



# PROPOSAL FOR LIGHT RAIL IN CORK CITY

CIARÁN MEERS | MARCH 2019



# Table of Contents

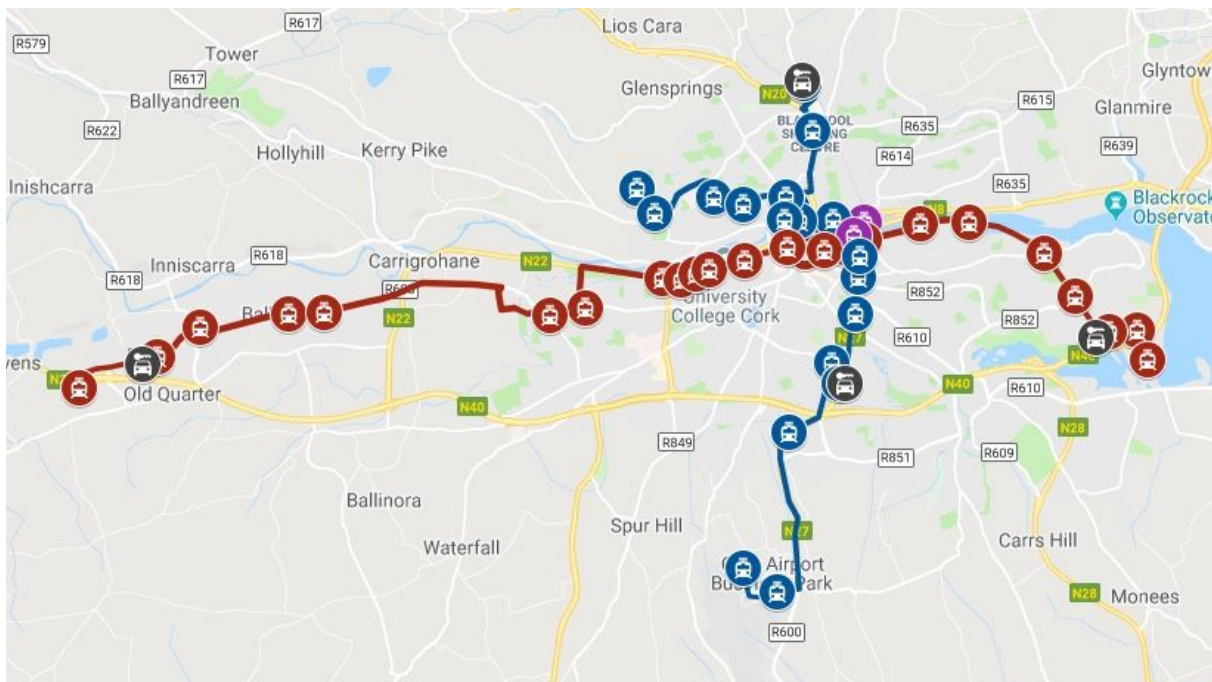
- I. System Maps**
- II. Glossary of Terms and Acronyms**
  
- I. Proposal Overview**
- 2. Other Proposal Information**
  - 2.1. Nature of Proposal
  - 2.2. History
- 3. Necessity for Light Rail**
  - 3.1. Necessity for Light Rail
  - 3.2. Population Increases and Service Strain
  - 3.3. Citywide Links and Future Development
  - 3.4. Road Safety
  - 3.5. Journey Times
- 4. Why Light Rail**
  - 4.1. Unsuitability of Other Systems
  - 4.2. Lane Separation
  - 4.3. Costs and Funding
- 5. Route Overview**
  - 5.1. Connection Objectives
  - 5.2. Red Line
  - 5.3. Blue Line
  - 5.4. Future Extensions
- 6. Other Information**
  - 6.1. Potential Ridership
  - 6.2. Tram and Technical Details
  - 6.3. Stop Design
  - 6.4. Branding
- 7. Integration with Public Transportation**
  - 7.1. Bus Transportation
  - 7.2. Cork Suburban Rail
  - 7.3. Air Transportation
  - 7.4. Cycling
- 8. Problems and Challenges**
  - 8.1. Peripheral Construction
  - 8.2. Parking
  - 8.3. Eminent Domain
- 9. Conclusion**
- 10. Indices and Contact Information**

## System Maps

Interactive version can be found on [www.corkluas.wordpress.com](http://www.corkluas.wordpress.com)

Key :

- Red - Red Line
- Blue - Blue Line
- Purple - Areas on both Red and Blue Lines
- Red Circle - stop on the Red Line
- Blue Circle - stop on the Blue Line
- Purple Circle - stop on both Red and Blue Lines
- Gray Circle - Park and Ride area
- Gray polygon - Park and Ride area

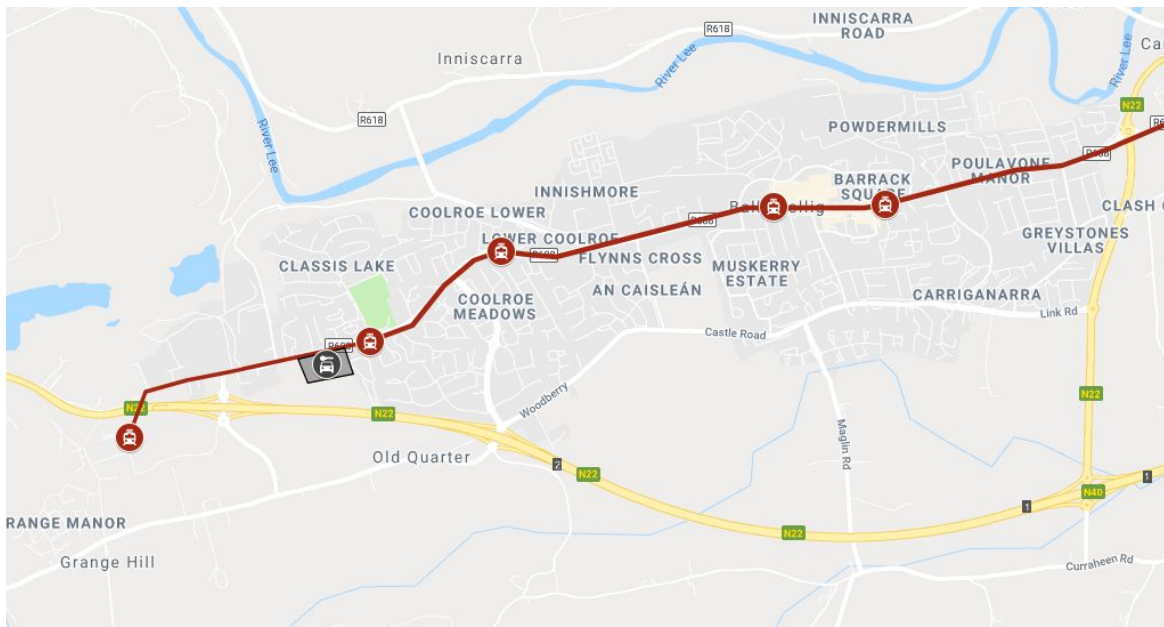


overall system view

## Proposal for Light Rail in Cork City



map of the city centre

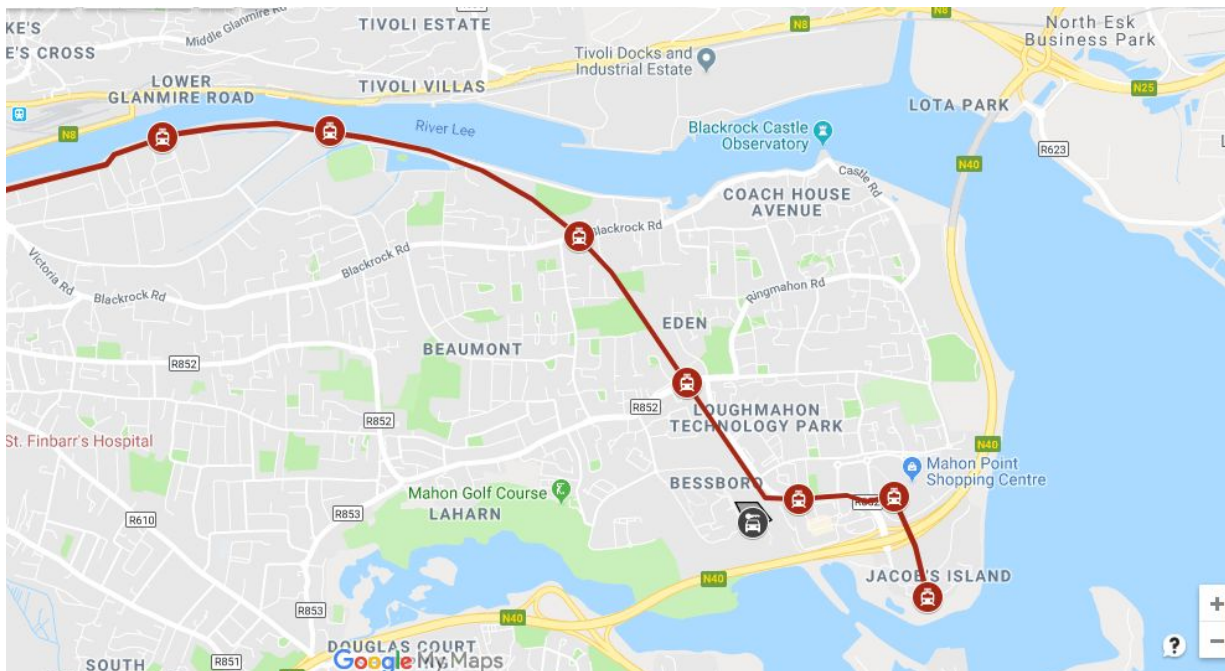


Map of the Ballincollig/Western area

## Proposal for Light Rail in Cork City

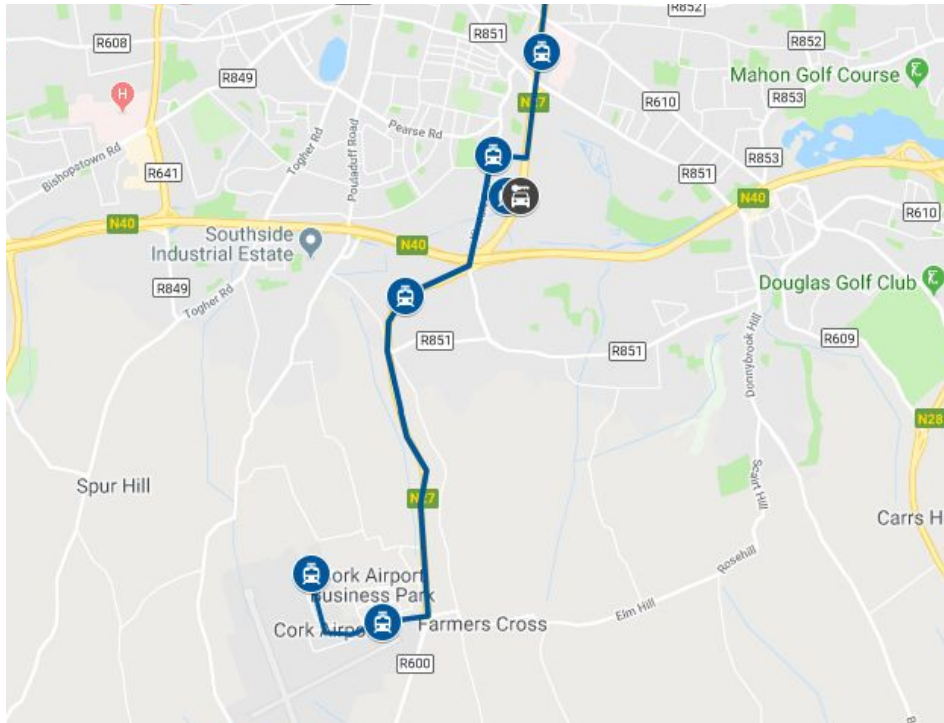


Map of the Bishopstown/UCC area

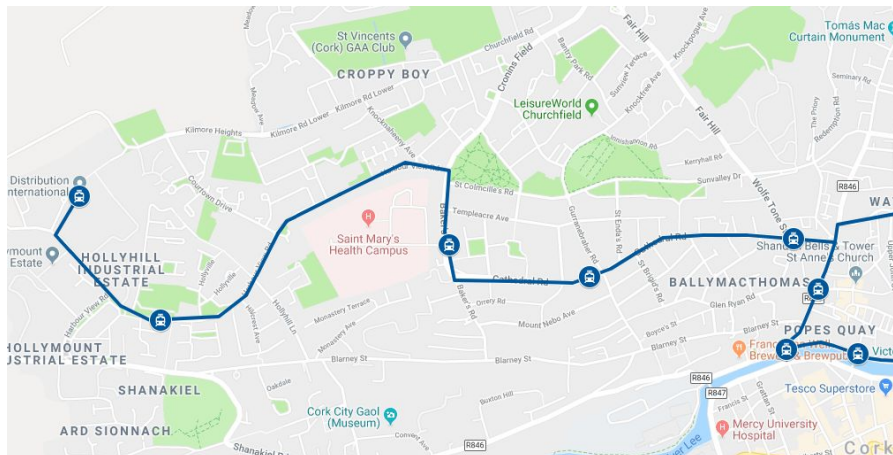


Eastern end of the system

# Proposal for Light Rail in Cork City

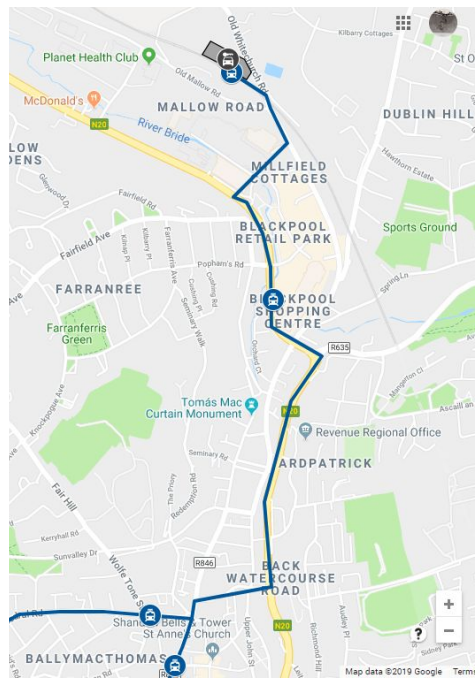


**Southern and Airport end**



**Northeastern Hollyhill end of the system**

## Proposal for Light Rail in Cork City



Northern and Blackpool end of the system

## **Glossary of Terms and Acronyms**

**Bus Transportation** - The use of buses as a form of mass transportation to bring passengers along a set route.

**Bus Éireann** - The state-run company which operates bus services in the Republic of Ireland. In the Dublin Region, these services are provided by sister company **Dublin Bus**. City & Town Services are operated in Cork, Galway, Limerick, and Waterford, as well as in several larger towns.

**Bus Lane** - A designated lane on roads which only permits usage by buses. These may merge in and out of mixed-traffic. Taxis are also permitted to use bus lanes.

**BusConnects** - A government plan to put DBCs in Dublin City and surrounding areas. Consultation is currently underway. Plans are also being considered for Cork, and Galway.

**Bus Rapid Transit [BRT]** - A form of mass transit that uses buses along lanes separated from traffic.

**Designated Bus Corridor [DBC] / Designated Bus Lane [DBL] / Core Bus Corridor [CBC]** - A bus lane that is entirely separated for the length of its route, usually used in forms of Bus Rapid Transit.

