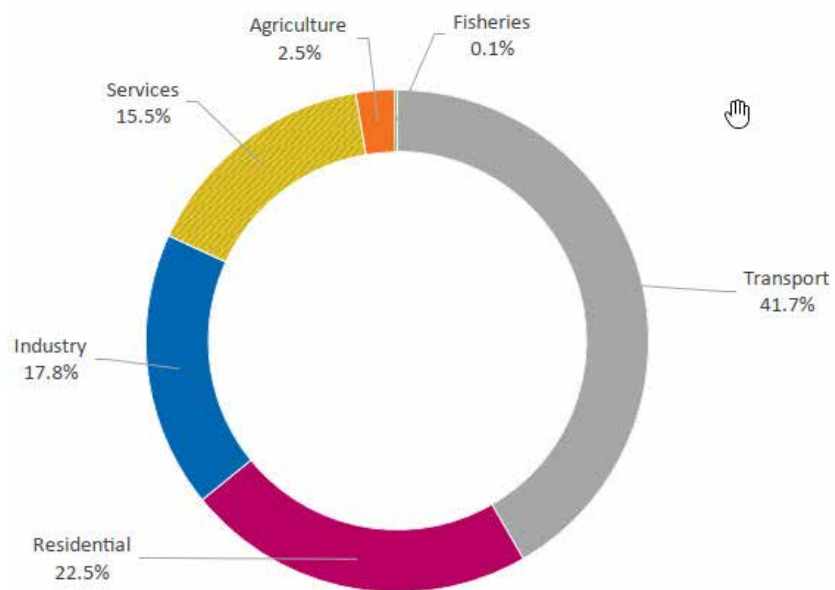
Source: gov - Government announces sectoral emissions ceilings, setting Ireland on a pathway to turn the tide on climate change (www.gov.ie)

Of particular importance is the transport sector objective of reductions of 50% during the 12-

year period spanning 2018 to 2030. Achieving this will require a massive modal shift from roadways to railways, including expansion and modernisation of Ireland’s railway network.

As shown in Figure 9.3, the transport sector uses the most energy by far, highlighting why this sector must be prioritized for decarbonisation via renewable energy.

Figure 9.3: Annual final energy demand by sector (Energy in Ireland, 2023)



“Of particular importance is the transport sector objective of reductions of 50% during the 12-year period spanning 2018 to 2030. Achieving this will require a massive modal shift from roadways to railways, including expansion and modernisation of Ireland’s railway network.”

9.2.2 OFFSHORE WIND POLICY

Ireland’s Programme for Government included the objective that 5 GW of offshore wind generation be installed by 2030. This target will contribute to the wider Government objectives of achieving 80% renewable electricity and a 51% reduction in greenhouse gas emissions by the end of this decade.

It was envisioned that a large proportion of the 5 GW target would be achieved through an initial Phase One of offshore wind development in Ireland, which included the first offshore wind auction that took place in Ireland under the Renewable Electricity Support Scheme – ORESS 1. An auction was launched by EirGrid in December 2022 and completed in June 2023, but only yielded projects with a combined capacity of around 4.4 GW. It is anticipated that some Phase One projects may fail to secure a route to market or development consent, therefore, additional offshore projects will be needed to meet 5 GW by the end of this decade. This transition from Phase

One to a longer term enduring offshore regime will be known as Phase Two. The Department of the Environment, Climate and Communications (DECC) has developed a new framework and policy for Phase Two which was approved by Government on 7 March 2023.

The largest offshore wind development in the world is the Hornsea Project complex off the shore of the East Riding of Yorkshire. Phase 1 began operation in 2019 and has a capacity of 1.2 GW. Phase 2 began operation in 2022 and added 1.4 GW. Phases 3 and 4 are planned, and if built, will increase the capacity of the complex to 6.0 GW. This indicates that large offshore wind is technologically feasible and cost effective for development off of the West Coast of Ireland.

Figure 9.4 Location of Hornsea Offshore Wind Farm (Source: Ørsted)



Figure 9.5 Hornsea Offshore Wind Farm (Source: AZO Cleantech)



9.2.3 GREEN HYDROGEN POLICY

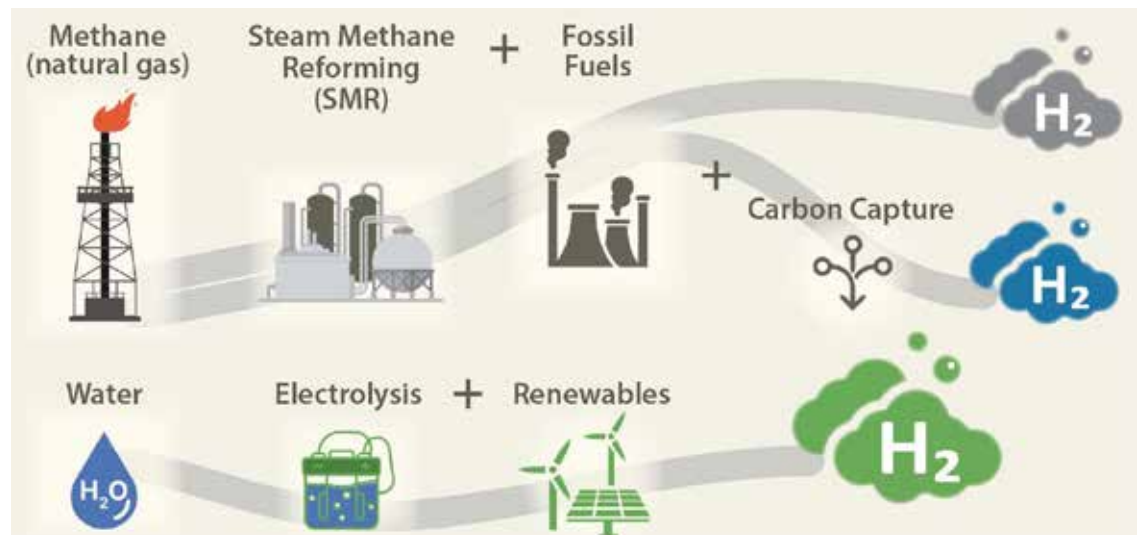
Ireland's National Hydrogen Strategy sets out the strategic vision on the role that hydrogen will play in Ireland's energy system, looking to its long-term role as a key component of a zero-carbon economy, and the short-term actions that need to be delivered over the coming years to enable the development of the hydrogen sector in Ireland.

The goals of the Strategy are:

- Decarbonising the economy, and especially sectors where electrification is not technologically feasible or cost-effective.
- Increasing Ireland's energy security through the development of an indigenous zero carbon, renewable fuel which can act as an alternative to the 77% of our energy system which today relies on fossil fuel imports.
- Developing industrial opportunities, through the potential development of export markets for renewable hydrogen and other areas such as aviation fuel.

In the coming years, renewable “green” hydrogen (See Figure 9.6) is expected to play an important role as a zero-emission source of dispatchable flexible electricity, as a long duration store of renewable energy, in decarbonising industrial processes, and as a transport fuel in sectors such as heavy goods transport, maritime and aviation. It is envisioned that green hydrogen can be delivered to these industry sectors using Iarnród Éireann's railway network.

Figure 9.6. “Grey,” “Blue,” and “Green” Hydrogen by Production Pathway



Source: Institute for Energy Economics and Financial Analysis

The largest green hydrogen plant in the world—Hydrogen City, Texas—is under construction and scheduled to begin production in 2026. It is an integrated green hydrogen production, storage, and transport hub located in South Texas, USA. Hydrogen City will eventually harness 60 gigawatts of solar and wind energy, to produce over 2.5 billion kilograms of green hydrogen per year.