**Quality Bus Corridor [QBC]** - A lane-separated bus corridor designed to give priority to buses. 16 of them are found in Dublin.

**Connecting Europe Facility (CEF)** - An EU fund aimed at investment in infrastructure and transportation throughout Europe. It operates through the provision of grants and financial agreements.

**Cork Suburban Rail [CSR]** - The heavy rail commuter service operating between Cork City and suburban areas in the east. Routes connect Kent Station to Mallow, Cobh, and Midleton.

**Commuter Rail** - A form of rail transit aimed at connecting suburban areas with city centre areas.

**Contactless Payment** - The use of technology allowing the transfer of small sums of money in payment services without the need for manual input. Involves the use of NFC technology.

**Near-Field Communication [NFC]** - A method of communicating between devices through use in proximity to each other. Frequently used in payment or connectivity services.



## ***Proposal for Light Rail in Cork City***

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**CPO [Compulsory Purchase Order] / Eminent Domain** - The directive of the government to acquire private property from property owners. Compensation is provided.

**Dublin Suburban Rail** - A five line network that service suburban communities in the Greater Dublin Area. It includes the DART, as well as four commuter lines stretching into Kildare, Wicklow, Louth, Wexford, Laois, and Meath, as well as a limited service in Armagh.

**DART [Dublin Area Rapid Transit]** - A heavy rail rapid transit service running along Dublin's eastern shore.

**DART Underground** - A proposed section of the DART which would run underground through Dublin City Centre.

**Emerging Preferred Route** - The route selected by transit authorities before public consultation. Due to other factors, namely public input, it may be changed before construction begins.

**European Regional Development Fund [ERDF]** - An EU fund with the purpose of using funds from richer regions in the EU to develop infrastructure in poorer regions, with the intent of attracting industry and employment.

**Heavy Rail** - The traditional train systems which form the national network.

**Integrated Ticketing** - The ability to use a unified payment system on a number of different forms of transportation, such as rail, bus, and tram.

**'Ireland 2040' Project** - An infrastructure plan from the Fine Gael government aimed at planning for the growth of Ireland over the coming 20 years. These plans include several relating to transport infrastructure, including extensions to the Luas, DART, and national rail services. Crucially, also pledges the development of a mass transportation corridor in Cork City.

**Light Rail** - A form of mass transportation in which rail lines are laid into roads to permit certain trains modified for such purposes to travel upon. They are frequently used as a way of transporting people from place in place in areas with sufficient demand. They operate at a higher capacity than most buses, and are usually given complete separation from the regular flow of traffic.

**Line Extension** - The addition of additional services to an existing mass transit system, usually in the form of additional track and stops at an existing end of the system.

**Luas** - The Luas is the light rail system currently operating in Dublin City. It possesses two routes running through the city centre to areas elsewhere in the city.. It opened in 2004.

**Luas Green Line** - The Green Line is one of two routes of Dublin's light rail system, the Luas. It runs from Broombridge in the north of the city, to Bride's Glen in the south.

**Luas Cross City** - A completed project that connected the Red Line and the Green Line in the City Centre. It is the longest addition to the Luas system since its opening.

**Luas Red Line** - The Red Line is one of two routes of Dublin's light rail system, the Luas. It runs from two spurs, Tallaght and Saggart in the southwest of the city, to The Point in the east of the City Centre.

**MetroLink** - A planned urban heavy rail network in Dublin City. Part of it is to run underground beneath the city centre. Plans were formerly known as Metro North and Metro South. Though expected to proceed, its exact fate is currently undecided.

**Not In My Backyard [NIMBY]** - Objections to infrastructural and transit construction in a given area given by those opposed to such developments in the area.

**National Transport Authority [NTA]** - The transportation authority for the Greater Dublin Area. It does not operate public transportation itself, but rather contracts transport services to other transport authorities. It operates services nationwide under the brand **Transport for Ireland [TFI]**.

**Public Private Partnership [PPP]** - The use of capital funds from private companies as a means of generating short-term revenue for use in infrastructure projects. The money is paid back over a longer period of time.

**Real Time Passenger Information [RTPI]** - The provision of information to passengers regarding the location of public transportation vehicles, usually taking the form of signs displaying the amount of time the vehicle is away from the waiting passenger. Can be integrated at stop level or through the use of mobile phone apps.

**Transport Infrastructure Ireland [TII]** - The national organization with responsibility for road and transportation infrastructure in Ireland.

**Transit Oriented Development [TOD]** - a form of urban planning which centres transit links in the development of housing, business, or leisure functions, as a means of ensuring these areas are well connected and attractive to potential consumers.

**Tram** - Refers to the train itself which runs on the light rail system.

**Streetcar** - A form of rail-based street transportation, similar to light rail, where the system runs in mixed traffic flow, over a shorter distance, with more frequent stops. More commonly found in the USA.

## **1.0 | Proposal Overview**



*Mockup of light rail running along Washington Street'<sup>1</sup>*

Due to the size of the greater Cork City area, and the future expectations of growth, a lot of change is going to become necessary in the coming years, across a wide variety of areas. One which will become an increasingly large concern is the future of public transportation. Increases in the amount of people in Cork City will put further strain on a system of public transport that is barely able to handle current capacities. Several solutions to this are available. In this document, I am proposing the construction of a two-line light rail system, similar to Dublin's Luas, as a solution. The creation of a light rail transportation network can help link the main city area with the growing amount of people in the suburban areas in an environmentally conscious and efficient fashion.

Cork City has recently undergone a number of transport initiatives, such as a reformation of the Park and Ride, as well as incentives to increase bus ridership. While these are welcome developments, they are not going to be enough to keep up with expectations of growth - it is expected that over half a million people will live in the expanded Cork City by 2050. Such transportation services will likely be strained to a greater degree in the near future, and will only grow more over time.

Luckily Cork can learn from both Ireland and abroad - when Dublin was faced with a similar problem, the creation of the Luas helped to ease congestion and to mitigate the effects of population growth on transport networks. The Luas has been a certain success - ridership has increased year upon year, and further expansions are being proposed to the Dublin system. The efforts of Dublin can help to provide the blueprint for the processes and procedures of a similar system in Cork. The proposed system in Cork can benefit from the knowledge of a variety of difficulties, successes,

## *Proposal for Light Rail in Cork City*

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and challenges that have graced the Luas in its fifteen year history. Throughout this proposal, reference will be made to the Dublin Luas and other systems at times.

While there are of course challenges and difficulties to such a scheme, I hope to outline why it is clear that the benefits that the city and its people will see far outweigh any deficits.

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## **2.0 | Other Proposal Information**

### **2.1 - Nature of Proposal**

My proposal is a citizenerial input with regards to the future transportation developments in Cork City. As there has been little movement on plans for the future of transportation, pending the publication of the Cork Metropolitan Area Transit Survey, I decided to take measures into my own hands with the development of my proposal. Cork City is in need of some foresight of planning with regards to transportation. I feel that it is possible to help advance public discourse regarding transportation plans in the future through the exchange of ideas and attempts to draw attention to the possibilities that can be had for the city. In addition, other projects relating to transportation, such as Dublin's BusConnects, have all had lengthy periods for citizen input after initial details are announced. For Cork, it may be too long to wait.

As would be expected, due to my own limited scope as an ordinary citizen, I lack any of the information that would likely be available to members of government, whether civil servants, councillors, or higher ranking members. While I am quite aware that this plan is unlikely to be advanced in its current form, I believe that it is better for discussion on such a project to advance. Providing input on how such a system would be run is vital to advancing public perception of how transport in Cork City can look.

## **2.2 - History**

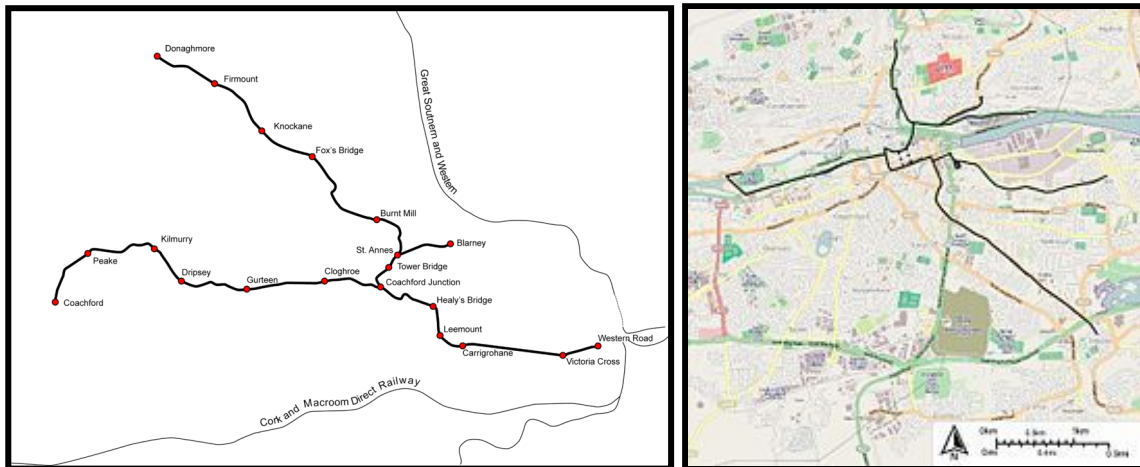
From 1898 to 1931, Cork had its own extensive tramway throughout the city, operated by the Cork Electric Tramways and Lighting Company. It ran three routes throughout the city, radiating from the statue of Father Matthew on Patrick Street. The first ran from Blackpool to Douglas, a second from Summerhill to Sunday's Well, and a third from Tivoli to Blackrock.<sup>2</sup> The system shut down in 1931 for a variety of reasons, including damage sustained in the Burning of Cork, increasing preference for private transport, and the takeover of the power supply by the Electricity Supply Board [ESB].



*Trams running along Patrick Street*

West of Cork City was the Cork and Muskerry Light Railway. The railway connected the City Center as far as Coachford and Donaghmore. Another reason for the railway's existence was to connect the city center with Blarney Castle, a major tourist destination. After receiving damage during the Civil War, the railway became less feasible. As cars became used more, the demand for the CMRL declined, and it was shut down in 1934. After its closure, Cork City lacked any form of city-based rail transport.

## Proposal for Light Rail in Cork City



Map of the Cork and Muskerry Light Railway | Map of the historic Cork City Trams

Once the successes of the Luas in Dublin became evident, there was much interest in the possibility of the introduction of a similar system to Cork.

**Boom years** - A feasibility study for a Cork light rail system was first promised in 2007, but never materialized. In 2007, the Green Party promised to “*build a light rail line running from Mahon to Ballincollig via Cork City Centre*”, as well as similar projects in Limerick, and extension of the Dublin Luas.<sup>3</sup> When the Green Party went into government as a junior partner to Fianna Fail, the project was given increased focus. However, the financial issues beginning in 2007 caused any projects to be shelved. A 2009 report, titled the Cork Area Transit System Study, looked at the possibility of a light rail system. It recommended that any light rail system would connect key points, including Ballincollig, UCC, CIT, and the City Center.<sup>4</sup>

**Ireland 2040** - The more recent *Ireland 2040* proposal considered ‘*the development of a much enhanced Citywide public transport system to incorporate subject to further analysis, proposals for an east-west corridor from Mahon, through the City Centre to Ballincollig and a north-south corridor with a link to the Airport*<sup>5</sup> as part of their plans to reform transportation in Cork City. At present, almost all main parties have supported the creation of a light rail system in Cork, though People Before Profit is the only party to have proposed their own planned map of services.

Similar movements in support of light rail transit have also taken place in Galway.

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**‘Development of a much enhanced Citywide public transport system to incorporate subject to further analysis, proposals for an east-west corridor from Mahon, through the City Centre to Ballincollig and a north-south corridor with a link to the Airport’**

**- From the Ireland 2040 Draft Plan**

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## **3.0 - Necessity for Light Rail**

Quite simply, the costs of neglecting Cork's public transportation infrastructure will only serve to harm the city in the coming years. The placement of a light rail system also will have a variety of positive impacts on the city.

### **3.1 - Population Increases and Service Strain**

The population of the newly-enlarged Cork City is set to reach 500,000 by The Cork 2050 estimates by the Cork City and Cork County councils put the population of Cork as high as 850,000 by 2050, with over 60% living in the city area.<sup>6</sup> At current, city roads in Cork have one of the worst rates of congestion in Ireland - commuters spend an average of 40 minutes stuck in gridlock alone each day, and rates are only increasing. Between 2015 and 2017, areas such as the South Link Road added 4,000 cars to the daily load. It is evident that the state of public transportation in Cork City needs a long term solution to prevent services becoming even worse in the future.

Though some efforts, like updates to the Park and Ride Scheme, and the afternoon ban on cars on Patrick Street have been made, these are all short-term solutions. While made with the best of intentions, they will not significantly halt congestion, nor prevent the gaps in public transport service from becoming more and more prevalent as time goes on. A light rail system which runs along primary city routes along a grade-separated way has the ability to carry passengers at a higher capacity than buses. This will help to negate the current problems experienced by commuters, as well as aid in planning for a Cork in the future that will need to constructively deal with issues affecting a larger population.

### **3.2 - Citywide Links and Future Development**

The creation of a Light Rail system for Cork, similar to the Luas in Dublin, will help enormously with those who travel in the city for both work and leisure.

Modern public transport infrastructure is also useful as Cork evolves into a global city. Links are especially necessary between places of such significance as the Hollyhill Apple European Headquarters, Dell-EMC Cork, and Cork Airport to the outer Cork area. A robust transport network can also help European and American companies to chose Cork as places to do business, especially post-Brexit. Developing permanent and reliable light rail links can increase the amount of business development and the opening of new businesses, especially in the knowledge and service sectors.<sup>7</sup>

### **3.3 - Transit Oriented Development**

The introduction of light rail transit to an area can aid in increasing development in certain areas. Transit Oriented Development [TOD] is a form of urban planning which centres transit links in the development of housing, business, or leisure functions, as a means of ensuring these areas are well connected and attractive to potential consumers. This is especially prevalent in areas in states of urban decline, as



developers prize developing in areas with good transit links, and the comparatively cheaper land prices may compel the choosing of these areas. This is especially evident in the housing sector, as old buildings are converted into upmarket abodes. After the creation of Portland, Oregon's MAX light rail system, the city's warehouse filled Pearl District accelerated urban renewal as many upscale apartment blocks were built in the neighborhood.<sup>8</sup> Portland region's transit agency has estimated that more than \$10 billion in development has taken place near MAX light rail stations, and that the system has provided an even larger return on investment since it was implemented.<sup>9</sup> Due to scale, it is likely that this number would not be as high in effect, but would still be significant. This can be useful to consider in the planned redevelopment of the Cork Docklands and Port of Cork from places of industry to urban centre. This phenomenon can also be extended to support further development of areas such as Ballincollig and Hollyhill.