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[9.3] CASE STUDIES IN ZERO EMISSION RAILWAY TRACTION POWER

9.3.1 DEUTSCHE BAHN (DB) ZERO EMISSION RAIL TECHNOLOGY OVERVIEW

Deutsche Bahn (DB) is the national railway company of Germany with perhaps the most aggressive goals in Europe to decarbonise its operations. DB’s proportion of diesel motive power in their fleet is currently around 35%. DB is striving to use 100% renewable power for their traction by 2038 (See Figure 9.7) by implementing wayside electrification, battery-electric powered trains, and hydrogen powered trains (See Figure 9.8).

Figure 9.7. DB’s Railway Renewable Power Supply Goals (Source: DB)

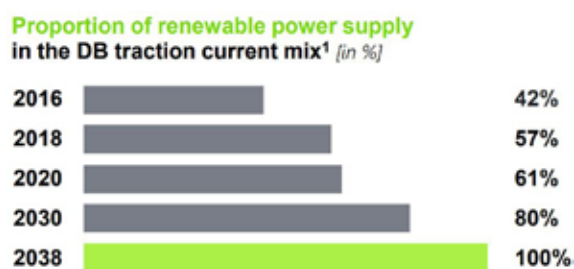
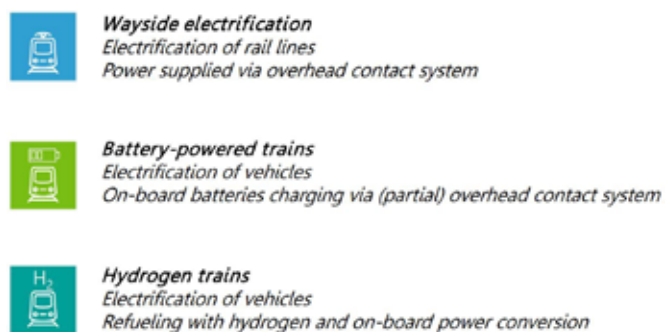


Figure 9.8. Zero Emission Train Types Source: DB

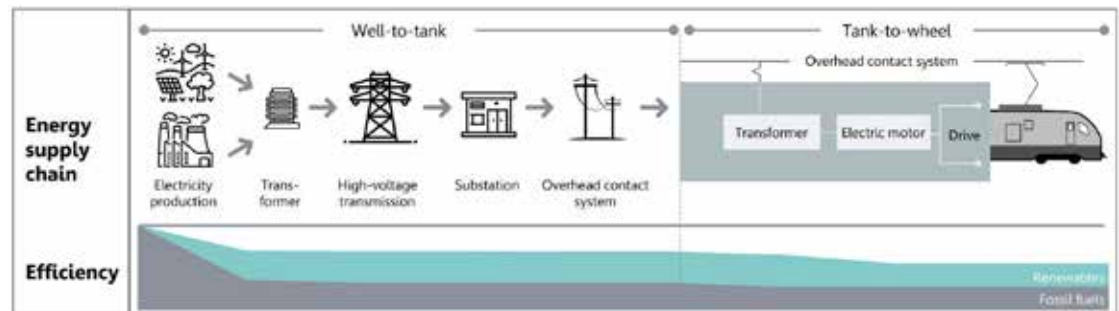


9.3.1.1 WAYSIDE ELECTRIFICATION

Wayside electrification is currently the most common zero emissions technology and is often employed on lines with frequent service, such as metros, and in very high-power demand situations, such as high speed rail. Ireland's DART system employs wayside electrification. It provides the best operational performance with fast acceleration, high speed capability, high tractive effort, and low vehicle maintenance.

The biggest challenge is the expensive wayside infrastructure, which presents particular difficulties for long routes and large networks. The visual impact of electrification infrastructure has led to alternative options in some situations, e.g., in historic city centres. There are many situations where wayside electrification is not feasible due to infrastructure characteristics of the railway network or due to economic considerations. Figure 9.9 shows the energy supply chain associated with wayside electrification.

Figure 9.9 Energy Supply Chain and Efficiency of Wayside Electrification (Source: DB)

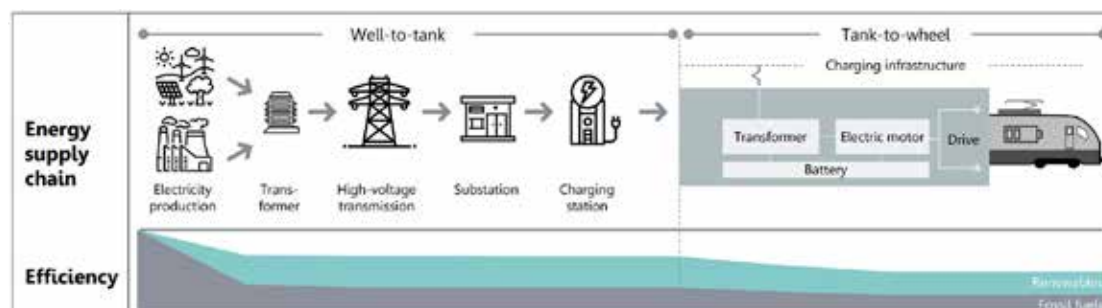


9.3.1.2 BATTERY POWERED TRAINS

To charge, wayside power supply is required, such as sections of electrification or charge bars. Existing wayside electrification can be used to charge batteries and supply traction current on routes where part of the journey is on electrified sections. The typical, practical operating range on batteries is 20-60 miles, followed by charging requiring >45 minutes (if the batteries are close to empty). Much shorter operation, ~2-3 miles, combined with frequent 'flash' charging from infrastructure is possible, and becoming increasingly popular in light rail applications.

Batteries can be used in hybrid powered trains, where two or more power sources are available on the vehicle. The batteries can enable regenerative braking and allow operation of the primary power plant in the most efficient region reducing energy consumption and subsequent emissions. Improvements in energy density, both gravimetric and volumetric, faster charging, and price reductions are anticipated, widening the suitability of the technology to more railway services. Figure 9.10 shows the energy supply chain associated with battery powered trains.

Figure 9.10: Energy Supply Chain and Efficiency of Battery Powered Trains (Source: DB)

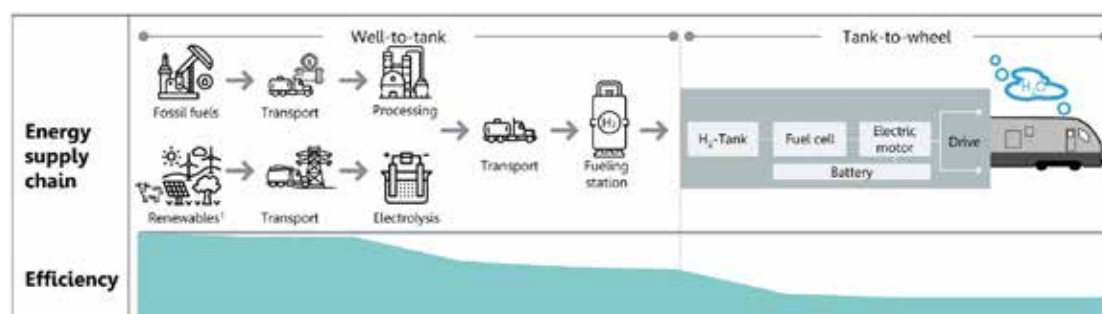


9.3.1.3 HYDROGEN POWERED TRAINS

Hydrogen trains offer good technical performance with similar flexibility and versatility as diesel. Most hydrogen rail vehicles have a hybrid powertrain with batteries. The technology is often economically attractive on routes longer than 20 miles, especially compared to electrification, and where batteries are not practical and can be competitive with diesel when low price hydrogen is available. Low-priced hydrogen is already available at high consumption volumes while renewable hydrogen prices are becoming increasingly competitive, leading to lower operating cost than conventional diesel vehicles.

This technology has great potential for most Irish intercity railway applications because of long ranges combined with relatively infrequent refuelling. Hydrogen could be stored on-board as a gas (the option in most vehicles, including current rail motive power), liquid, or through other means, e.g., metal hydrides. Refuelling time is similar to diesel, for example, ~15min for an intercity train. Significant cost reduction for powertrain components and refuelling infrastructure can be expected. Considering system effects with other sectors—especially renewable power generation (wind, solar)—hydrogen fuelled trains offer the easiest pathway to decarbonising Ireland's intercity rail network.

Figure 9.11: Energy Supply Chain and Efficiency of Hydrogen Powered Trains (Source: DB)



9.3.1.4 DECARBONISING THE IARNRÓD ÉIREANN DIESEL LOCOMOTIVE FLEET

In September 2023 Iarnród Éireann announced that it had signed a contract with DIGAS, a global leader in decarbonisation solutions for the railway sector to retrofit a freight diesel locomotive from diesel fuel to hydrogen as a proof of concept. The purpose of the €1.5m project is to help decarbonise the operations of Iarnród Éireann diesel locomotives, assist the company in meeting its goals as a Sustainable Development Goal champion, increase the competitiveness of the company and reduce carbon exhaust emissions. DIGAS will provide a cost-effective way to introduce a hydrogen in the fleet of existing diesel locomotives by retrofitting diesel locomotives with a specialised internal combustion engine (ICE) hydrogen system

Iarnród Éireann will provide the 071 Class Diesel Locomotive for the conversion as well as make the workshop available for the installation, testing and commissioning activities. DIGAS, will manufacture deliver and install a Hydrogen Internal Combustion Engine (H2 ICE) retrofit kit to convert the diesel locomotive to a hydrogen powered locomotive. The conversion will allow the locomotive to run on renewable, emissions free fuel instead of the diesel fuel. As part of the agreement, the two companies will share technical and commercial information necessary for DIGAS to design, manufacture, install, and support the commissioning of the Hydrogen conversion kit and allow Iarnród Éireann to properly test a retrofitted locomotive.

Figure 9.12 Iarnród Éireann 071 class diesel locomotive near Ballina inland port (N. Enright)



Unlike other hydrogen projects in the rail sector where hydrogen is used to run locomotives via fuel cells or through specially produced hydrogen engines, this project will involve a unique approach where hydrogen will be used in the locomotive's current internal combustion engine. This innovative technology requires minimal change to be done to the locomotive. If successful, the project will indicate a more practical and cost-effective way to decarbonise and run the existing diesel locomotive fleet with hydrogen powered engines.

The project is scheduled for two testing phases across 2024 and 2025. Phase 1 will be focused on static testing of the locomotion to check power and emissions output. Phase 2 will follow in 2025 and focus on service trials of the locomotion out on the rails. All designs and testing standards are subject to approval from the Commission for Railway Regulation (CRR).

9.3.2 CANADIAN PACIFIC HYDROGEN LOCOMOTIVE

In late 2020, Canadian Pacific Railroad (CP) announced that it planned to develop North America's first line-haul hydrogen-powered locomotive. CP's Hydrogen Locomotive Program aimed to retrofit a line-haul locomotive with hydrogen fuel cells and battery technology to drive the locomotive's electric traction motors.

In 2021, CP reported it had expanded the Hydrogen Locomotive Program to three locomotives (two line haul units and one switcher), and would install hydrogen production facilities at two locations to create a "global centre of excellence in hydrogen and freight rail systems" in Alberta, Canada following receipt of a \$15 million 50% matching grant from Emissions Reduction Alberta (ERA). The grant award matched the \$15 million CP already planned to invest in the program in 2021.

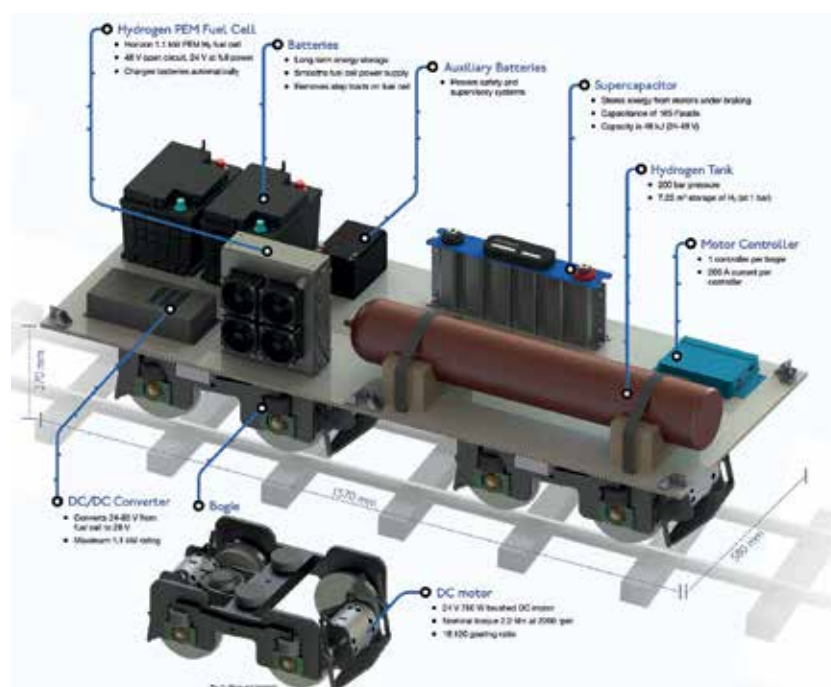
The first home-built unit converted a GMD SD40-2F (No. 1001) and was assigned model “H2 OEL” for “hydrogen zero-emissions locomotive.” The first revenue test run occurred on 28th October 2022 and was the second main line run that year for the unit. No 1001 (See Figure 9.13) uses hydrogen fuel cells and batteries to power its electric traction motors.

Figure 9.13 Canadian Pacific's Hydrogen Locomotive. (Source: Canadian Pacific (CP) Railroad)



In 2023, CP and CSX railroads announced planned collaboration to develop additional hydrogen locomotives through a joint venture for the building and deployment of hydrogen locomotive conversion kits for diesel electric locomotives. As an initial step in the collaboration, CSX plans to convert one of its diesel locomotives using a hydrogen conversion kit developed by CP. The conversion work will be done at CSX's Huntington, West Virginia, USA locomotive shop. A diagram of a hydrogen locomotive is shown as Figure 9.14 below.

Figure 9.14: Diagram of a Hydrogen Locomotive (Source: Warwick Rail Challenge)



9.3.3 ALSTOM BATTERY ELECTRIC AND HYDROGEN MULTIPLE UNITS (BEMUS AND HMUS)

Alstom SA is a French multinational rolling stock manufacturer which operates worldwide in rail transport markets. It is active in the fields of passenger transportation, signalling, and locomotives producing high-speed, suburban, regional, and urban trains along with trams.

9.3.3.1 ALSTOM BATTERY ELECTRIC MULTIPLE UNIT (BEMU)

Alstom produces battery trains for both regional and commuter networks, known as battery-electric multiple units (BEMUs). The power-pack dimensioning and optimisation of passenger trains depends on various parameters such as the length and the topography of the non-electrified line as well as the timetable. Alstom's traction battery system utilises fixed charging stations, overnight charging in depots, fast charging with fixed or flexible pantographs during station dwell times, or from overhead lines while driving. The charging method chosen influences the choice of battery technology and the size of batteries. Figure 9.15 shows Alstom's BEMU while charging.

Figure 9.15: Alstom Battery Electric Multiple Unit (BEMU) (Source: Alstom)



Alstom BEMU trainsets are planned for use in Germany with an operational range of 120km. Eleven, 3-car trains have been ordered and will have high-performance, roof-mounted batteries capable of operating up to 160km/h. The start of operation is planned for the end of 2024.