### **3.4 - Road Safety**

In addition, public transportation helps to reduce the frequency of road accidents. A study by the American Public Transport Association [APTA] found that the use of public transit is as much as 10 times safer than driving. A light rail system can help to reduce the amount of road fatalities. According to the study, *'High-risk groups - including young drivers, seniors, alcohol drinkers, and compulsive texters - are more likely to reduce their driving if alternatives like public transit are convenient and attractive.'*<sup>10</sup> The widespread availability of public transportation helps to cut down on drink driving. In 2018, 14 people died on Cork roads.<sup>11</sup>

### **3.5 - Journey Times**

At present, average journey times per km from Cork are up to 30-40% slower per km travelled than from Dublin to the other cities.<sup>12</sup> Reducing the amount of time spent in transit will be a major benefit occurring as a result of a transition to LRT. Light rail running along a lane separated route is faster than mixed-use public transportation or road traffic, as it is unable to be held up in traffic congestion. This results in a more reliable system. Reliability is a major factor in the adaptation and public use of public transport, so a reliable LRT will generate greater usage than bus services.

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## **4.0 - Why Light Rail?**

Valid questions arise in the discussion over the future of transportation in Cork. It is asked '*is light rail the best option?*' People are often concerned over light rail is the best option for the city, and whether other forms of city transport would be better suited. And of course, where there's infrastructure, comes cost.

### **4.1 - Unsuitability of Other Systems**

Light rail transport is the method of mass transit best suited to a city of Cork's circumstances. Light rail transit works well in areas where the much of a city's population, along with many amenities are situated along corridors, rather than dispersed across wide areas or in radial patterns. In addition, the usage of a light rail system can help to increase development in Cork City, especially in the Cork Docklands region. - *See Section 3.3 - Transit Oriented Development*

**Subway and Underground** - A metro or subway like system akin to Dublin's planned MetroLink or DART Underground is simply unsustainable in Cork City. It does not have the population to support an underground system, whereas it is currently in possession of enough people to justify the beginning stages of a light rail system. Cork also faces additional challenges in underground construction due to the ground composition. The city isn't named after 'Corcach' for nothing. Extension of the Cork Suburban Rail is also not well suited due to the inability to run it through much of the City Centre.

**Comparison to Bus Rapid Transit** - A light-rail system also has numerous advantages over a bus rapid transit scheme. Light rail tends to attract more users, and boasts a greater capacity than lane-separated buses. It is easy to increase the capacity of light rail trams at periods of high-usage through the addition of additional carriages. Costs per passenger per kilometer are also lower in higher density areas near Cork City Centre. Due to the route of the proposed network, and the placement of high-traffic amenities near the bookends of all routes, areas along the entire proposed routes can avail of the reduced costs per head. The establishment of a light rail will also help with the development in areas. Cities such as Portland in the USA have seen developments along light rail lines, and such a dynamic has also been seen on a smaller scale in Dublin, where investment and redevelopment can be seen in the planned development in the small suburb of Bluebell.<sup>13</sup>

The placement of Bus Rapid Transit schemes often serve as placeholders for more robust transit schemes, or supplements to existing networks. While use of BRT systems can help to connect places that don't necessitate light rail links at present, light rail systems are generally preferable for longer-term investments in public transportation infrastructure. In the medium-term, dedicated BRT routes can connect areas that could be connected to the system in the future. - *See Section 7.1 - Bus Transportation.*

### **4.2 - Lane Separation**

In order for the system to function adequately, lane separation will be needed. Lane separation is the process where the lines on which the system run are separated from

## *Proposal for Light Rail in Cork City*

use by road transportation. This ensures that the system is not slowed in the event of traffic congestion. This grade-separated transit allows for greater capacity of system than non-separated lanes. The guarantee of lane separation ensures the service is enticing to commuters, who value regular and reliable service, which can serve to attract more users. It also allows the system to travel at higher speeds than might be acceptable on frequently used or trafficked roads.

**Mixed-grade traffic** - However, in areas where it is essential for LRT and road transport to coexist, LRT may have to run in mixed-grade traffic. This is where rails are run along roads, and road transportation uses the route also. This is less than ideal, and should be avoided wherever possible, as it removes many of the stated benefits of light rail transport. Many incidents involving the Luas and cyclists occur at these points. Should no other solution be found, MacCurtain Street may be one area where mixed-grade traffic is the only option.



*Left, mixed-grade traffic with the Luas. Right, lane separated Luas transit*

### **4.3 - Costs and Funding**

For reference, the initial run of the Dublin Luas cost €728 million to construct. Due to the fact that I am not a member of government at any level, I do not have in-depth knowledge of how such large projects are financed, such as the in-depth information regarding alterations in tax policies, government planning of budgets, or development specific grants.

**Public Private Partnerships** - It is possible for parts of the system to be constructed under a Public Private Partnership [PPP]. This is a common tactic in the construction of large infrastructure projects. Parts of government responsibility, in this case funding, are delegated to private companies under a long-term contract. Areas of the Dublin Luas were constructed under PPPs, as well as other infrastructural projects such as motorway construction and the urban regeneration of Fatima Mansions in Dublin City. Though the specifics would likely need to be sorted out on a case basis when financial analysis is complete. In consideration of PPPs, it is an idea to reach out to the large-scale private enterprise in Cork City that would benefit from the development of light rail system being constructed. In particular, Dell-EMC in the west,

## *Proposal for Light Rail in Cork City*

Apple in the northwest, and many of the other multinational corporations and industrial parks in contact with the proposed route.

**European Investment** - The costs of funding the Dublin Luas Red Line were aided with the procurement of an E82.5 million grant from the European Regional Development Fund [ERDF].<sup>14</sup> It is likely that Cork can avail of this at an even greater rate, being an secondary urban area, rather than a primary urban area, as Dublin is. In addition, the Connecting Europe Facility (CEF) has made €23.2 billion is available from the EU's 2014-2020 budget to co-fund transit projects in the EU Member States. 2 Irish proposals were selected for a total of €13 million recommended CEF funding, as opposed to greater numbers from other countries that received funds.<sup>15</sup> As the current budgetary timeframe is drawing to a close, fast action on application for the next round of budgetary funding can help to ensure overall costs on behalf of the national and local government are reduced.

**Later stages** - Additional money can be raised through the later sale of advertising space on trams and at stops. The expected funds can be earned through the sale of in-vehicle advertisements, as well as those adorning stop paraphernalia. In other circumstances, special promotions can be launched, such as the colorful full-body tram wraps occasionally seen on the Luas.<sup>16</sup> These have been run by companies including Smirnoff, Just Eat, and Avonmore Super Milk.



*Just Eat's Luas advertising campaign*

## **5.0 - Route Overview**

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### ***Format of Section***

*Included below is a brief overview of each stop along the proposed route, along with the list of stops. Information is provided on the various amenities close to the stop. Also detailed are planned developments in the area that may increase demand in the future. It can be assumed that there is to be a degree of reworking of roads in most circumstances. With regard to some stops, specific challenges are mentioned. Information regarding naming of the stop is also included - due to lack of availability, some names are approximate.*

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### **5.1 - Connection Objectives**

The purpose of the Cork Light Rail is to connect Cork's urban functional amenities with the city centre, while providing access to many of the suburban areas of housing. As such, stops are denser in areas where there is significant demand and usage of public transportation, such as UCC and the City Centre. It is envisioned that the system will be able to grow as the city grows, with the possibility of expansion in future years.

**Retail** - The proposal connects important commercial centres throughout the city, notably Ballincollig's Castlewest Shopping Centre, Mahon Point, and Blackrock Shopping Centre with the City Centre.

**Education** - The proposal includes notable areas of education. This focuses primarily on the Munster Technological University (currently CIT) and University College Cork.

**Medical** - As it has been found that access to reliable public transportation that connects medical facilities, this proposal directly connects St Mary's Health Campus, St Finbarr's Hospital, the South Infirmary Victoria University Hospital, as well as proximity access to the Bons Secours Hospital.

**Transport** - In order to provide an integrated service, the proposed routes connect with the Cork Suburban Rail, the national rail, Parnell Place Bus Station, and the facilitation of a rail station at Blackpool. They also link with Cork Airport.

**'Secondary Stops'** - Many stops along the envisioned line are not necessitating stops in their own right. Instead, they lie along the envisioned corridor connecting points of significant value. As the route would progress along this way anyway, it makes sense to include a stop along the route. This would provide access to potential commuters, which would doubtless increase ease of access, and therefore ridership.

## **5.2 - RED LINE - LÍNE DHEARG**

Any mass transit plan for Cork City would require the existence of an east-west corridor, stretching from Ballincollig in the west to Mahon in the east, going through the City Centre. The corridor in this proposal is referred to as the *Red Line*, for ease of comprehension. The proposed Red Line would likely become the primary artery of the system, akin to Boston's *Red Line* or Berlin's *U7*.

The Red Line would run from the Dell-EMC campus in Ovens, through Ballincollig along the R608. It would continue along Model Farm Road, with a stop at CIT, before cutting through the IDA Business Park, crossing to the Carrigrohane Straight, past the Lee Fields and the County Hall. It would then continue past Victoria Cross, along the N22, with a variety of stops at UCC. From there, continue along the Western Road and Washington Street into the City Center. The route would pass down the Grand Parade and along the South Mall, crossing over Parnell Bridge, providing access to the City Hall and Anglesea Street. The route would then go over the Clontarf Bridge, along Clontarf Street to the Parnell Place Bus Station. It would pass the Brian Boru Bridge to the Lower Glanmire Road, at this point sharing a track with the proposed Blue Line. A stop with a connection to Kent Station would be provided at Railway Street. The route would cross the Michael Collins Bridge to the Port of Cork. After crossing the Eamon De Valera Bridge, the shared track with the proposed Blue Line would end. It would then progress along Albert Quay and Kennedy Quay, serving the Docklands area. The route would then pass through the pedestrianized Marina, with a stop serving Pairc Uí Chaoimh. The route would then avail of the abandoned railway from Blackrock to Mahon, with the track running along it. The route would then run through Citygate, continuing then to Mahon Point Shopping Center. From there it would cross the South Ring Road to Jacob's Island, where the route would conclude.

The proposed Red Line is to be approximately 20 kilometres long.

**Red Line Route**

**Ovens**  
**Ballincollig Classes Lake**  
**Coolroe**  
**Ballincollig West**  
**Ballincollig East**  
**MTU Cork**  
**IDA Business Park**  
**Lee Fields**  
**Victoria Cross**  
**UCC Mardyke**  
**UCC West**  
**UCC East**  
**Washington Street**  
**Grand Parade**  
**South Mall**  
**Anglesey Street**  
**Parnell Place**  
**Kent Station** *[Connects to Blue Line, Cork Suburban Rail]*  
**Port Of Cork** *[Connects to Blue Line]*  
**Albert Quay**  
**Docklands**  
**Páirc Uí Chaoimh**  
**Blackrock**  
**Skehard Road**  
**Citygate**  
**Mahon Point Shopping Centre**  
**Jacob's Island**

**TOTAL : 26 stops**

## Proposal for Light Rail in Cork City

### Ovens | *Na hUamhanna*

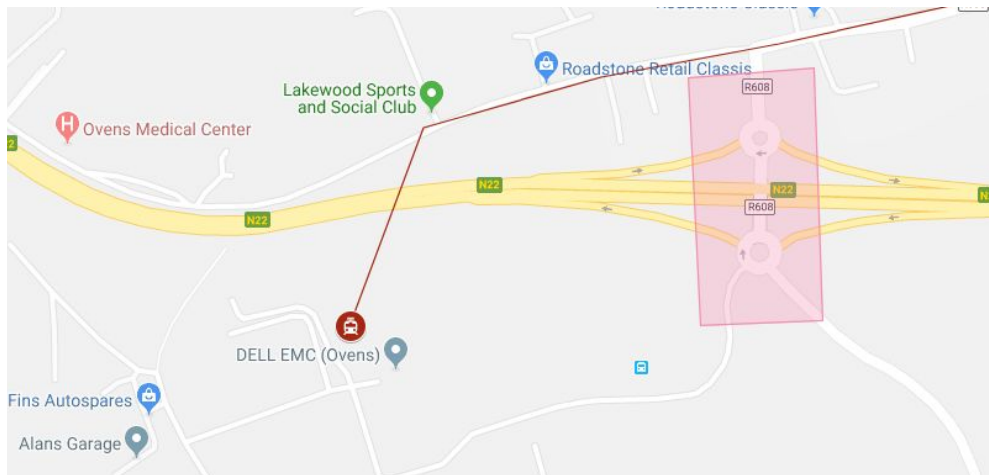
#### Alight for Dell/EMC Ovens Campus

**Stop Location :** Dell/EMC Ovens Campus parking area, adjacent to the N22



Services Dell/EMC as well as the local parts of Ovens. Additional construction will likely be required for ease of access from station to EMC Campus. Such form would likely take the form of a brief light rail crossing over the N22, elevated so as to prevent direct interruption to the flow of traffic. This could run along a widened version of the currently existing road bridge, or the structure could replace the pedestrian bridge further down the road. The stop would

serve as the western terminus of the Red Line.



*View of envisioned Ovens stop. Road bridge in highlighted in pink.*

Over 3,000 workers currently travel to work in the Dell/EMC plant every day.<sup>17</sup> As such, the running of transport routes lends to a reduction in the amount of cars along this section of the N22, potentially reducing congestion at rush hour.

Stop name comes from the town of Ovens.

### Classes Lake | *Eastát na Lochanna*

**Location :** Classes Lake Estate along the R608

Services 'Classes Lake Estate', the largest housing estate in Cork, which is the location of several hundred homes. Development is also ongoing in the area, with the addition of an extension to the estate expected to conclude in the coming year. Also



## Proposal for Light Rail in Cork City



adjacent are the 'Lisheen Fields' Estate, and the Ballincollig Rugby Club. There is also a Gaelscoil planned for the locality, which is currently housed in the site of the Ballincollig Rugby Club.<sup>18</sup>

The availability of space in proximity to the proposed stop also makes it a suitable location for adjoining parking.

- See Section 8.2 - Parking

Stop name comes from the estate of Classes Lake. The Irish name is approximate, as I was unable to find a standardized translation.

## Coolroe | An Chúil Rua

### Alight for Ballincollig Regional Park

**Location :** R608, between the entrance to Coolroe Meadows and Coolroe Street

**Proximity :** Estates of Coolroe Meadows, Wyndham Downs

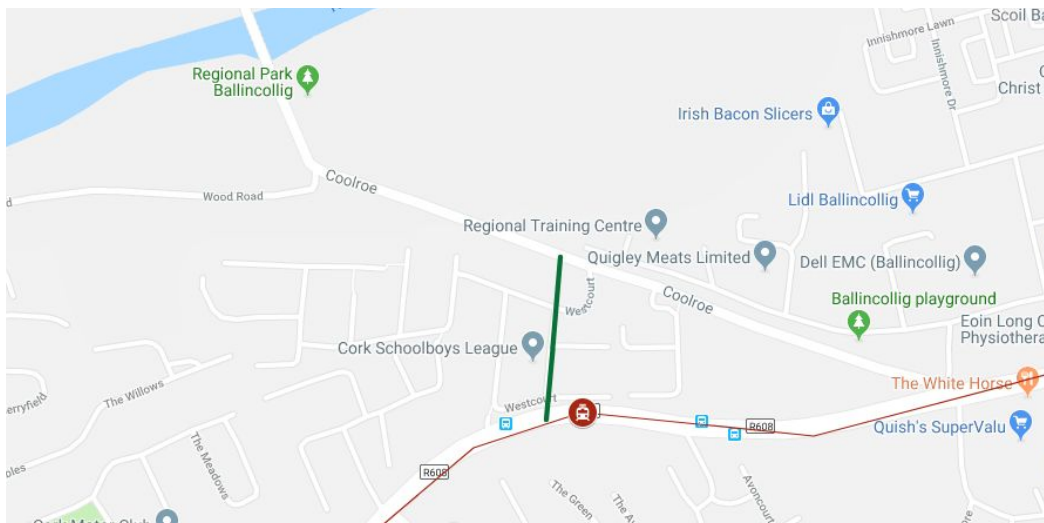


Services local well-populated housing estates, including Coolroe Meadows, Coolroe and Wyndham Downs.

Though a relatively low-focus area, as the projected route would pass through the area, it makes sense to place a stop. The stop is situated almost

equidistant between the entrances to Wyndham Downs, Coolroe Meadows and Coolroe, which can assist in facilitating all. Such a stop also has the potential to open up the area to the western entrance to the Ballincollig Regional Park, with the creation of a direct pedestrian pathway through the Westcourt area.

## Proposal for Light Rail in Cork City



Map of the proposed stop at Coolroe. Line in green is possible link to Regional Park.

Stop name comes from the local area of Coolroe.

## Ballincollig West | *Baile an Chollaigh Siar*

Alight for CastleWest Shopping Centre

Location : Eastern End of Main Street Ballincollig



Ballincollig is one of Cork's fastest growing areas, and contains over 20,000 people. As Ireland's fastest growing urban region, such patterns of growth are expected to continue. As such, light rail connections to the area are essential to keep up with this growth, ensure proper transit connections are available with the city centre.

Services the western half of the town of Ballincollig. Placing a stop here

provides direct access to Ballincollig's CastleWest Shopping Centre, the town center, and housing complexes behind. The logic of having two stops in Ballincollig two will also prevent unnecessary changes to the stops as the urban center grows in the future. A community center is also currently being proposed for the area, with a site planned for west of the shopping center.<sup>19</sup> A multi-building office complex, the Westfield Office Complex, is currently under construction.

In passing through Main Street, it is likely that the thoroughfare will be reduced to a single lane either way, and much of the street parking will need to be moved elsewhere in order to accommodate the light rail lines. In addition, in places the road may need to be widened to allow for adequate spacing.

## *Proposal for Light Rail in Cork City*

Stop name comes from the town of Ballincollig.

### **Ballincollig East | *Baile an Chollaigh Soir***

#### **Alight for Barrack Square**

**Location :** Ballincollig Main Street - High Street Intersection



Services the eastern half of the town of Ballincollig.

Provides access to the Barrack Square and Times Square areas of the locality. Also serves places such as the VMWare Offices and housing complexes adjacent. It is likely that the presence of the light rail system can aid in the filling of empty retail units in the shopping centre, and empty apartments in the adjacent Quadrants apartments.

In passing from Ballincollig onwards, it is likely that a number of compulsory purchase orders will be necessary after the town area in order to ensure the existence of a light rail line in each direction. Most of these CPOs will involve the requisition of front gardens of houses along the planned route. Though it covers a distance of approx. 4 kilometres between this stop and the MTU Cork stop, there are no stops between both. As such, it is an area that may warrant one in the future should there be significant development and subsequent local activism in the area.

Station name comes from the town of Ballincollig.

### **MTU Cork | *OTM Corcaigh***

**Location :** MTU Campus Bishopstown



Services the Bishopstown campus of the Munster Technological University. The route would here cut through the Rossbrook housing estate before travelling along the northern end of the Bishopstown Campus of the Munster Technological

## **Proposal for Light Rail in Cork City**

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University. Minor construction would be involved in order to facilitate the crossing over the Curraheen River. - *See Section 8.1 - Peripheral Construction*

The university, currently known as the Cork Institute of Technology [CIT] is set to be merged with the Institute of Technology Tralee. They are to be rebranded as the Munster Technological University. This is to facilitate higher standard and recognition of education at both institutions.<sup>20</sup> Over 17,000 students currently attend CIT, which would equate to a massive usage for a light rail system in the area.

Station name comes from the MTU College. One of several stops in the Bishopstown region.

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### **IDA Business Park | *Páirc Gnó IDA***

**Location :** Entrance to the Cork Business and Technology Park, along the Model Farm Road



The IDA South West (Cork) Business and Technology Park is a 25 hectare area situated on the Model Farm Road. It is living proof of the success of the organization at attracting foreign investment into Ireland. The Park contains many multinational business such as Trend Micro, Boston Scientific, and Alcon Ireland. Hundred of people work at these companies. As such, it is an area that would see significant usage if connected

to the light rail route. Such a stop here also provides proximity to the Model Farm Road in Bishopstown.

The route would cut through the business park to reach the Carrigrohane Straight. Minor construction would be needed in order for the route to go over the Curraheen River. - *See Section 8.1 - Peripheral Construction*

Stop name comes from the IDA Business Park, of which is the main area serviced by the stop. One of several stops in the Bishopstown region.

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## **Lee Fields | *Páirceanna Laoi***

### **Alight for the Lee Fields and Kingsley Hotel**

**Location :** The Carrigrohane Straight, in proximity to clustered buildings at the end of the street.



The placement of the route through the Lee Fields brings together a wide variety of functions in the area. Adjacent to this stop are the Lee Fields, the Cork County Hall, and the Kingsley Hotel, as well as other planned developments.

The Lee Fields is one of the notable green areas within Cork City. A light rail system can work with local and tourist initiatives to increase footfall in the area. The presence of the Cork County Hall is

also a factor of notability for the area. Over 2,000 employees work in the Cork County Hall.<sup>21</sup> The 17-storey building is also an iconic landmark of the city. The Kingsley Hotel, one of Cork's highest rated hotels, is a 131 room residence popular amongst international tourists. The placement of a stop here can provide an increased link for tourists staying in Cork City.

Student accommodation is planned for the old Coca-Cola Bottling Plant. The development is expected to provide accommodation for 600 residents, primarily for UCC, along the Carrigrohane Straight Road.<sup>22</sup>

Measures would likely need to take place in order to flood-proof the route against the flooding common in the Lee flood plain. A raised track with barriers at either side can help reduce the risk of flooding putting the system out of service. In addition, due to the incredibly straight nature of the Carrigrohane Straight, it may permit the light rail system to run at a higher than usual speed along the route.

Stop name comes from the geographic area of the Lee Fields.

## **UCC Victoria Cross | COC Crois Victoria**

### **Align for UCC Student Accommodation**

**Location :** N22, Parallel to Mardyke Walk



Victoria Cross is notable for the levels of nearby student accommodation. This is due to its proximity to UCC, Cork's main third level college. As a consequence, it is highly necessary for any mass transit route to pass through.

The Victoria Mills accommodation contains 90 single-student apartments. The Student Lodge can accommodate 180 people. The Victoria Mills can accommodate 335 students.<sup>23</sup> Adjacent is the site of the proposed Crow's Nest Student Accommodation, designed to house a number of

students for local UCC. The proposed student accommodation building is set to rise to eight and up to 10 storeys, across four linked blocks, on the former site of the Crow's Nest bar. Construction is due to complete by August 2020.<sup>24</sup> The building is an attempt to create further affordable housing for Cork's student population, owing to the current lack of affordable and available accommodation.

CPOs may be necessary on areas of adjoining housing in order to minimize any disruption caused to the likely reduction of traffic lanes to facilitate the light rail system.

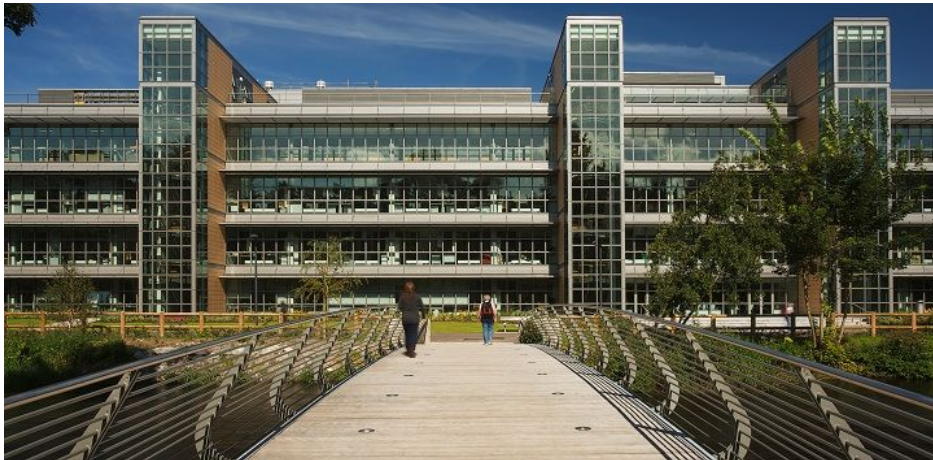
***Proximity of UCC Stops*** - *At this section of the proposal, the placement of stops on the proposal becomes more frequent, at times with only 250m between stops. Though this may seem unnecessarily common, it is required for a few reasons. Owing to the location of UCC and its related amenities, the area is a highly trafficked, especially due to its large student population and the situation of particular section of the roads as vital for access to Bishopstown, Ballincollig, and other areas. As such, the placement of frequent stops can help to increase the adaptability from students, hopefully resulting in fewer car journeys as a result of this better service.*

The stop is named for the street Victoria Cross.

## **UCC Mardyke | COC An Mhuirdíog**

**Alight for the UCC Western Gateway Building and the Mardyke Arena**

**Location : N22, Parallel to Mardyke Walk**



The stop here services UCC, providing an entrance to the Western Gateway Building and Brookfield Health Sciences Complex, both important centers of learning at the college. The

Western Gateway Building is also the site of the National Health Services Research Institute. The stop is also in proximity to several other buildings, as well as the student residences adjacent, as well as being a thoroughfare to College Road.

The placement of a stop here services the Mardyke Arena, which is home to the sports facilities of UCC, including swimming and rock climbing facilities, a gymnasium, and a running track.

Station name comes from the Mardyke Walk area, which shares its name with the Mardyke Arena. Naming for the Western Gateway Building would be too long or unwieldy. One of several stops at University College Cork.

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## **UCC West | COC Siar**

**Alight for Fitzgerald's Park**

**Location : N22, in proximity to the Castlewhite Apartments**



## ***Proposal for Light Rail in Cork City***

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The stop serves the Castlewhite Apartments at UCC, as well as Fitzgerald's Park. The Castlewhite Apartments house up to 300 student residents of UCC. The area is also within walking distance of the main campus.

Fitzgerald's Park is a single street away from the proposed stop. Fitzgerald's Park is one of the largest open green areas in Cork City at 18 acres. It is the site of a number of amenities, such as the Cork Public Museum and a children's playground. Also present is the iconic Shakey Bridge, the award-winning Sky Garden, and the modern 'Pavilion of Light' sculpture.<sup>25</sup>

Stop name comes from UCC, and is named to differentiate from other UCC stops. One of several stops at University College Cork.

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### **UCC East | *COC Soir***

#### **Alight for UCC Main Campus Entrance**

**Location :** N22, at the Intersection of O'Donovan's Road



Serves UCC, providing a station close to the Main Entrance to the college campus. Also services the student residences adjacent, as well as being the stop closest to College Road. Another source of demand for a stop will be Presentation Brothers College, a private secondary school which is situated nearby on the Mardyke Walk.

In order to create a functioning system with minimal construction, there will be need for a road diet of the Western Road, which would likely include reduction from two 'one way' lanes and bus lane to two light rail lanes as well as a one-way car lane. Strategic road crossing points are to still remain in place in order to allow access to buildings such as Jury's Inn.

Stop name comes from UCC, and is named to differentiate from other UCC stops. One of several stops at University College Cork.



## **Washington Street | *Sráid Washington***

### **Alight for Cork Courthouse**

**Location :** Washington Street, adjacent to the Cork Courthouse



Services Washington Street, also providing access to nearby streets including Hanover Street and Court House Street. All are important commerce and cultural streets of Cork City. A stop placed here also provides direct access to the Cork Courthouse.

Due to the narrow width of Washington Street, it is advisable for either the street to be partially or mainly pedestrianized. In lieu of this, a reduction in the amount of

lanes, such as changing to a entirely one-way traffic flow near the 'Grand Parade end' of the street could be suggested. Should there not be a significant change, a single light rail line shared by both directions of light rail movement would be the sole solution. However this would result in even further damage to the flow of transport on the already busy street. Ultimately, the decision will lie with the planning authority, though it is likely to be one of the more challenging areas to come up with an agreeable solution for.

Stop is named for Washington Street. One of several stops in Cork City Centre.

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## **Grand Parade | *Sráid an Chapail Bhuí***

### **Alight for Patrick Street, English Market, and Bishop Lucey Park**

**Location :** Grand Parade, adjacent to Bishop Lucey Park



A stop placed here serves the Grand Parade, one of Cork's main commercial streets.

## **Proposal for Light Rail in Cork City**

Provides direct access to Patrick Street and Oliver Plunkett Street, both of which are to have no light rail stop under the proposal. Both are some of the City Centre's biggest commercial streets and can be easily served by a stop on the Grand Parade. In addition, Oliver Plunkett Street is simply too narrow for the running of a light rail track, while Patrick Street would face difficulties as the adaptation to light rail would mean removal of private vehicles, or removal of pedestrian footpath, which is especially likely to draw the ire of local business owners and pedestrians. In addition, running the route in the proposed way simply allows to serve more of the city.

Placing a stop here facilitates direct access to the English Market, one of Cork's main cultural sites. Also situated on the street are functional amenities including Cork City Library and Bishop Lucey Park. In December, the Grand Parade becomes home to the Glow Festival - namely a decoration of Bishop Lucey Park as a Christmas attraction, alongside the ferris wheel and Christmas Markets. Over 160,000 people attended in 2017.<sup>26</sup> The station is also close to the Cork Events Center, which has been in development since 2016 and is hoped to be finished, eventually.

The name comes from the Grand Parade street name. One of a number of stops in the City Centre.

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## **South Mall | *An Mheal Theas***

### **Align for Oliver Plunkett Street and Father Matthew Quay**

**Location :** South Mall, perpendicular to Morgan Street



Services the South Mall, with close access to Oliver Plunkett Street and Patrick's Street, as well as Father Matthew Quay.

The South Mall is home to many white collar industries. Including banking, finance, and legal offices. As such, it is an important street for trading and commerce in

the City Centre. Also planned for the street is the development of a mixed office and hotel site adjacent to Morrison's Quay.<sup>27</sup>

In much the street, a road diet will need to be implemented. While the proposed system will hopefully eliminate some of the need, any demanded on-street parking will need to be moved elsewhere.

Name comes from the South Mall street name. One of a number of stops in the City Centre.

## **Anglesey Street | *Sráid Anglesea***

### **Alight for City Hall and Anglesey Street Courthouse**

**Location :** Albert Quay, adjacent to the City Hall



Serves Anglesey Street, as well as the variety of civil functions situated there. These include the Cork City Hall, the Anglesey Street Garda Station, and the Anglesea Street Courthouse. The area also offers a connection to the Park and Ride. Several hundred employees work in City Hall, with smaller numbers in the Garda Station and Courthouse.

The proposed route would cut over the Parnell St. Bridge. In order to accommodate the route, it is necessary to either widen the bridge or reduce traffic to one lane and run a single tram line through. The first option is more costly than the second, though the second would likely slow down the flow of traffic for both methods of transport. - *See Section 8.1 - Peripheral Construction*

Stop name comes from name of Anglesey Street. One of a number of stops in the City Centre.