In 2021, Alstom signed a 10-year framework contract with Iarnród Éireann for up to 750 electric and battery-electric rail cars with a second call-off in December 2022, bringing the total number of BEMUs to 31. The operational autonomy of the battery trains is up to 120km in configurations of up to ten cars. The BEMUs will enter service in 2025 and will be the first modern battery-electric fleet in Ireland.

9.3.3.2 ALSTOM HYDROGEN MULTIPLE UNITS

Alstom produces hydrogen trains for both regional and commuter networks. A hydrogen-powered train can cover ranges up to 1,000 km, is quiet and comfortable, and only exhausts water to the atmosphere. Vehicles using hydrogen can cover longer distances than vehicles with battery traction. Alstom's hydrogen multiple units are already a proven product and have travelled more than 1.5 million kilometres in passenger service in 10 countries.

Hydrogen trains require refuelling with hydrogen from fixed or mobile refuelling stations. The hydrogen is safely stored on the train in special tanks that meet strict safety requirements. To limit local indirect CO₂ emissions during operations, the hydrogen trains can be fuelled by green hydrogen. Figure 9.16 shows Alstom's hydrogen multiple unit trains.

Figure 9.16: Alstom Hydrogen Multiple Unit Train Operating in Germany (Source: Alstom)



Since 2022, two hydrogen-powered fleets are in regular passenger service in Germany—14 trains in the German region of Lower Saxony, and 27 trains in the Frankfurt metropolitan area. Alstom's hydrogen multiple unit trains were shown to run successfully in nine other countries, including Canada and Saudi-Arabia.

In September 2022, an Alstom hydrogen multiple unit train successfully travelled 1,175 kilometres without refuelling its hydrogen tank. This record run demonstrated the effectiveness of hydrogen-powered traction for long-distance passenger transportation.

“If green hydrogen production is strategically developed in rail-served locations, it can be delivered to any point along the Iarnród Éireann network to fuel hydrogen locomotives and railcars at railway hubs, to supply on-highway hydrogen fuelling infrastructure, and to deliver green hydrogen to industrial clients.”

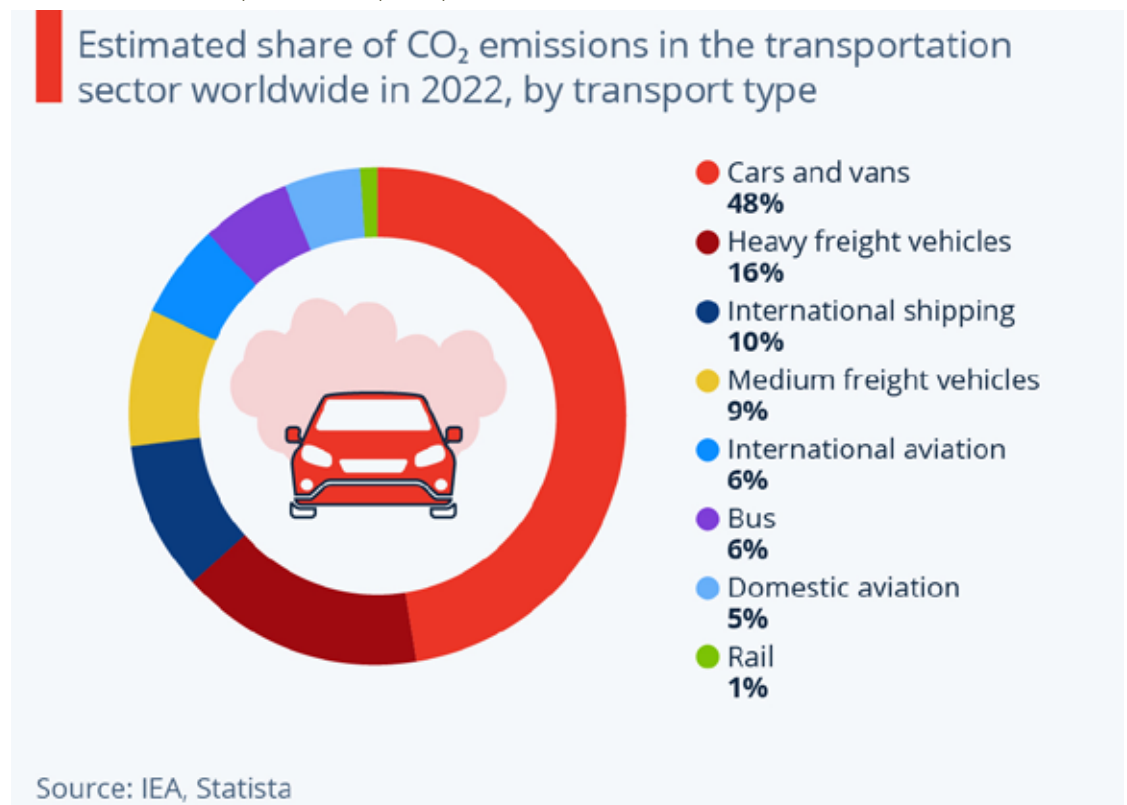
[9.4] CONCLUSION

The information presented in this section shows that although Ireland has failed to meet its 2020 renewable energy targets, an ambitious policy framework is in place to decarbonise the economy to the extent possible. This policy framework relies on significant investment in offshore wind to produce green hydrogen through large-scale electrolysis plants powered by renewable electricity and located at near-shore locations, such as Shannon Foynes Port. If green hydrogen production is strategically developed in rail-served locations, it can be delivered to any point along the Iarnród Éireann network to fuel hydrogen locomotives and railcars at railway hubs, to supply on-highway hydrogen fuelling infrastructure, and to deliver green hydrogen to industrial clients.

Likewise, the transition of railway traction from diesel-fuelled power is occurring rapidly (with battery electric models providing an important bridging technology). Hydrogen fuelled multiple units are now considered to be an industry tested and “off-the-shelf” technology for commuter rail and are operational in two cities in Germany.

These considerations have not been thoroughly contemplated in the All-Island Rail Review with regard to reactivating specific rail lines. In the case of the Claremorris to Collooney/Sligo line, failure to reactivate the segment would likely deprive Sligo and a large portion of the Northwest Region access to a supply of green hydrogen, thereby impeding the ability of the Government to achieve its ambitious 2030 GHG reduction targets and beyond.

Fig 9.17 Rail is the least polluting transport type.





10

A WATERFORD BOUND TIMBER TRAIN NEAR BALLINA (N. ENRIGHT)



Section 10

The case for restoring
the Claremorris-Collooney
ARC link

[10] THE CASE FOR RESTORING THE CLAREMORRIS-COLLOONEY ARC LINK

[10.1] INTRODUCTION

In drawing together the different strands of our analysis of the reasons why the Claremorris to Collooney rail link should be restored, it is clear that the case cannot be proved with standard cost-benefit analysis methodology. Nevertheless, prior to approving major public investments of this kind, formal cost-benefit analysis is mandatory.

In cases where a decision needs to be made about alternative transport modes (such as the construction of Metro-North in Dublin), detailed CBA can be used effectively to guide investment decisions where travel patterns are well established, the required data are available and gaps in existing transport modes need to be explored. However, the challenge in the N&W region of Ireland is that it is a “lagging” region that has fallen dramatically behind the pace of development being experienced in the East-Midland and Southern regions. This “lagging” performance is partially due to the historical legacy of uneven development in the island, but has been seriously exacerbated by the failure to direct sufficient public investment into the region in order to overcome the historical deficit in infrastructure. As a consequence, demographics and enterprise development in the N&W region have been distorted over past decades and the present situation is likely to be a poor indicator of how the region could develop in the future if the infrastructure deficit was addressed.

In carrying out a conventional exercise in cost-benefit analysis it is necessary to form judgements about how the proposed investment project will fit into the economic and social environment where it is being made. For example, if the region currently has a low population density, will it continue to have a low population density? If the towns in the affected region are small and slow-growing, will they continue to be small and slow-growing? If the inhabitants in the region currently look to cars and buses for transport options, will they continue with that pattern of behaviour? If access to regional metropolitan agglomerations is difficult, and traffic is diverted to Dublin, will this distorted pattern of travel continue even if access to regional centres is greatly improved?