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## **Parnell Place | *Plás Parnell***

### **Alight for Parnell Place Bus Station**

**Location :** Clontarf Street, in direct proximity to the Parnell Place Bus Station



Parnell Place provides direct access to most major bus transportation routes, via the Parnell Place Bus Station. Bus routes are available, serving most of Cork City and County, and others are available connecting to other towns and cities around the nation.

The stop should be located at, or in direct proximity to, the station itself, in order to provide the most convenience to riders of both bus services and the light rail system. Better integration will lead to better connections between

## Proposal for Light Rail in Cork City

both, and as such it is important for such a connection for both to exist, so to increase usage of public transport.

As well as this, the stop also serves in proximity to the proposed 'Prism' development, a 15-storey 'New York-style' office development planned for the area.<sup>28</sup>

Station name comes from the Parnell Place street, and bus station. One of a number of stops in the City Centre.

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### **Kent Station | *Stáisúin Cheannt***

**Alight for transfers to the Red/Blue Line, Cork Suburban Rail, and National Rail services**

**Location :** Railway Street, in direct access to Kent Station



Services Kent Station, Cork City Centre's main area for connection to county and intercity rail transportation. With the connection of both light rail lines to Kent Station, Kent Station will likely take on a new and important role as a centre of transportation in Cork City.

In order to access this area of the city, the route will run over the Brian Boru Bridge. Like with

the other bridges in Cork City, lanes will need to be altered, or the bridge will need to be widened. Alternatively, it could be made road-only, with pedestrians relocated to the Harley Street Pedestrian Bridge, though this may create a separate set of problems.

Placing a station at Kent Station is vital for multimodal transportation in the Cork Region, as it connects the light rail system with the suburban and national rail services. From here the Cork Light Rail connects to the Cork Suburban Rail, joining the city center with towns such as Cobh, Carrigtwohill, and Mallow, and others along the CSR route. Connections from towns along the CSR route with the city centre and environs also have the potential to decrease car usage from the areas along the CSR by providing previously nonexistent connections around Cork City. - *See Section 7.2 - Cork Suburban Rail*

Also services the buildings adjacent to the North Channel of the River Lee. The Penrose Wharf, a collection of many businesses and commercial space, is within walking distance of the stop. Other developments are also planned for the area. Horgan's Quay is a €160 million redevelopment of disused railway buildings, along with the creation of other buildings providing office space.<sup>29</sup> As part of these developments, a 136-bed hotel is also planned for construction, to be known as 'The Dean'. Penrose Dock is a development plan for €125 million of office development in proximity to Kent

## ***Proposal for Light Rail in Cork City***

Station. It is to provide 250,000 sq ft of office space in two buildings, which are to be six and eight storeys tall.<sup>30</sup>

Station name comes from the Kent Rail Station. One of a number of stops in the City Centre. One of two stops on both the proposed Red and Blue Lines.

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### **Port of Cork | *Calafort Chorcaí***

**Alight for Port of Cork developments and transfer to the Red/Blue Line service**

**Location :** Intersection of Lapp's Island Street and the N22



Serves the Port of Cork area.

In order to access this area of the city, the route will run over the Michael Collins Bridge. Like with the other bridges in Cork City, lanes will need to be altered, or the bridge will need to be widened.

Cork City's port functions are set to move to Ringaskiddy as part of a multimillion euro operation. As such, large areas of land are set to be freed up for development. One such

proposal is that of the construction of a landmark 40-storey building on the site of the former Custom House, which would make it Ireland's tallest building. Other developments are expected to follow in the future.

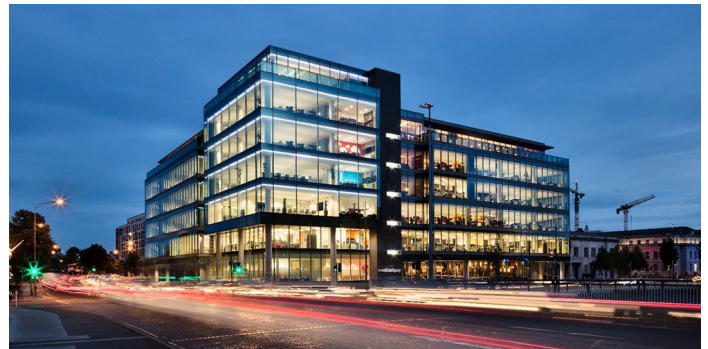
Station name comes from the Port of Cork. One of a number of stops in the City Centre. One of two stops on both the proposed Red and Blue Lines.

## **Albert Quay | Cé Ailbhe**

### **Alight for Navigation House**

**Location :** Intersection of N27 through the Eamon De Valera Bridge and Albert Quay [Street]

Serves the Albert Quay area adjacent to the South Channel of the River Lee, as well as the nearby Kennedy Quay.



Albert Quay is the current home of the One Albert Quay offices, which has been described as 'Ireland's smartest building', owing to factors such as uses of sustainable building materials and receiving the Leadership in Energy and Environmental Design award.<sup>31</sup> It is one of the recently completed developments in Cork City, and is an example of what other development is

set to follow in the city in coming years. Albert Quay is also the site of the Navigation Square office developments. These are four buildings with over 310,000 sq ft of office space. Placement of the stop also provides access to Victoria Road.

Station name comes from Albert Quay. One of a number of stops in the City Centre.

## **Docklands | Na Dughailte**

### **Align for Docklands developments**

**Location :** Cork Docklands



Stop serves the Docklands area, set to be the site of some of Cork's most ambitious and extensive developments over the coming years. Due to the large size of the area, and the shifting nature of scheduled developments, it is likely that the Docklands section of the proposal will need to be revisited at a later date. Though this current proposal states the single stop and route, development in the area may need the plan to be changed,

or additional stops can be added at a later date, post construction.

Under the Cork City Development Plan, the City Docks project aims to provide 9,500 housing units and 29,000 jobs in the city centre and inner docklands. Developments across housing are intended to make more affordable houses available in the City Centre. The construction of a number of new streets are also planned for the area. A number the development projects which have currently been planned include office space, housing apartments, and commercial investments. Plans have been approved for along Albert Quay, to consist of two residential towers, one 10 storey and the other 6 storeys, connected by an elevated walkway.<sup>32</sup>

In order to facilitate this growth, the placing of a stop, or stops, here will serve a large number of potential commuters over the coming years, as well as serve to make the Docklands area an attractive place to live and do business.

Station name comes from the Cork Docklands. One of a number of stops in the City Centre.

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## **Páirc Uí Chaoimh**

### **Align for Páirc Uí Chaoimh, The Marina, and Atlantic Pond**

**Location :** Along the Marina, east of the entrance to Centre Park Road

The placement of a stop here serves Páirc Uí Chaoimh, the Marina, and the Atlantic Pond.

Páirc Uí Chaoimh is situated in the Ballintemple area of Cork City, not excessively far from the City Centre. It has recently undergone a successful redevelopment, which ended in 2017. It increased the capacity of the venue to 45,000 people, as well as the creation of a car park with 400 spaces, and an all-weather

## Proposal for Light Rail in Cork City

pitch. It also remains a popular venue for concerts, with stars such as Bruce



Springsteen and Ed Sheeran playing in Páirc Uí Chaoimh in recent years. The area is also close to the site of the 'Live at the Marquee' set of concerts, which take place every summer.

As has been noted, movement in and out of the area during concert and game times can be especially congested.<sup>33</sup> The placement of a light rail stop is a necessity to ease flows of people and traffic at such instances. It is also easier to increase the frequency of light rail

vehicles running on a segregated line than to increase the flow of buses or other vehicles.

The station would also serve the Marina and the Atlantic Pond, a local park, as well as a popular tourist attraction. Currently, a two way road exists along the waterfront of the park. It is recommended to replace this thoroughfare with the light rail route, as it prevents the removal of any park land.

The station name comes from the Páirc Uí Chaoimh GAA stadium and the Marina park.

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## Blackrock | *An Dúcharraig*

**Location :** Intersection of Blackrock Road and the Old Railway Line



Services the suburb of Blackrock. Blackrock is home to amenities such as Blackrock Castle Observatory. Many people travel to work from Blackrock to the City Centre, representing a section of short journeys that could very feasibly be replaced with rapid transit.

The route would diverge from the Marina to follow the route formerly occupied by the Cork, Blackrock, and Passage Railway. At current, much of

the area has been replaced with a walkway. It is possible for the rail to replace the walkway route entirely, with the adjoining areas of the route widened (as is currently being discussed) to facilitate both cyclists and pedestrians. However, it is preferable for the route to run alongside the walkway, to create a car-free corridor,



## *Proposal for Light Rail in Cork City*

Name comes from the townland of Blackrock. Provides a station to service the Blackrock area.

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### **Skehard Road | *Bóthar na Sceiche Airde***

**Stop Location :** Intersection of the Old Blackrock Railway and Skehard Road



While Skehard Road is not of special importance, it lies on the proposed route and would provide transit services to those in southern Blackrock. As such, the placement of a stop would likely attract some potential riders.

Stop name comes from the street Skehard Road. One of two stops in Blackrock.

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### **Citygate | *Geata na Cathrach***

**Stop Location :** Along R852, between the southeastern end of the Loughmahon Technology Park and Citygate

Citygate is one of the largest office developments in Cork, comprising of over 360,000 sq ft of office space. It is home to significant I.T companies including Intel Security, Tyco, Solarwinds, Qualcomm and Aruba Networks. It is also the location of choice for healthcare providers including Mater Private hospital, VHI Swiftcare, Sims IVF and H.I.Q.A. The proposed stop also lies in proximity to the Mahon Retail Park and the



Loughmahon Technology Park. A large number of employees work at Citygate and surrounding areas. As such, the placement of a stop would likely attract widespread usage.

Station name comes from the Citygate complex. One of three stops in the Mahon area.

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## **Mahon Point Shopping Centre | *Ionad Siopadoireacht Mhachan***

**Stop Location :** Mahon Point Shopping Center parking area



Services the Mahon Point Shopping Centre, as well as providing access to the greater Mahon area.

Mahon Point is Cork City's largest shopping centre, containing more than 80 stores and restaurants. It is a vital centre of commerce in the city, and reaches footfall of 110,000 visitors per week, rising to 160,000 at peak times.<sup>34</sup>

The stop could be placed in the existing car park, for

ease of proximity. Usage of a light rail system can reduce the amount of cars used in travel to the area, compensating for the loss of the car park. In addition, it would likely be of benefit to the shopping centre, and the system itself, for the stop here to be larger in scope than regular stops, potentially with a direct or covered pedestrian connection to the main centre.

Station name comes from the Mahon Point Shopping Centre. One of a number of stops in the Mahon area.

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## **Jacob's Island | *Oilean Iacób***

**Stop Location :** Jacob's Island, along Long Shore Drive



Jacob's Island is currently home to 330 housing units, in the form of the Jacob's Island Apartments.

Jacob's Island is to be the site of a series of housing developments in the coming years. A 25 story apartment building development is planned, capable of holding 100 housing units, making it taller than any building currently in Cork. This

## *Proposal for Light Rail in Cork City*

will result in a total of 413 planned units in the development. With this, Jacob's Island will become one of the densest areas of housing in the city. Placing a stop in this area has the potential to link this significant amount of housing with the city center.<sup>35</sup>



In order to reach Jacob's Island, the route needs to cross the N40. In order to prevent disruption to the flow of traffic along the road, it may need to cross at the bridge, or necessitate the construction of a new structure.

Station name comes from the Jacob's Island area. One of a number of stops in the Mahon area. The Jacob's Island stop will also serve as the eastern terminus of the Red Line.

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**The proposed Red Line will connect Cork's City Center with many high-level institutions and surrounding regions, as well as help the facilitation of growth and development at the Cork Docklands and other areas. Thousands of people will be connected along this corridor.**

### **5. 3 - BLUE LINE - LÍNE GORM**

In the event of the creation of a Light Rail system in Cork, the Blue Line will serve as the secondary route, but still a vital part of transportation in Cork City. In this proposal, the northwest-south corridor will be referred to as the 'Blue Line', for ease of comprehension. The route divides at a point to provide a connection to Blackpool. The northeastern route to Hollyhill is denoted by A, while the northern route to Blackpool is denoted by B.

The Blue Line would begin in the south at Cork Airport, and serve a variety of industrial parks in that area, travelling along Avenue 2000 to the N27. It would then cut across Airport Road to Frankfield Road, where it would continue to the Kinsale Road Roundabout. It would continue along Kinsale Road, reaching the Black Ash Park & Ride, as well as Musgrave Park. It would cut across to the South Link, where it would run to the City Centre, serving two medical facilities along the way. It would continue through the city, joining with the Red Line in serving Port of Cork and Kent Station, connecting it to the Cork Suburban Rail and national rail services. From the Lower Glanmire Road, it would continue past MacCurtain Street to Carroll's Quay Street, jutting south to Camden Quay. It would run along the riverside until Farren's Quay, where it would go up Shandon Street to the Shandon Bells. There the route would diverge. The northwestern line would progress along Cathedral Road to St Mary's, where it would then go up to Harbour View Road. Here, it would complete in a loop between the Apple Hollyhill and Hollymount areas. The northern route would cut across Cathedral Walk, continuing up along the N20, serving Blackpool Shopping Centre. It would then cut to Redforge Road, where it would conclude at a proposed Blackpool Railway Station.

**Blue Line Route**

**Cork Airport**

**Airport Park**

**South Link**

**Black Ash**

**Irish Independent Park**

**St. Finbarr's Hospital**

**South Infirmary**

**Shalom Park**

**Port of Cork [*Connection to Red Line*]**

**Kent Station [*Connection to Red Line and Cork Suburban Rail*]**

**MacCurtain Street**

**Pope's Quay**

**Farren's Quay**

**Shandon Bells**

**Northeastern Terminus [A] :**

**Wolfe Tone Street**

**Cathedral Road**

**Hollyhill**

**Hollymount**

**Northern Terminus [B] :**

**Blackpool Shopping Centre**

**Blackpool**

**TOTAL : NE Route - 18 | N Route - 16  
20 overall**

## **Cork Airport | Aerfort Chorcaí**

**Stop Location :** Terminal of Cork Airport



The southern end of the Blue Line would begin at Cork Airport. Placing it directly at the terminal would provide ease of access for those arriving from abroad.

Cork Airport is the Republic of Ireland's second-largest airport, and is currently central to initiatives for to increasing the amount of European tourism in Ireland.<sup>36</sup> In Q1 of 2018

alone, 428,618 passengers passed through Cork Airport.<sup>37</sup> The amount of journeys have increased year upon year. The development of new routes in recent years, especially those to the US with NorwegianAir, have helped to increase passenger numbers.

A link is vital in order to connect the Cork Airport with the city centre. Direct airport-city access has been known to increase usership of airport facilities. At present, not even Dublin's Luas connects the airport with the city centre. Through connections from the airport to the city centre and to other national rail links, it is possible that the introduction of a light rail system will help to promote Cork Airport as an alternative to Dublin Airport.

Stop name is derived from the Cork Airport. One of two stops in the airport area.

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## **Airport Park | Aerfort Páirc**

**Alight for Airport Business Park**

**Stop Location :** Intersection of Avenue 2000 and Avenue 5000



Services the Cork Airport Business Park. The Park contains various offices and hotels, often used by tourists and travellers to Cork.