To a large extent, the answers to these questions will depend on the assumptions made.

It is useful here to distinguish the two main approaches adopted when making the required assumptions:

Approach 1: The current situation is an equilibrium that is either very likely to persist into the future, or if it changes, it is only likely to change very modestly and slowly.

Approach 2: The current situation is a disequilibrium that is likely to deteriorate if nothing is done and requires robust policy action to reverse.

The manner in which cost/benefit analysis (CBA) methodology was implemented by EY and Arup in their recent reports on sections of the Western Rail Corridor can be characterised as Approach 1. There was little understanding by the consultants of the state of underdevelopment of the N&W region. This lack of understanding was exacerbated by the dearth of solid research into how the three Irish regions are performing, where even the national Project Ireland 2040 strategy was drawn up in a situation where there was a similar dearth of data and analysis. Projections made from the current state of the economy tended to be only marginal improvements that would probably result in the under-developed N&W region lagging further behind the two more developed East & Midlands and Southern Irish regions. Returns on public investment in improving infrastructure in the N&W region would be, at best, modest and possibly zero, from which the conclusion was drawn that rail would only be appropriate and effective for linking large population agglomerations and would play only a very minor role in “regional and rural” areas.

Our analysis in this report uses [Approach 2](#). We seek to understand the current structure and performance of the economy of the N&W region, the reasons why it is “lagging”, and how it can be dynamised and re-integrated into the currently more buoyant national economic performance. We take the commitments of the government to re-balance regional performance seriously and place our evaluation of the benefits of restoring the Claremorris-Collooney/Sligo rail link within that commitment. We look to a future where the infrastructural distortions that caused “lagging” behaviour are removed and the N&W region can achieve its true potential. With the appropriate investment in infrastructure, the future of the N&W region is likely to be dramatically better than the past and present.

[10.2] THE ARUP ALL ISLAND STRATEGIC RAIL REVIEW

Although our main criticism of the Arup AISRR in [Section 2](#) was focused on the inadequate way that it treated “regional and rural” rail lines, it was surprising to find how little effort had been made by Arup even at a national level to examine the future of the rail network in the context of how the Irish national economy is likely to evolve over future decades and how rail recommendations need to be made consistent with how the national economy is developing. Other than a few rudimentary short-term economic forecasts, it ignored the role that rail development could play in ensuring that it supported, and was consistent with, the modernisation of the national economy.

Given the lack of an authoritative national strategic context for the Arup study, it is not surprising that there was absolutely no analysis of the very different situations in the three main Irish regions: the “lagging” N&W, and the more developed E&M and South. Consequently, the Arup analysis of “regional and rural” lines followed [Approach 1](#) above (i.e., nothing much is likely to change in the future) and, unsurprisingly, Arup found little justification for investment in rail infrastructure other than for a new rail link between Letterkenny and Derry and restoration of the WRC Athenry-Claremorris link for freight. Remarkably, the existence of the currently disused 75km railway between Claremorris and Collooney was completely ignored by Arup. Instead, a new line was proposed between Claremorris and Collooney (Draft AISRR Ref. 3.03b) but this proposal was ‘Parked’. In addition, a proposed new rail line linking Galway to Sligo via Ballina (Draft AISRR Ref. 3.03c) was briefly mooted, but quickly eliminated on CBA grounds. Draft AISRR Package 3b – West Coast lists ‘A new 120/km/h electrified single track line between Sligo and Athenry, with hourly Sligo-Galway services’.

The lack of any economic context for the future of the economy into which large-scale rail infrastructural investments were proposed suggests that the Arup model-based transport evaluation methodology was applied in either a static context (i.e., the economy tomorrow is likely to be structured very like today) or in a dynamic context that could be completely misguided (i.e., Dublin will continue to grow massively at the expense of the smaller cities and the regions on the western seaboard will become increasingly irrelevant to the national economic welfare).

“The existence of the currently disused 75km railway between Claremorris and Collooney was completely ignored by Arup. Instead, a proposed new rail line linking Galway to Sligo via Ballina was briefly mooted, but quickly eliminated on CBA grounds.”

Detailed analysis of the manner in which Arup bundled “rural and regional” rail lines into their treatment of major inter-city rail lines (the “spine”) gave rise to some surprising findings. For example, the CBA of the initial Arup Western package of rail proposals produced an isolated benefit-cost ratio (BCR) of only 0.10, far below the level where investment could be justified. However, when the four “regional and rural” packages were culled and assembled into an amalgamated package, the BCR was 1.34, far higher than even the BCR of 0.90 for the Higher Speed inter-city “spine” package in isolation. This reinforces our belief that the “regional and rural” packages were not adequately evaluated by Arup using the formalised transport evaluation model but that the results for the “regional and rural” packages were probably treated qualitatively and are likely to be seriously in error.

[10.3] THE NEED TO RE-VISIT REGIONAL DEVELOPMENT STRATEGY

The regional development context in Ireland today presents development planners with a serious challenge since all five of the major cities designated in Project Ireland 2040 lie either on or south of an east-west axis from Dublin to Galway. Other than the city of Galway in the extreme south of the N&W region, there are no city-like large population agglomerations in the N&W region. In the face of serious spatial demographic distortions of this kind, and confronted with closely related economic distortions, planners need to make a choice between a one-size-fits-all development strategy or a differentiated strategy that tries to address very specific regional needs and to work towards removing the distortions to the development of the island in a more equitable and efficient way.

Our analysis in Section 3 highlighted the fact that the further north one travels in Mayo, the slower is the population growth of its towns. In county Sligo, the destination of a restored Clarendon-Collooney rail line, the town of Sligo was one of the three “large” N&W towns designated in Project Ireland 2040 as a regional growth centre. However, as shown in Section 3, the population of Sligo town has experienced very slow growth over recent decades. It is in the smaller towns lying south of Sligo town where growth has been fastest. Nevertheless, Tubbercurry, in the south of the county, shares the slow growth of adjacent north Mayo towns. The most likely explanation of this distorted population growth pattern is the poor transport infrastructure linking Sligo, Mayo and Galway on a north-south axis to complement the existing rail and road links to Dublin on a west-east axis.

Our discussion of the Mayo and Sligo enterprise sectors in Section 3 highlighted the fact that both counties have long been successful hosts to a wide range of foreign multinational companies, some of which are of very large scale in terms of employment and turnover. In addition, there are a range of smaller entrepreneurial enterprises in the areas of manufacturing and traded market services that suggest the region could have a larger and very dynamic enterprise culture if barriers to development were addressed correctly.

“The most likely explanation of this distorted population growth pattern is the poor transport infrastructure linking Sligo, Mayo and Galway on a north-south axis to complement the existing rail and road links to Dublin on a west-east axis.”

In our review of Project Ireland 2040 and the N&W region RSES, we drew attention to the need for a more searching analysis of how the economies of peripheral counties like Mayo and Sligo actually operate and how the potential for accelerated development could be released by provision of the appropriate infrastructure. The N&W RSES recommended that any priority policy focus in the region needs to include strengthening inter-regional connectivity, through the improvement of inter-urban road and rail connectivity, with a particular emphasis on improved connectivity between the largest urban centres and access to ports and airports, for the movement of both people and goods. We would add the need for greater intra-regional rail connectivity that could be provided by the restoration of the complete Western Rail Corridor.

Two bodies are singled out in Section 3 as being of vital importance to the enhanced development of Mayo and Sligo: Ireland West Airport Knock (IWAK) and the Atlantic Technological University (ATU). We showed that IWAK acts as an international airport link to a wide population catchment area in the N&W region and has the potential in the future to act as an air-freight hub for future exports generated by regional enterprises. IWAK needs to be made accessible by rail with a shuttle bus service operating from Charlestown on the restored Claremorris-Collooney line. ATU is also targeted towards promoting and supporting regional development and educating the future labour force of the region. However, unless the rail links to and from Sligo and south into Mayo and Galway are improved, it will be difficult to attract new industries to Sligo and to allow Sligo to develop as a real regional growth centre. The better connected Sligo is to its hinterland, the more attractive it will be as a third level destination of choice for students from across the region.

“Unless the rail links to and from Sligo and south into Mayo and Galway are improved, it will be difficult to attract new industries to Sligo and to allow Sligo to develop as a real regional growth centre. The better connected Sligo is to its hinterland, the more attractive it will be as a third level destination of choice for students from across the region.”

[10.4] BUILDING ON THE HISTORY OF THE WESTERN RAIL CORRIDOR

Our decision to include a section detailing the history of the emergence, operation and subsequent closure of the Western Rail Corridor was motivated by the realisation that after its closure, the very existence of the disused rail line passed out of local knowledge and its potential for restoration in a new era was largely discounted or ignored.

Dominant modes of transport evolve and change over time. Difficulties of travel by horse and carriage were alleviated by the arrival of canals in the latter part of the 18th century. The arrival of steam trains in the mid-19th century condemned the canals to obsolescence. The arrival of fossil-fuelled car and lorry transport, combined with upgrading and extension of the national road network, challenged the dominance of rail and led to a rash of rail closures from the post WW2 era.

But times change. Who could ever have imagined twenty years ago that the construction of dedicated bicycle lanes on city streets would become a major policy initiative? Or that the existential threat of climate change would have highlighted the fact that rail transport has

the lowest emissions of greenhouse gases of all transport modes other than cycling or walking?

Fortunately, thanks to the forward-thinking of some 160 years ago that created this important rail link along the Atlantic coast, the basic rail infrastructure is still available for adaption and modernisation by a new generation as an effective means of addressing climate change and regional economic development

[10.5] THE SUCCESS OF THE LIMERICK-GALWAY LINK IN THE WRC

The Limerick-Galway route, incorporating ‘Phase 1’ of the Western Rail Corridor, was officially launched on 29th March 2010 and services recommenced on the 30th of March 2010. Many doubted that the line would generate sufficient passenger demand to be viable, particularly since a motorway was constructed between the two cities at the same time and when coupled with enhanced inter-city bus services, competition with the newly re-opened rail link was intense.

After a slow start due to difficulties incorporating the new Limerick-Galway services into the Iarnród Éireann computer booking system, a series of positive measures taken by Iarnród Éireann in 2013-14 led to a steady annual growth in passenger numbers culminating in 531,000 passenger journeys in 2019 and an estimated 700,000 plus in 2023.¹

The current restoration project on the Limerick-Foynes railway marks another significant step in the further development of the broader WRC. The Foynes-Limerick line had been an integral part of the Western Rail Corridor until the last Ballina-Foynes freight train ran in 2001.

The restoration of the Galway-Mayo section of the WRC, has become even more urgent due to vulnerabilities in Ireland’s international supply chains as a result of BREXIT. Such vulnerabilities require improved connectivity and direct access to the south-eastern and southern ports of Foynes, Cork and Waterford. The ongoing rail freight issues in Dublin Port serve to illustrate the urgent necessity of having an alternative route for Mayo and potentially Sligo industries to access the southern ports.

The reopening of the Limerick-Galway rail link marked a significant start in the restoration of rail on a north-south axis, along the Atlantic coast and the Galway-Limerick railway has become the fastest growing rail line in the country. Building on that success, the development of the next phase of the rail corridor from Athenry to Claremorris has recently been recommended in the draft All-Island Strategic Rail Review, with particular emphasis on growing rail freight business from western companies to the southern ports. In a related development Iarnród Éireann has announced the development of a rail freight hub in Castlebar which is expected to come into operation in 2025, with the ultimate aim of serving the reopened WRC to the south.

Restoration of the next phase from Athenry to Claremorris will add even greater connectivity, linking all of the main towns in Mayo to the north-south network while simultaneously enabling businesses to access the southern ports. At this point the logic of planning for its continuation from Claremorris to Sligo is inescapable.

¹ In 2019 there were an additional 140,000 journeys on exclusively Ennis-Limerick commuter services, bringing the total number of journeys on the Limerick-Galway route to 671,000.

Every new link that is added to the corridor will add enormously to the viability and earning power of the route as a whole and will serve to create the infrastructural spine so essential to the development of the Atlantic Economic Corridor and the transformation of the entire region.

“Every new link that is added to the corridor will add enormously to the viability and earning power of the route as a whole and will serve to create the infrastructural spine so essential to the development of the Atlantic Economic Corridor and the transformation of the entire region.”

[10.6] A VIRTUAL TOUR OF THE CLAREMORRIS TO COLLOONEY LINE

As noted previously, the Arup AISRR failed to acknowledge the existence of the disused Claremorris to Collooney line. If a firm of expert consultants commissioned by the Irish government failed to notice this line, then it is quite possible that the general public may also need to be reminded of its existence and its potential. We have therefore included what amounts to a virtual tour of the entire length of the line, for the 75 kilometres (46.25 miles) linking the mainline station at Claremorris to the junction with the Sligo-Dublin line at Collooney.

The journey starts at Claremorris and passes through the towns of Kiltimagh, Swinford, Charlestown, Tubbercurry, Coolaney and arrives at Collooney, the junction with the mainline from Dublin to Sligo. As can be seen from Section 6, the formation is in reasonably good condition throughout considering that maintenance has been minimal apart from some drainage works and periodic vegetation clearance. All of the steel bridges will need substantial renewal or replacement. The stone bridges and the majority of culverts are structurally sound. Vegetation currently covers some stretches but overall, the entire line can be said to be ‘shovel ready’ for clearance, ballasting and the reconstruction of a railway to modern standards. Particularly striking is the footprint of the railway property itself which, were it to be acquired today, would cost hundreds of millions of euro.

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[10.7] CAPITAL COSTS OF RESTORATION

The situation with respect to the Claremorris to Collooney line resembles that of the Ennis-Athenry line prior to its restoration in 2010. Although closed in 1975, unlike many other closed lines it was not dismantled and has never been formally abandoned. It remains in public ownership, although disconnected from the operational rail network at Collooney Junction and at Claremorris.

As was noted in Section 6 the line is officially described as: ‘Not abandoned and required for future use by Iarnród Éireann’. All of the public road bridges are inspected every two years. To deter encroachment and defend against adverse possession claims, Iarnród Éireann periodically runs road/rail vehicles with flanged wheels to prove it is still a railway and records these events.

The task of preparing a comprehensive assessment of the engineering issues involved in restoring the Claremorris to Collooney line to full use will require a very detailed survey of the existing infrastructure and of the areas where remedial work would be needed. [Section 7](#) of our Report represents a first attempt to initiate that process and to outline what is likely to be required. Preliminary costings are provided, based on information available from the earlier restoration of the Ennis-Athenry line, suitably indexed for inflation and enhanced modern safety requirements.

The main elements of restoration include permanent way works, signalling, level crossings and passenger facilities. For example, the existing line would have to be re-laid with continuous welded rail laid on concrete sleepers, as was the case for Ennis to Athenry. Other aspects of the line will also require renewal, such as bridge repairs, culvert repairs, drainage, etc. Signalling equipment, associated power supplies and telecommunications/transmission networks will need to be provided at Collooney, Charlestown, Claremorris and at remotely monitored level crossings. Several level crossings traverse national primary and secondary roads and would have to be installed. Stations at the stops along the line would have to be renewed and platforms repaired.