Many international companies have offices in the Cork Airport Business Park, including Amazon, IBM, and Intel. Hotels in the Cork Airport Business Park make the area frequently used by those travelling to Cork for business, especially those commuting for work.

## *Proposal for Light Rail in Cork City*

There are two hotels in the vicinity, the Cork Airport Hotel, and the 142-bed Cork International Hotel.

Placement of a light rail line here can help to further integrate some of Cork's multinational companies with the various modes of transport found within the city.

Stop name comes from Airport Park. One of two stops in the airport area.

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### **South Link | *An Nasc Theas***

**Stop Location :** Intersection of Airport Road/Grange Road and Frankfield Road

A stop placement serves a variety of business parks in the area, including the South Link Business Park, the Frankfield Business Park, and Ballycurreen Industrial Estate. The placement of a stop is also within relative proximity to Togher [approx. 1km], potentially generating additional usage among residents.

Stop name comes from South Link Road. Irish stop name is approximate. One of two stops in the airport area.

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### **Black Ash | *Páirceáil agus Taisteal***

**Stop Location :** Black Ash Park and Ride



The Cork Light Rail would necessitate a stop at this point due to the prospect of a link with the Black Ash Park and Ride system of buses. Also important is the significantly large car park, which can be used as a point of attraction to encourage commuters to leave cars in the area and instead utilize the light rail. It is likely that some

form of expansion will be needed for the area in order to accommodate an expected increase in demand.

The route along the Kinsale Road would jut into the existing parking area before removing from the facility again and rejoining the route.

Station name comes from the Black Ash Park and Ride. Irish name comes from 'Park and Ride'.

## **Irish Independent Park | *Páirc Irish Independent***

**Location :** Kinsale Road, next to Irish Independent Park



Serves Irish Independent Park, commonly known as Musgrave Park. It primarily is the host of rugby games, and also hosts soccer games and concerts.

Traffic around the time of major games is often noted as being a significant issue. The

presence of a segregated light rail line has the potential to alleviate traffic during these times of intense usage. Additionally, capacity can be increased around times of significant congestion through the easy running of additional trams, a process which road traffic makes difficult at current.

Stop name comes from the Irish Independent Park stadium. Depending upon public and sponsor input, discussion can be had of whether to use the official name, or the common name of the stadium for the stop.

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## **St. Finbarr's Hospital | *Ospidéal Nmh Fionnbarra***

**Location :** The South Link, near the reverse entrance of St Finbarr's



The placement of a stop in this area serves the St. Finbarr's Hospital facility, as well as all its associated medical buildings. Access to medical facilities via easy transit helps to improve public healthcare. In addition, the route runs along this way regardless, so the placement of a

stop at a public amenity makes sense.

It is possible for the route to expand to the Douglas area in the future via the addition of a spur running along the South Douglas Road to the Douglas townland.

Stop name comes from the hospital facility of St. Finbarr's.

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## **South Infirmary | *Ospidéal Theas***

**Location :** Intersection of South Link and Old Blackrock Road



The placement of a stop in this area serves the South Infirmary Victoria University Hospital facility. Access to medical facilities via easy transit helps to improve public healthcare.<sup>56</sup> In addition, the route runs along this way regardless, so the placement of a stop at a public amenity makes sense.

In addition, the placement of a stop at this area ensures that the system is within relative proximity to the Turner's Cross, Blackrock, Deerpark, and Ballintemple areas. As such, it is hoped that this would result in increased local usage of the system in this area.

Stop name comes from the name of the South Infirmary. Selection of an alternate Irish name may be necessary to distinguish from the previous St. Finbarr's stop.

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## **Shalom Park | *Páirc Shalom***

**Location :** Intersection of Albert Street and Marina Terrace



While Shalom Park is not of particular importance beyond being one of Cork's greenways, the stop is located here so as to provide service to the area adjacent to Anglesea Street and past the South Channel of the River Lee.

In addition to this, the placement of a stop here is strategic for a number of reasons. Here to route joins with the tracks of the proposed Red Line, allowing for less construction through the city centre while still providing the

same level of service. From here, the route goes north over the road bridge, and shares stops at the Port of Cork and Kent Station with the Red Line, before continuing on its northern route. It is within relative proximity to developments planned in the Docklands, providing additional future transportation planning for an area predicted to grow dramatically in development and population. Services for peripheral city areas will

## *Proposal for Light Rail in Cork City*

be provided, such as on Eglinton Street and adjacent areas. Like with other green areas, the placement of a stop here will likely increase footfall in the park.

Stop name comes from the name of the nearby green area, Shalom Park.

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### **Port of Cork Kent Station**

The summary of these two stops and related areas are seen in the route overview for the proposed Red Line.

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### **MacCurtain Street | *Sráid Mhic Curtáin***

**Stop Location :** MacCurtain Street



MacCurtain Street is one of the main streets on Patrick's Hill. It is home to amenities such as the Everyman Theatre and the Metropole Hotel, as well as numerous stores and restaurants. It also provides service to adjoining streets.

The route runs up from the shared track onto Lower Glanmire Road, and then onto MacCurtain Street. Traffic control will be necessitated for adjoining streets. Further difficulties will be had in the

running of the route through MacCurtain Street due to its width. In order to place a two line route, most on-street parking will have to be moved elsewhere. Though less than ideal, current plans to route traffic in two directions will need to be abandoned, and at times the two lane traffic may need to merge as part of a mixed-grade traffic plan. Alternatively, the road could have private transit removed, though this would likely result in significant civilian backlash.

Stop name comes from the street name of MacCurtain Street. One of a number of stops in the City Centre.

## **Pope's Quay | Cé Pope**

**Stop Location :** Intersection of Pope's Quay and Shandon Bridge



Serves the Pope's Quay area, as well as the areas of the Lee's Northern Channel across from the main City Centre.

In lieu of the route attempting to go down the significant gradient of Patrick's Hill, the route should instead progress through Coburg Street and traverse to the Pope's Quay area via the Carroll's Quay portion of the N20. This progression has less of a

gradient, so construction and movement becomes easier.

Shandon Bridge provides pedestrian crossing to Kyrils Quay and Cornmarket Street. Cornmarket Street is notable for the placement of the Cornmarket Centre retail development.

Stop name comes from the Quay name of Pope's Quay. One of a number of stops in the City Centre.

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## **Farren's Quay | Cé Farren**

**Stop Location :** Intersection of Farren's Quay and Griffith Bridge



Serves the Farren's Quay area. At this point, the route ends its run riverside and instead goes up Shandon Street, which will likely need the street to be solely for the light rail line. It is also the westernmost stop in the city centre. In addition to serving Farren's Quay, this placement also provides pedestrian access to North Main Street through the Griffith Bridge.

Stop name comes from Farren's Quay. One of a number of stops in the City Centre.

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## **Shandon Bells | *An Seandún***

**Location :** Intersection of Church Street and Shandon Street



The placement of this stop serves one of the most important tourist and cultural landmarks of Cork City, the Shandon Bells. Such a placement here will help to provide necessary access for tourists. The Church of St Anne, in which the bells are situated in, is popular because of the views that can be had of all of Cork City. In a more local sense, the stop also serves communities nearby, though it is placed near to other stops on the line.

Shortly after this point, the route branches out at Cathedral Road, between the northeastern route to Hollyhill and the northern route through Blackpool.

Stop name comes from the Shandon Bells, an important Cork City landmark.

One of a number of stops in the City Centre.

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## **Wolfe Tone Street | *Sráid Wolfe Tone***

**Location :** Wolfe Tone Street



Serves Wolfe Tone Street. Though the area is relatively unimportant in terms of amenities, as the route runs along this street, it makes sense to place a stop along this area. There is

-km between the adjacent *Shandon Bells* and *Cathedral Road* stops. The placing of such a stop would increase usage among residents in the area, as well as potentially increase future development in the area. It is likely that on street parking and any bus lane areas be moved elsewhere.

## Proposal for Light Rail in Cork City

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Stop name comes from the street name of Wolfe Tone Street.

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### Cathedral Road | *Bóthar na hArdeaglaise*

**Stop Location :** Cathedral Road



Though the area is relatively unimportant in terms of amenities, as the route runs along this street, it makes sense to place a stop along this area. There is -km between the adjacent *Wolfe Tone Street* and *St Mary's* stops. The placing of such a stop would increase usage among residents in the area, as well as potentially increase future development in the area.

Stop name comes from the street name of Cathedral Road.

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### St. Mary's | *Ospideal Nmh. Máire*

**Location :** Baker's Road, near the entrance to the facility



The placement of a stop in this area serves the St Mary's Health Campus facility, as well as all its associated medical services, including the urgent care centre. Access to medical facilities via easy transit helps to improve public healthcare. In addition, the route runs along this way en route to the terminus at Hollyhill, so the placement of a stop at a public amenity makes sense.

Stop name comes from the St. Mary's hospital.

## **Hollymount | *Maolla***

**Location :** Harbour View Road, in front of the community garden



Serves the Hollymount Industrial Estate, home to various retail units. As it is en route to the terminus of the system, the placement of a stop makes sense, as it would be frequented by local users, increasing ridership.

Also serves the Knocknaheeny-Hollyhill Community Garden.

Stop name comes from the area of Hollymount.

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## **Hollyhill | *Cnoc an Chuilin***

**Location :** Kilmore Heights, next to the entrance to Apple Distribution Centre



Location of the Apple European Distribution Center, one of the largest multinational companies situated in Cork. Approximately 6,000 people are employed in some fashion with Apple in Hollyhill. Many of these employees commute from elsewhere in the city and environs to the campus each day,

and a light rail connection would aid in taking a significant number off of the road, as well as reducing congestion in the area.<sup>38</sup>

Serves as the northeastern terminus of the Blue Line. The location also allows for eventual expansion of the line to Blarney in the future.

Stop name comes from the area of Hollyhill.

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## **Blackpool Shopping Center | *Ionad an Linn Dubh***

**Location :** Along the railway line, approximate to Old Whitechurch Road



Provides connection to the townland of Blackpool, as well as specifically its major commerce centres. Primarily of focus are the Blackpool Shopping Centre and Retail Park. The Shopping Centre is home to 120,000 sq ft of retail area, along with the retail park which is home to 285,000 sqft. Blackpool Shopping Centre and Retail Park has a catchment of 112,000 people, with a combined 6.5 million

visitors per annum.<sup>55</sup> It is also situated as one of the main retail centres of North Cork.

Stop name comes from the shopping center situated in the townland of Blackpool. One of two stops in the Blackpool area.

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## **Blackpool | *An Linn Dubh***

**Alight for transfer to Cork Suburban Rail service**

**Location :** Along the railway line, approximate to Old Whitechurch Road



**Pictured : Mallow Train Station**

The placing of a train station at the northern terminus of the planned Blue Line will provide a connection to the national rail route in the north of the city, giving it the potential to become a transportation hub for the city. It would provide a

secondary connection to the railway network, in addition to the City Centre's Kent Station. A secondary nexus between the Cork Light Rail system and the national rail system will help to increase ridership of both. to the Cost estimates for the station itself have been estimated at €15 million.

The location indicated on the website map is approximate, and was chosen due to the likely benefits of locating the station slightly out of the main area, such as

## *Proposal for Light Rail in Cork City*

permitted the facilitation of development in the surrounding area, as well as ensuring easier future expansion of the system. Due to this placement of the Blackpool stop, it is advisable to place a Parking Stop here in order to maximize usage among those in surrounding areas. - *See Section 7.2 - Cork Suburban Rail*

Stop name comes from the locality of Blackpool. One of two stops in the Blackpool area. Serves as the northern terminus of the Blue Line.

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## 5.4 - Future Expansion

My initial proposal is a layout for what the beginning of a light rail system throughout the Cork City Area could look like. These two routes form a '*minimum standard*' for any mass transit line - any route should not cover much less than what is envisioned, utilizing these proposed corridors as the backbone of the system. Conversely, it absolutely should add extensions to the system. The two routes that I have proposed do serve much of Cork City, and there is of course opportunity for expansion in future years, as both development and growth affect demand. As the city grows, and population and transport needs change, more areas could be connected to the system, either to further specialize individual areas, or to broaden the reach and passenger intake of the Light Rail system. In-depth looks at transportation may reveal the necessity for additional stops. These expansions could take the form of additional lines, spurs, or extensions to existing lines. On a lesser scale, demand for an increased number of stops along the existing route can be accommodated more easily, with the addition of stop facilities to the route.

Dublin's Luas saw a number of expansions in the fifteen years since its launch. In 2009, a Red Line extension to the Dublin Docklands was opened, and 2011 the Green Line was extended to Cherrywood. In 2017, the long-awaited Cross City extension to the Green Line connected the two routes. It is likely that a Cork Light Rail would see similar expansions over the years - though there would be no need for a 'Cork Cross City', as both lines are connected from the get-go.

Listed below are some potential expansions in future years.

- 
- **Bishopstown Extension** : Due to the density of many of Cork City's amenities in Bishopstown, an alternate route could be developed for the proposed Red Line. Such a route would serve UCC at College Road, the CUH, and the Wilton Shopping Center. It could potentially diverge at MTU Cork and continue through Bishopstown before connecting again to the main route at the UCC stop on Western Road. However, additional challenges would be faced due to the congestion of Dennehy's Cross.

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  - **Northeastern Cork Extension** : It would be possible to extend the Blue Line from the proposed Blackpool terminus to Mayfield, Glanmire, and Sallybrook, to serve communities in northeastern Cork City.

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  - **Carrigaline Extension** : Running from Cork Airport to Carrigaline. Could form either an extension to the proposed Blue Line, or an entirely separate line running along the waterline through Ringaskiddy and Passage West.

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  - **Northwestern Extension** : A route connecting Blarney, through Tower could be considered for the future. Such an extension would likely take the form of an extension to the proposed Blue Line from Hollyhill.
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## *Proposal for Light Rail in Cork City*

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- **Douglas - Rochestown Extension** : It is possible to connect Douglas and Rochestown through a spur from the proposed Black Ash stop on the Blue Line, or from the St Finbarr's stop. It could also take the form of continuation of the Red Line along the route formerly occupied by the Cork, Blackrock, and Passage Railway.
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## **6.0 - Other Information**

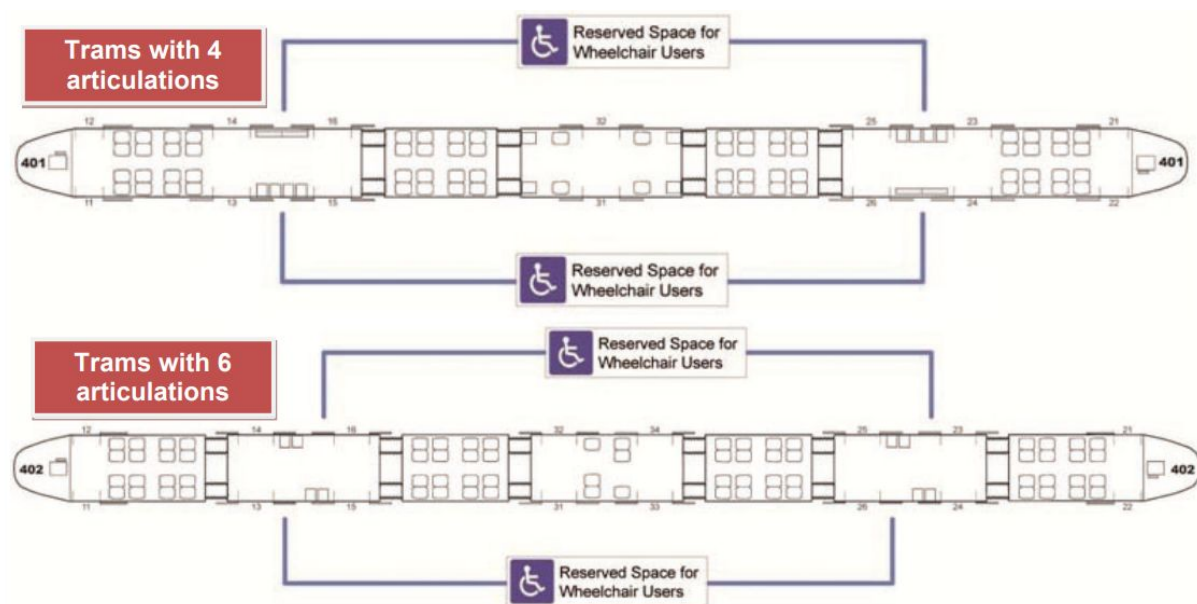
### **6.1 - Potential Ridership**

As the proposed Cork Light Rail reaches important areas for education (UCC and CIT/MTU), commerce (Hollyhill, Citygate), residential (Ballincollig, Mahon), and connectivity (Cork Airport, Kent Station), it is expected that the light rail system will see widespread adaptation from varying sectors of the population. A particular target demographic will be the thousands of students at the city's third level institutions. As bus ridership in Cork can be accompanied with a reputation for being slow and unreliable, it is likely that public transport that is punctual and reliable would see an increase in ridership when compared to other means of transportation.