Preliminary estimates of travel times on the restored line from Sligo to Galway are presented in Section 7. A journey time from Claremorris to Sligo of 63 minutes is achievable (allowing for a 120 km/hr line speed and one minute stops at all intermediate stations). That would give a journey time of less than 2 hours from Sligo to Galway.

The total Cost of Works required for the re-opening of the Claremorris to Collooney line (including preliminary & enabling works) is estimated as €343.1m. A contingency of 20% brings this to €411.72m. This amounts to €5.5m per kilometre of restored track.²

[10.8] BENEFITS OF RESTORATION

In [Section 8](#) we addressed the challenge of quantifying the likely benefits that would be associated with the restoration of the link from Claremorris to Collooney. An important part of these benefits will be the possibility of switching a significant element of current road transport to rail, and the revenue from passenger and freight operations that could be generated to support the rail services. But more importantly, the provision of such a new, efficient and cost-effective transport mode that links the towns located on the north-south axis of the Atlantic Economic Corridor (AEC) is also likely to generate considerably greater interaction between these towns than at present. The lack of high quality north-south transport infrastructure in this region has served to isolate towns both from their neighbouring towns and from other towns along the north-south axis.

² By way of contrast, the reported cost for constructing the 20km Dublin MetroLink is €10 billion or €500 m per km. The cost of constructing less than one kilometre of the Dublin MetroLink from St. Stephen's Green to Charlemont is in the region of €600 million.

Passenger demand projections:

In [Section 8](#) we first examined the question of forecasting revenue benefits from passengers on a restored Claremorris-Collooney line. Of course, when this line becomes operational for passengers, it will complete a much longer network extending up and down the west coast and providing quicker rail links to the cities of Galway and Limerick and to Sligo town itself, one of the three largest towns in the N&W region.

An attempt was made in the Arup AISRR to forecast passenger demand on all of the rail routes examined, including the “regional and rural” routes. We reviewed the Arup methodology and found that it suffered from many of the same flaws that we had uncovered in the Arup CBA (as discussed in [Section 2](#)). We have characterised the Arup methodology as [Approach 1](#), where the current lagging regional situation is assumed to be an equilibrium that is likely to persist into the future. This approach will inevitably generate very low rates of passenger demand, as Arup found when they applied the methodology.

As with the Arup CBA, we extracted the separate “West” package from their analysis and found that their projections showed that almost nobody would travel by rail (refer Table 8.2). However, the amalgamated, culled set of all four “regional and rural” packages produced high demand. We found that the logic underlying these projections was difficult to accept since they were generated purely by the passenger demand “driving” variables listed in Section 8 and took no account of capital and operating costs of the type that feed into the cost-benefit analysis that was previously examined in Section 2. Hence, demand supported by the total of the “isolated” regional and rural packages should logically have been higher than that supported by the aggregate “isolated” culled version of the larger combination of packages. A set of “regional and rural” packages of questionable usefulness could, indeed, generate a lower BCR than a subset of these packages. However, logically it cannot support fewer passengers. If our interpretation of the Arup analysis is correct, there appears to be an inconsistency in these results, pointing, perhaps, to a more pervasive incorrect handling of passenger demand projections in the “regional and rural” packages.

After examining how Arup projected passenger demand from 2019 out to 2060 we drew two troubling conclusions:

First, we concluded that their methodology may have been appropriate for projecting inter-city demand or demand between existing stations on lines that connected the regions with the seven cities and had existing heavy usage. However, when applied to analysing new stations that connected regions and adjoining counties with each other where no rail service had operated for decades, their model greatly understated both the potential passenger demand and the wider regional development benefits.

Second, we concluded that the Arup “Trip Rate Model” appeared to have been based on town population data that are low and incorrect. The 2km and 5km catchment areas used by Arup are far too small in a regional setting where towns are separated from each other by greater distances. Unlike in large urban areas, where many alternative modes of transport are available and population is more concentrated, people living in the N&W region will seek out the nearest railway station and are prepared to drive considerable distances within their region in order to avail of long-distance rail travel.

“Unlike in large urban areas, where many alternative modes of transport are available and population is more concentrated, people living in the N&W region will seek out the nearest railway station and are prepared to drive considerable distances within their region in order to avail of long-distance rail travel.”

In projecting future passenger demand we need to adopt a perspective that looks to the future evolution of the region once some of the barriers to faster development are removed. The restoration of rail connectivity on a north-south axis from Sligo to Galway and further south would remove a huge barrier and would assist the region to develop more rapidly and catch up with Ireland’s more advanced regions. To illustrate this we have presented some conjectural population projects for the northern towns that would be served on the restored Claremorris-Collooney line, basing these on the recent dynamic population growth of towns in mid and south Mayo. The purpose of these population projections is to stress the point that future Irish population growth is very likely to be very different from growth in the more developed and already densely populated EU member states. So, we need to plan for that now.

In the coming decades our national population is likely to grow at rates that have not been experienced previously, and if policy makers begin to take regional development seriously, that growth is likely to be spread more evenly over the national territory than it has in past decades. Any strategic planning of the rail system in Ireland needs to recognise this fact and should not be based on the kind of marginal projections used by Arup that take no account of the current state of the economies of the regions and of the priority assigned in official planning strategies to developing these regions in a more balanced way. If a forward looking approach to the strategic planning for future rail infrastructure in the N&W region is not adopted, with an approach that simultaneously anticipates faster growth and assists it, investment in rail infrastructure will remain difficult to justify. Any Approach 1 type of assumptions of the kind made by Arup (i.e., that the N&W will continue to experience low population growth and will lag further behind the more developed eastern and southern regions), will simply become self-fulfilling.

Other associated benefits of restoration:

The Department of Transport’s Common Appraisal Framework (CAF) sets out various methods that attempt to quantify the monetary value of other associated benefits of transport projects, including reduced noise, improved local air quality, reduced emissions of greenhouse gasses (GHGs), physical activity benefits, reduced collisions (safety), net transport user benefits, and direct and indirect impacts on public finances. For the reasons described previously in this report, it was not possible to carry out detailed quantitative analyses of these benefits for the Claremorris to Collooney/Sligo line due to a lack of up-to-date and reliable data.

However, the CAF also supports the production of a Project Appraisal Balance Sheet (PABS). The PABS includes an element where qualitative statements are made regarding the benefits. In Section 8 we evaluated each environmental factor qualitatively in that way, making conclusions only about whether the net impact is likely to be positive (i.e., a benefit), or negative (i.e., a disbenefit), and where possible, whether the magnitude of the impact is likely to be significant. The conclusion arrived at was that the restoration of the rail line would produce modest positive benefits under all of the headings examined.

This is consistent with our previous report which actually quantified these benefits in the case of restoration of the Athenry to Claremorris line.³ However, it is certain that as the restrictions on the use of fossil fuels in transport become ever tighter in coming years, these currently marginal benefits arising from a switch to rail are likely to increase dramatically.

Rail freight benefits:

As discussed in Section 8, there are currently three main freight customers of Iarnród Éireann. The first, International Warehousing & Transport (IWT), chartsers six container trains weekly making round trips between Ballina and Dublin Port with an average payload of 700 tonnes. The second, Coillte, a state owned commercial forestry business, chartsers two/three trains weekly for the carriage of bulk pulpwood from Ballina and Westport to their Smartply Plant at Waterford. The third, XPO Logistics, operates two round trips weekly between Ballina and the Port of Waterford.

The present IÉ track infrastructure is predominantly single track and is subject to congestion where train movements increase. In the case of traffic to and from Mayo, the current routes for both Dublin bound and Waterford bound rail traffic are increasingly congested. The 205 km railway from Portarlinton to Ballina is single track. Re-use of the Athenry to Claremorris section offers a de facto double track access as far west as Claremorris, which is just 50 kilometres from Ballina. The continuing expansion of Dublin's rail commuter belt is likely to further increase congestion on the network east

of the Shannon whereas the restoration of the rail link between Mayo and Galway and subsequently between Sligo and Mayo, linking in to the existing rail route to the South, will divert new freight traffic destined for southern ports away from the Greater Dublin Area.