The adaption of the Cork Light Rail can be compared to the adaption of its Dublin Counterpart. According to the National Transport Authority, the Dublin Luas has been in demand by the people of Dublin, with increases in ridership numbers from year to year. The gradual evolution of the service can be taken as a sign of its popularity with the people of Dublin as well. Usage rose from an initial 22 million passenger journeys in 2005, to 37.65 million passenger journeys by 2017.<sup>39</sup> *[4 million passenger journeys upon opening in 2004, though this was only the final four months of the year].* To be considered in this also is the openings of extensions to the system, including extensions to both lines between 2009 and 2011, and December 2017's notable opening of the Luas Cross City. While passenger numbers would not be as large in Cork, it is clear that such systems would see an increase in demand over time, with adequate attention paid to schemes promoting usage, as well as line extensions to facilitate the gradual increase in services. American research has also found that usership is increased from the numbers already using public transportation along the routes.<sup>40</sup> In addition, increases in population will ensure greater usage over time.

### **6.2 - Tram and Technical Details**

Ideally, the Cork Light Rail system would operate using the 1,435mm gauge system. This is the same gauge used in the Dublin Luas, as well as being the most common gauge used internationally. The common track width between Dublin and Cork will allow for shared components, such as trams, as well as use of similar planning structure from the creation of the system in Dublin. It is also the same gauge as the trains used by Iarnród Éireann, though this is not likely of any major consequence aside from concerns regarding the transportation of trams between Dublin and Cork. Trams used can be of the same variety as those in Dublin.



*Diagrams of Luas trams from the 'Luas Accessibility Guide 41*

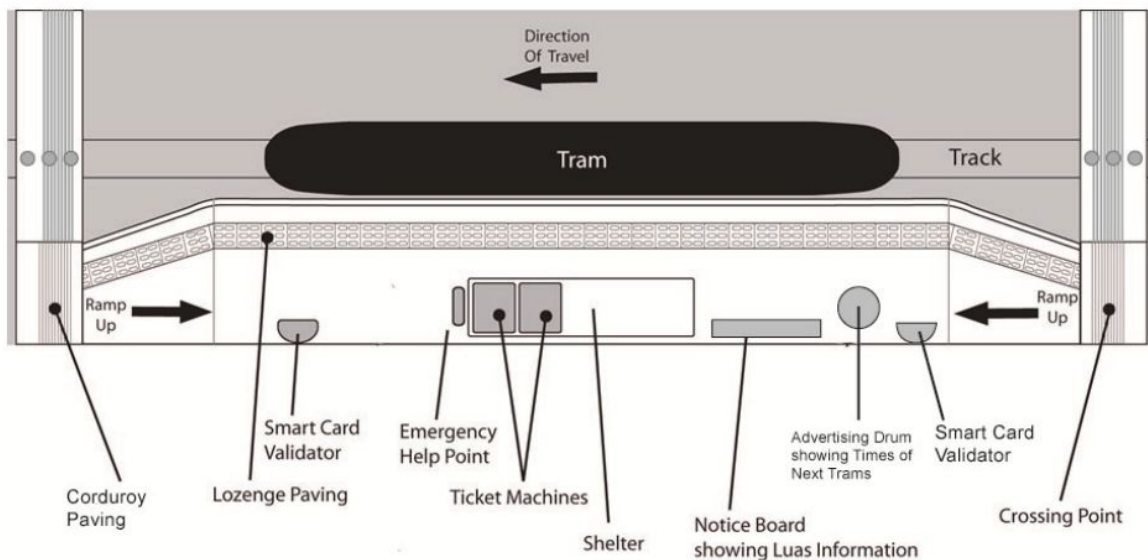
### **6.3 - Stop Design**

Any of the Cork Light Rail stops would likely follow a similar design to the Dublin Luas, consisting of a raised platform with a sheltered area for passengers.

**Disability Access** - All stops would be at floor level to the trams so as to be wheelchair accessible for riders who possess disabilities. As well as ensuring equal service is provided to those with disabilities, it prevents the need for expensive stop refitting at later stages. In addition, the expected features should be included to accommodate those with auditory, mobility, and visual disabilities. Many of these are currently in place in Dublin's system, so can be easily adapted to usage in Cork.

**Real Time Passenger Information [RTFI]** - It is also recommended for all stops to have real-time update boards, similar to those currently found at certain Bus Éireann stops in Cork City, as well as is common on the Dublin Luas, DART, and national rail services. It can also be integrated into the currently existing TFI Passenger apps.

**Indoor space** - The envisioned stop at the Black Ash would also allow for indoor space for waiting commuters, in the form of the currently existing structure. While not strictly necessary to the overall operation of the system, more significantly covered or semi-indoor stops may prove satisfactory to commuters. In addition, indoor structures are also present at stops which connect to larger nodal points, including Kent Station, Cork Airport, and Parnell Place. In other areas, integration into nearby buildings could be investigated. In certain circumstances, the creation of indoor or larger covered areas may be beneficial to commuter satisfaction, such as at Mahon Point or the Docklands. It must of course be considered - people won't use the system if it becomes synonymous with waiting in the rain.



*Diagram of a Luas stop from the 'Luas Accessibility Guide' <sup>42</sup>*

### **3.4 - Branding**

As with any product, the branding of the Cork light rail is going to contribute immensely to its public image, and therefore its overall success. It is essential for the branding of the system to be effective in order to ensure that no potential users are turned off the system to to any unnecessary blunders.

**Name** - For the purposes of this proposal, the system has been referred to as the **Cork Light Rail**, or a similar variant. Other suggestible names include the Cork Luas [or CLUAS], to relate familiarity with Dublin's own light rail system. To be considered is that such a move would likely establish a 'national standard' for future light rail systems in cities such as Limerick, Galway, or Waterford. The term 'metro' or 'subway' ought to be avoided, due to the implications of it being underground, as well as the likely connection implied with Dublin's MetroLink. Like the name 'Luas', it is also possible to draw a name from the Irish language for use, though this may have the unintended effect of confusing tourists. Naming the system, a low consequence decision, could be raised with citizens during the inquiry phase of the planning.



*logo mock-up - doubtless an actual graphic designer could do far better*

**System Branding** - It has been suggested that the logo and other design materials for transport in Dublin are 'flat and corporate'<sup>43</sup>, and that some of the maps in use for transportation in Dublin are, in the words of one critic, '*a crime against cartography*'.<sup>44</sup> It is important for a system to present an engaging public image presented by the logo, while ensuring the design remains absolutely functional.

Instead of relying on purely utilitarian designs created by the NTA, the process should follow the lead of other cities and open the process up. Outside designers, graphic artists, and members of the public would be able to give submissions to the NTA for how the branding and the map should look. In 2013, Boston's MBTA<sup>45</sup> opened up the process for redesigning its map to the public, and received far greater public input as a result. To encourage participation, a reward for the chosen design could also be considered.

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**'The Luas map is a crime against cartography'**  
**- Jonn Elledge, CityMetric**

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## **5.5 - Rider Fares**

As with any form of public transportation, there is the necessity to charge the consumer for riding the service in order to recoup operation costs. While I am content to leave the exact fares to the economists, there are other areas relating to fares that must be dealt with accurately to achieve maximum functionality and market penetration.

**Fare Collection** - In another operation that benefits from comparison and the 'lessons learned' from the Dublin Luas is the process of fare collection. A fare collection system could operate similar to Dublin's Luas, where riders are expected to purchase a ticket from a platform-side machine, which is then subject to sporadic checks from inspectors. Though fare-dodging occurs on Dublin's Luas, fines for those caught do serve as a disincentive to avoid paying. Such a system minimizes 'on-off'

times, and negates the impracticality of other systems, such as turnstiles. To date, the system has worked relatively well in Dublin, and an export to Cork seems logical.

**Leap Card** - Use of the Leap Card should also be facilitated. In addition, the use of an NFC contactless payment should be introduced. Given the advances in mobile technology, it is entirely possible to integrate the Leap Card system into a mobile service that can be used by many - a card can easily be lost or forgotten, which may be discouraging to passengers, whereas integration with one's mobile phone lessens the impact, and can help to increase overall ridership and ease of fee-collection. At present, no easy-pay app exists for mobile devices. The only connection app for the Leap Card system exists between Android systems, which allow users to top up their card via NFC technology. The NTA aims to roll out usage of NFC Leap Card technology in the future, and will ideally be existent by the time plans for light rail are being formalized.

**Integrated Ticketing** - In addition, integrated fee paying schemes for the Cork Light Rail can help to boost ridership. An integrated ticketing system permits passengers to use a single payment system to ride on a variety of different modes of transportation. This would likely fall under the usage of Leap Card services. Use of the Leap Card for use on both bus and train is currently in place, it fails to properly integrate the two, and would nonetheless need updates when the light rail arrives to Cork. In the case of Cork, such a scheme would likely apply to the Cork Light Rail, Bus Éireann services operating within the Cork region, and the Cork Suburban Rail. Integrated ticketing schemes have been adapted in many different cities, and cause an increase in the amount of passengers using public transportation. In some cases, it is also documented that an increase in revenue to service providers may occur as a result. Customers also report being more satisfied as a result in lower overall costs for frequent commuters, and due to the increased amount of services used.<sup>46</sup> Integrated ticketing schemes also include a capped rate for transit costs, where users are not charged for services once a certain financial threshold has been reached within a certain time period. When Flanders, Belgium, introduced the VRN shared-fare system in 2007, usage across system-wide modes of transportation increased by 200pc.<sup>47</sup>

## **6.6 - Public Consultation**

For a project of such magnitude, significant public input will be necessary. Already, many organizations have declared support for a light rail system in Cork, and the idea is also popular among the public..

**Citizen Input** - Such input from the public will likely resemble a a similar template to other major infrastructure projects, such as the currently underway public consultation for Dublin's BusConnects programme. This would take place after an emerging preferred route for the system has been decided on. Forms of public consultation regularly including opening up dedicated communications channels such as information lines, taking out print and broadcast advertising, the holding of community information meetings and briefings. The use of online information will also be necessary. Hearings are absolutely necessary to ensure that the feelings and motivations of the public are adequately taken into account. A similar appeal must be in place for those whose property will be affected by CPOs. Significant public pushback

## *Proposal for Light Rail in Cork City*

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in certain areas may lead to the preference for alternate routes. In terms of time frame, it is necessary that any consultancy period be long enough to ensure the public is heard accurately, while also not unnecessarily drawing out the length of the project overall. Nine months to a year may be suitable.

**Advocate Input** - Certain individuals and groups have already expressed their support for light rail in Cork. The Cork Chamber, the city's main business and development advocacy group has advocated for a system. University College Cork President Patrick O'Shea has already voiced support for such a proposal, citing the improved capabilities for student transit.<sup>48</sup>



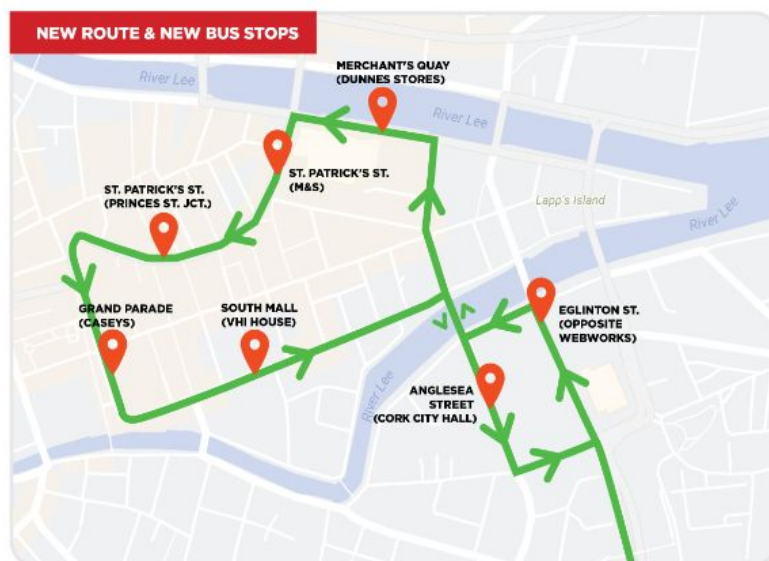
## 7.0 - Integration with Public Transport

In the construction of a light rail system in Cork, it is important to consider the connections to other modes of transportation. Proper connections to other modes of transportation can help to connect the service to destinations further afield.

Through the existence of proper connections between mass transit, as well as ease of fare payments through an integrated ticketing system, numbers of passengers using the Cork light rail system, as well as other modes of public transport, can be increased.

### 7.1 - Bus Transportation

**Park and Ride** - The Black Ash Park and Ride operates at eight stops throughout the city, connecting the city center to a parking station of significant size near the South Link.



*Map of current Park and Ride services*

It is possible for the Cork Light Rail system to integrate with the newly restructured Black Ash Park and Ride service. The envisioned light rail would share the Black Ash stop with the Park and Ride, due to the proximity to the light rail corridor, and the availability of parking space. The existence of a light rail system may give the Park and Ride opportunity to alter some of its services, as a significant area of the city would also be covered by the light rail, and it may be unnecessary to have the same area covered by two similar modes of transportation. Alternatively, the service could serve to supplement the light rail system, should the area become heavily trafficked during peak times.

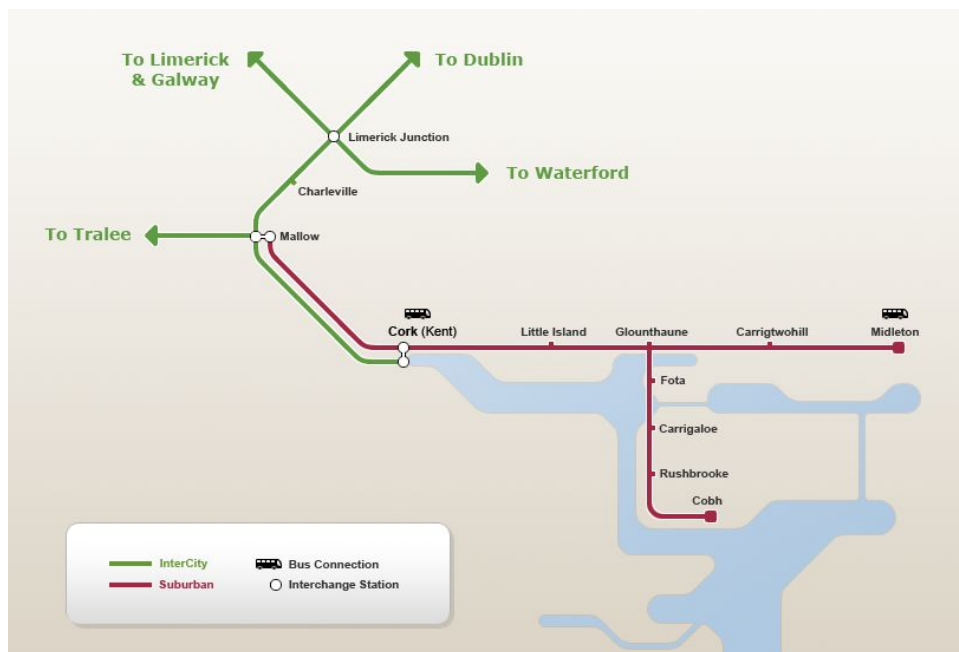
**Bus Éireann** - Another part of this expanded transportation network is bus transit. With the arrival of LRT to Cork, it will be necessary to revisit the way that bus routes are structured. Some routes can be shortened in both length and frequency as a result of the new light rail system. Other routes will need to be rerouted as a result of the LRT-only zoning of some streets. In many areas, the loss of bus lanes to LRT lanes will remove the built in priority, though it is hoped that the reduction in traffic will ensure regular service regardless. Integrated ticketing schemes can help encourage transfers between light rail and the bus service at points, and it is likely rerouting of routes to ensure proper transfer will occur. Rural services will be affected very little.

In addition, the proposed Red Line connects to the main bus network at Parnell Place, where a variety of InterCity services can be taken, as well as bus services to Britain.

**BusConnects Cork** - It is possible for designated bus corridors [DBC] to supplement the proposed light rail system. This can aid in the formation of connections to places in Cork City not directly included in the proposal, but still demanding better mass transit connections and eventual integration into the Cork light rail network. Areas to be considered for such a service include Blarney, Carrigaline, Glanmire, and Douglas.

**BusConnects and System extension** - In time, extensions to the system beyond the envisioned plan can be considered, replacing these designated bus corridors. Lines that prove to be successful can be considered for eventual integration into the Cork Light Rail system. However, to be noted is that eventual development in these areas, as well as the passage of time during the construction of the system, may result in direct inclusion of these areas in the core light rail system. Dangers have been warned of preferring BRT to LRT when the latter would be more effective, including the costs and difficulties of transitioning to light rail when service would've been preferable from the offset.<sup>49</sup> Additional connections could also be facilitated to areas beyond the Greater City Area, such as Macroom and Kinsale.

## 7.2 - Cork Suburban Rail



Map of Cork Suburban Rail services

The Cork Suburban Rail is the primary heavy rail network serving much of the Cork City suburbs that lie to the east of the city. Currently the route stretches from Mallow, connecting the the city center at Kent Station. It continues to two separate termini at both Midleton and Cobh, with stops existing as Carrigtwohill, Glounthaune, and Little Island, among others. The Cork Light Rail system would connect to the Cork Suburban Rail at Kent Station, on both the proposed Red and Blue Lines. The rest of the Iarnród Éireann train network would also connect to the Cork Light Rail at Kent Station. Areas in County Cork covered by the national rail service include Charleville and Mallow.

THE CORK SUBURBAN RAIL SERVICE AVERAGES  
**5,894 PASSENGERS PER DAY**



At current, the Cork Suburban Rail has a total average of 5,894 passengers per day.<sup>50</sup> It is likely that an expansion in services in conjunction with the development of a light rail system will lead to an increase in usage.

Connections to the CSR can help to integrate the two systems as far as Cobh, Midleton, and

Mallow. As part of developments around the site of the former Port of Cork, a rail station is also planned for Tivoli. Additional stops could also be added along the rail routes to further increase connectivity, as well as expanding the service. As outlined in the route proposal, A CSR stop in Blackpool would add another access point between both the CSR and the Cork Light Rail. The connections to the Cork Suburban Rail would

also negate any immediate need for extensions of the Cork Light Rail system in the eastern direction. - See Section 5.3 - Blue Line, Blackpool

### **7.3 - Air Transportation**

The Cork Light Rail system would connect to Cork Airport at the southern end of the proposed Blue Line. Such a connection would be highly beneficial for international tourism to Cork, with a route directly linking the airport and the city center, as well as links to the Suburban Rail and National Rail services at Kent Station and the envisioned Blackpool Station. Because most passengers don't frequent the Airport regularly, this is only to be considered, not focused on. At current, the airport is only served by the 226A bus.

### **7.4 - Cycling**

In many parts of the route, especially in the city center, separate cycle lanes are going to fall victim to the proposal. While unfortunate, it is instead suggested that cycling routes be rerouted wherever possible in order to preserve current incentive for cyclists. In certain areas, the necessity of road widening will result in a choice : CPOs can be taken in order to compensate for the loss of the cycle lane, or instead the cycle lane can permanently or temporarily merge into the pedestrian sidewalk. This will likely fall to the practicality of CPOs in each area. - See Section 8.3 - Eminent Domain

The Coca-Cola Zero Rentable Bikes also can be integrated into the proposals for a light rail system as part of a greater focus on non-car methods of transportation. The scheme has resulted in an increase in cycling around the city.<sup>51</sup> At current, there are 34 stations where bikes are rentable, situated around the city. It is possible for any future expansions of the scheme to occur in tandem with the development of the proposed light rail system. People may be more likely to use the bicycle sharing system if they are positioned in a convenient manner, especially near to highly used public areas. In this case especially, proliferation of a public bike scheme can help citizens to access areas not served by the proposed light rail system. An extension of the scheme to Ballincollig would also help to serve a broader user base.



## **8.0 - Problems and Challenges**

As with the introduction of any mass transit scheme to a major urban area, there are going to be a variety of unique problems and challenges to be dealt with. Should they be dealt with in an appropriate manner, it should not present a threat to the overall success of the system.

### **8.1 - Peripheral Construction**

No form of mass transit is able to perfectly fit into any city without at least some disruption. In this case, there are going to be some issues occurring directly and indirectly as a result of construction.

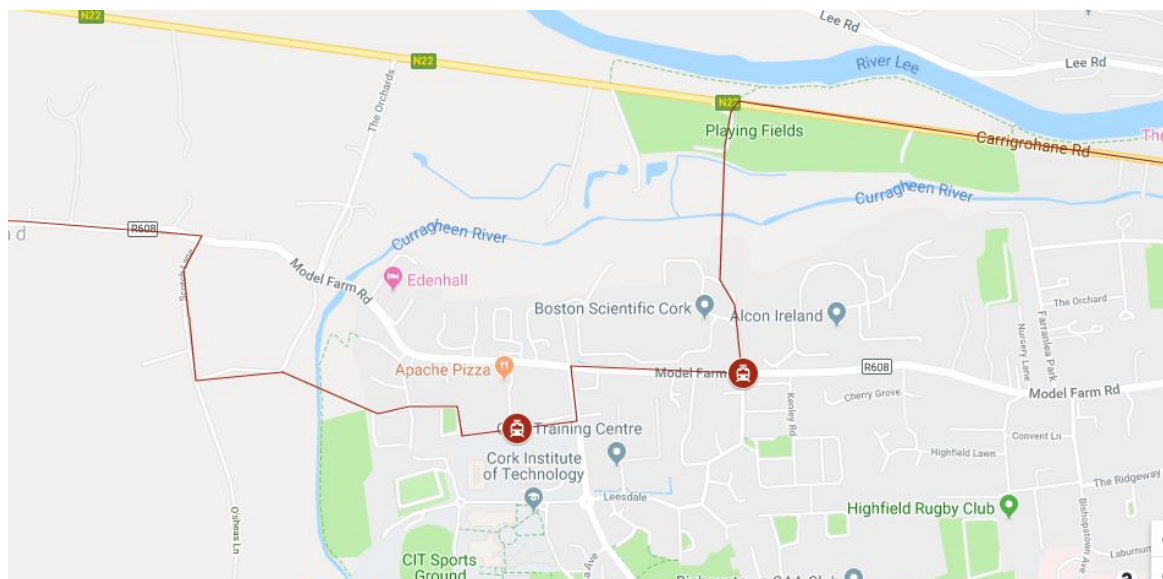
**Road Diet** - As a result of many of the current road sizes, two types of peripheral construction will be needed, either road widening or semi-pedestrianization. In many cases, such as on Washington Street, replacing of bus lanes with Luas lanes may be necessary to prevent grade-mixing, or to avoid the need for unnecessary CPOs. Other construction may be necessary at certain points in order to reduce the impact on motorists, pedestrians, and property owners.

**Bridges** - No amount of clever wording can mask the fact that Cork is a city built on rivers and an island. In many places, it will be necessary to widen bridges in order to facilitate the addition of the light rail system to the public transport infrastructure. At current, several bridges that the system would encounter in the proposal are only wide enough for the existing car lanes, notably Clontarf Bridge. In order for the light rail to be able to effectively cross the city, this, and many other bridges will necessitate widening.

Also necessary will be the creation of more bridges across the Curraheen River in two points along the route. The first is a short stretch between the stops for Ballincollig East and MTU Cork. The second is a similarly short area through the IDA Business Park between the IDA Business Park and Lee Fields stops. The route crosses rivers and bodies of water at other stages, though these are served by currently existing roads. Expenses for construction at these areas can be offset or avoided entirely through brief grade-mixing.

In addition, and depending upon site-surveyed need, there is the potential need for the strengthening of bridges in order to ensure public safety due to any increased strain put on the bridge as a result of the frequency of tram passage.

## Proposal for Light Rail in Cork City



*Visible are both necessary crossings of the Curraheen River*

### 8.2 - Parking

Another necessity to both increase ridership will be to introduce parking in close proximity to light rail stops, as those wishing to ride the Light Rail will have sufficient space to leave their car, and ride the Light Rail instead. This would be established by having large parking lots (either open parking, or multi-storey stacked parking) within walking distance of the stops. This is a common tactic for mass transit systems around the world. These would operate in a similar vein to the 'Park and Rides' in operation in Dublin. In Dublin there are currently seven different Park and Ride facilities. Three are in operation on the Red Line, with a further four on the Green Line. Together they provide 2200 parking spaces. Another privately operated one is in place at Tallaght, on the Red Line, which has over 450 spaces.<sup>52</sup> Tallaght Cross and Balally are the only two multi-story car parks.

**Land Usage and Density** - Other considerations also come into concern relating to parking. One is whether the space devoted to parking spaces would be better used as retail space or as housing units, especially owing to the high intensity usage of land along a light rail corridor. In addition, there also remains the fact that said space would contain little activity during non-peak hours. There is also a link between the availability of accessible and low-cost parking with the amount of usage on a light rail system, and the consequent footfall within the city. In order to maximize the amount of parking provided in areas, while ensuring that sizeable areas of land still remain open for retail or housing development, multi-story car parking is most efficient. Privately-owned operation is also an option.<sup>53</sup>

**Bicycle Parking** - There are also areas provided at certain stops for the parking of bicycles. Due to the reduced amount of space they necessitate, they can be placed at places aside from the main parking areas. There are also bike lockers at certain stops, which can be rented. The placement of cycle racks at stops should be a central aim during the planning phases, to ensure the system works in tandem with initiatives to promote cycling in Cork City.

These parking areas also act as a source of revenue through the sale of daily, weekly, monthly, and annual access passes, as well as the collection of punitive fines.

### **Potential sites for the placement of parking areas:**

*Ballincollig* - located close to the Classes Lake stop, placement in this area ensures land of a more valuable nature in the Ballincollig Town is not taken up by parking spaces.

*Black Ash* - adaption of the currently existing Black Ash Park and Ride into a facility that is capable of meeting the demands of potential light rail users in the locality.

*Blackpool* - placement of a parking facility in this area can help to ensure usage from those in the Blackpool area, as well as those who could be enticed into using it through the placement of such facilities. In addition, this area would be useful due to the train station contained in the proposal.

*Mahon* - The placement of a parking area in Mahon ensures that there is an area containing significant parking at every end of the system. The proximity to the South Link Road may also aid in reducing traffic and congestion in the City Centre as commuters from further afield opt to utilize mass transit instead of continuing motor commutes.

## **8.3 - Eminent Domain**

Due to the nature of construction, while attempting to preserve roads as much as possible, compulsory purchase orders will be necessary for many areas along the proposed route. Compulsory purchase orders [CPOs] are government issues requiring the acquisition of private property for use in public planning schemes, primarily those that run along main roads, leaving little room for development. In both the development of the Dublin Luas, as well as in the recent BusConnects plan, use of eminent domain was prominent in planning.

**Land type** - The use of CPOs will result in a number of effects - largely the requisition of areas along the side of roads. Included in this is property without erected structure belonging to many landowners, while in other areas it is from outdoor commercial premises. This will largely be done without the agreement of the owner, though a public consultation period should be put in place, in order to ensure that the input of the citizens affected is taken into account. In other cases, trees on roadside areas may need to be removed, and sidewalks narrowed. Also noted is the occasional loss of cycle lanes along certain areas where eminent domain is enacted. In order to reduce the costs of CPOs, as well as to minimize the impacts on homeowners, cycle lanes are removed instead of requisitioning more land through the CPO. This may be necessary in some areas where little 'front garden space' is available. So as to continue the encouragement of cycling in Cork City, any cycle lanes removed should be relocated to other areas in close proximity to the original location.

**Financial Compensation** - Owners do receive financial restitution at market value, with the aim of the landowner being in the same financial situation before and after the CPO. Each property is assessed individually, and receives compensation. Compensation for each individual CPO relating to Dublin's BusConnects plan is expected to be in the tens of thousands of euro. CPO totals during the construction of the Dublin Luas totaled €30 million.<sup>54</sup> Due to lower property prices in comparison with Dublin, the total amount of money spent on CPOs will likely be lower, assuming a similar rate of land is expropriated.



## Conclusions



Public transportation in Cork has the potential to be a world class network for an emerging European city. Through the use of industrious long-term planning, a light rail system for Cork can help to bring Ireland's second city into a new age of opportunity. The introduction of such a system is not only feasible, but will be necessary as population grows in the coming decades, and must be considered sooner rather than later. Increased connectivity as a result brings many benefits, including more reliable services, the reduction of congestion, and the attraction of increased development.

I hope that the plan I have outlined can help form a valuable backbone of any implemented plans for the Cork City area, and be used to further aid in discussion regarding the future of transportation in Cork.

Contact : [ciaranmeers@gmail.com](mailto:ciaranmeers@gmail.com)

Site, including route map, viewable at [www.corkluas.wordpress.com](http://www.corkluas.wordpress.com)

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