The railway line from Sligo through Mayo and Galway to Limerick, Cork and Waterford, offers considerable capacity for both passenger and rail freight. Restoration of the Collooney-Athenry link will enable traffic to the existing rail-served Port of Waterford and planned rail connections to Shannon Foynes and Cork, ensuring a better overall utilization of the rail network.

“Restoration of the Collooney-Athenry link will enable traffic to the existing rail-served Port of Waterford and planned rail connections to Shannon Foynes and Cork, ensuring a better overall utilization of the rail network.”

The only intermodal (i.e., container) rail freight traffic on the island of Ireland today consists of the daily operations between Mayo and Dublin/Waterford. All Waterford round trips from Mayo must currently travel via the Greater Dublin Area on a circuitous route that is 40 kilometres longer and subject to higher Track Access Charges than would be the case if the more direct and less congested route via Galway and Limerick were used. Ballina is currently the only rail freight container handling facility on the entire Iarnród Éireann network, and is Ireland's only inland port.

In the post-Brexit era there will be increased use of our southern ports for importing raw materials and exporting finished product to the continent. Enterprises located in the N&W region need to have direct rail access to these ports. Forcing these enterprises to rely wholly on trucks for access to these ports will inevitably carry a heavy environmental penalty. Many

enterprises in the N&W region are already calling for easier access to rail freight facilities as they face demands from their European customers that they reduce their carbon footprint.

Rail freight in Ireland generates approximately €1.5m gross profit annually. Customers are subject to one of the highest Track Access Charges in the EU for use of the railway network. It is not surprising therefore that Ireland has the lowest use of rail freight in the EU.

Mayo inter-modal trains currently contribute to carbon savings by displacing approximately 15,000 long-distance lorry movements involving over 4.5 million road kilometres annually. It may be extrapolated that intermodal trains on the WRC would displace over 9,000 long distance lorry movements involving 2.5 million road kilometres annually from the start of operations. Rail transport of freight uses 15-25% of the direct energy per tonne-kilometre compared with transport by road. However, unlike most EU countries Ireland offers no state aid or subsidies towards rail freight.

The restoration of the rail link between Mayo and Galway and subsequently between Sligo and Mayo, linking in to the existing rail route to the South, will help to address one of the government's headline priorities, i.e., minimising the impact of BREXIT on trade and the economy in a timely and cost-effective manner. It will also offer new opportunities for industry in Galway, Clare, Limerick and Tipperary to access rail freight while freeing up paths for more passenger services on the radial Dublin - Westport/Galway/Sligo routes, which will continue to be utilised for Dublin Port traffic.

[10.9] THE ROLE OF IRELAND'S RAIL NETWORK IN DECARBONISING THE TRANSPORT SECTOR

Over a time horizon of about 50 years both the regional economy and the urgency to decarbonise are likely to evolve and change dramatically. Marginal changes in CO₂ emissions are likely to be completely inadequate in the face of the anticipated need to reduce drastically the use of fossil fuels. Furthermore, a transition from fossil-fuelled cars, buses and HGVs to electrically powered vehicles for road use will only address the challenge partially, since the very manufacture of such vehicles in the required numbers will also use up resources and generate CO₂ emissions. Realistically, any drastic reduction in the number of such road-based vehicles, be they fossil-fuelled or electric, can only be accomplished through a switch to rail, with road use for shorter journeys and to access the rail network nodes. In Section 9 of our report we present a forward looking treatment of how the evolving technology of hydrogen-powered trains could produce a massive reduction of CO₂ and other emissions from the transport sector. The transport sector is currently the largest user of net fossil fuel consumption in terms of its final demand, absorbing about 42 per cent of total energy usage. However, while electricity is increasingly being produced from renewable sources, the share of renewably sourced energy in the transport sector is very low. A shift to rail, and particularly to hydrogen-powered rail, would produce a dramatic shift in this pattern.

[10.10] CONCLUSION

In this report we have presented our analysis of the benefits that are likely to arise from the restoration and operation of the Claremorris-Collooney link of the WRC. Without access to resources and institutional assistance (e.g., from IÉ and the NTA) to carry out a more detailed financial appraisal starting from basic principles, we have been obliged to work largely within a qualitative methodological framework.

An area of our discussion of likely benefits that is least satisfactory relates to future revenue that would be generated from passengers. To treat the line restoration as merely an additional transport mode to those currently available (i.e., cars and bus/coaches), intended mainly to serve people living close to the rail line running from Claremorris to Collooney, would be to underestimate seriously the potential demand for rail passengers. Re-establishing a rail connection between north-western Mayo and Sligo to south Mayo, Galway, Limerick and further south would offer the prospect of wider network benefits that could support a more dynamic economy in the whole region, but specifically in the lagging north western part.

There are a wide range of other benefits that are associated with switching transport modes from road to rail. However, narrowly based cost-benefit analysis is only able to handle monetised benefits associated with transport mode switching between the available transport modes which are treated in a fairly static way. Such analysis is complicated and technical, and makes large demands on data that derive from historical travel patterns where all that has changed is the provision of an additional transport mode (i.e., rail), and the quantified/monetised benefits will always tend to be very small.

There are wider, more serious flaws with the use of cost-benefit analysis in the context of an island-wide strategic plan for renewing the rail network (as in the Arup Report), but also when evaluating any isolated part of that network (such as Claremorris-Collooney line restoration). As discussed in [Section 3](#), a more relevant context within which to evaluate the full restoration of the WRC is a regional development perspective where the rail line serves a transformational role in linking the towns of north Galway, Mayo, and Sligo/Leitrim/Roscommon on a north-south axis and strengthens the regional economy. Over a time horizon of about 50 years both the regional economy and the urgency to decarbonise are likely to evolve and change dramatically. Marginal changes in CO₂ emissions are likely to be completely inadequate in the face of the anticipated need to reduce drastically the use of fossil fuels. Furthermore, a transition from fossil-fuelled cars, buses and HGVs to electrically powered vehicles for road use will only address the challenge partially, since the very manufacture of such vehicles in the required numbers will also use up resources and generate CO₂ emissions. Realistically, any drastic reduction in the number of such road-based vehicles, be they fossil-fuelled or electric, can only be accomplished through a switch to rail, with road use for shorter journeys and to access the rail network nodes.

“If the N&W region is provided with appropriate transport infrastructure that knits together its dynamic towns on a north-south axis, rapid development can be expected and the successful pattern of the Limerick-Galway rail line is likely to be replicated.”

Finally, an in-depth, comprehensive, forward-looking analysis, carried out over a time horizon of some 40 years, of the likely benefits of restoring the Claremorris-Collooney line needs to be undertaken as a matter of urgency. In the short term, the costs of restoration

will dominate the analysis and the switch to rail may be slow. However, the experience of the success of the restored Limerick-Ennis-Athenry-Galway line, as documented in [Section 5](#) suggests that the benefits of rail are soon recognised by the public, and usage can rise quickly and dramatically. There is no reason to believe that a restored Claremorris-Collooney line would be any different. If the demographics of Mayo and Sligo remain largely unchanged, except for unbalanced population growth in their towns (as documented in [Section 3](#)), then the benefits of rail restoration will be modest.

However, if the N&W region is provided with appropriate transport infrastructure that knits together its dynamic towns on a north-south axis, rapid development can be expected and the successful pattern of the Limerick-Galway rail line is likely to be replicated.



An aerial view of Sligo (Maciej Oledski)
Iarnród Éireann Intercity Railcar (N.Enright)
Metal overbridge near Kiltimagh (P. Bowen-Walsh)
Passengers for Limerick boarding at Athenry (N.Dinnen)
Rail freight at Port of Waterford (PoW)

