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What is the Bus Network Redesign?

What Services Constitute the Bus Network?

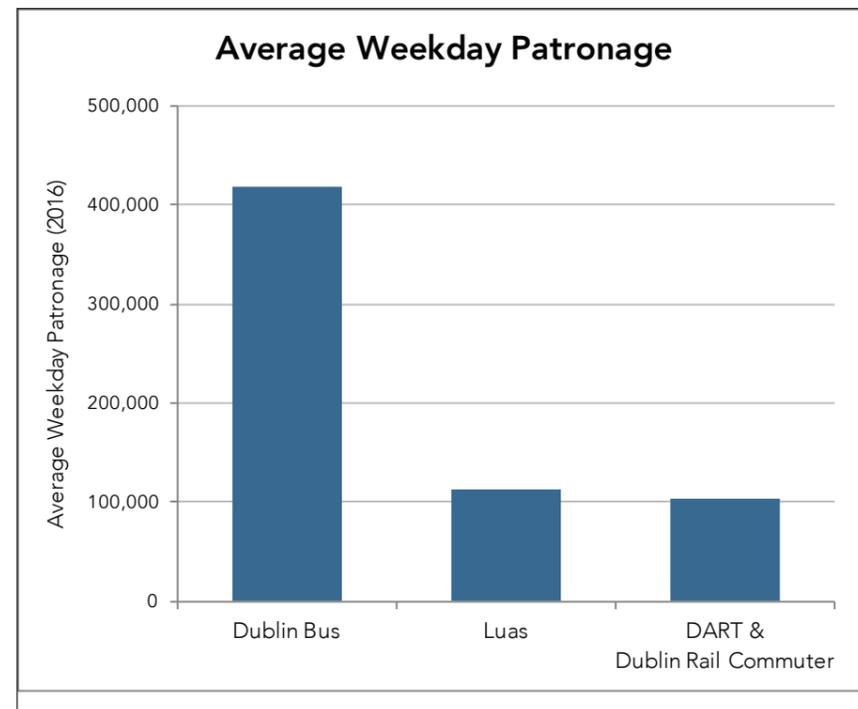
Buses are the backbone of Dublin's public transport system

Public transport is essential to a city of Dublin's size and density, because there is simply not room for everyone's car.

The vast majority of public transport in Dublin is provided by buses. Because it takes a very long time to plan and build new rail lines, this will remain true, at minimum, for the next ten or more years, and will always be true to some extent. Even in cities like Paris, where almost everyone is within 800m of a metro station, enormous numbers of people travel by bus.

As a result, a study of Dublin's bus network is a study of most of the public transport in Dublin. It is also a study of what can be done soon, because buses are the only public transport technology whose services are easy to revise.

Figure 22: Average weekday patronage on the three primary public service transport operators in the Dublin area. Buses carry approximately 2/3 of total patronage.



How buses are regulated and funded

Public transport throughout Greater Dublin, including bus and rail, falls under the jurisdiction of the National Transport Authority (NTA). NTA's task is to make all service work together as a single coordinated regional network.

NTA is the *regulator* for all public transport services, but it is also the *planner and purchaser* of almost all of them.

Services planned and purchased by NTA are called the Public Service Obligation (PSO) network. The bus portion of the PSO network is currently operated by Dublin Bus under contract with NTA.

Outside the PSO network are a small number of *commercial* services. This term means that the operating company expects to make a profit without public subsidy.

Because they serve specialised markets, most commercial services are not considered part of the coordinated regional network. A good example of commercial service is the set of airport express lines, which charge higher fares and have special space for luggage.

With that exception, a study of the PSO network is a study of all services designed for a diverse public, and intended to work together to provide mobility across all of Greater Dublin.

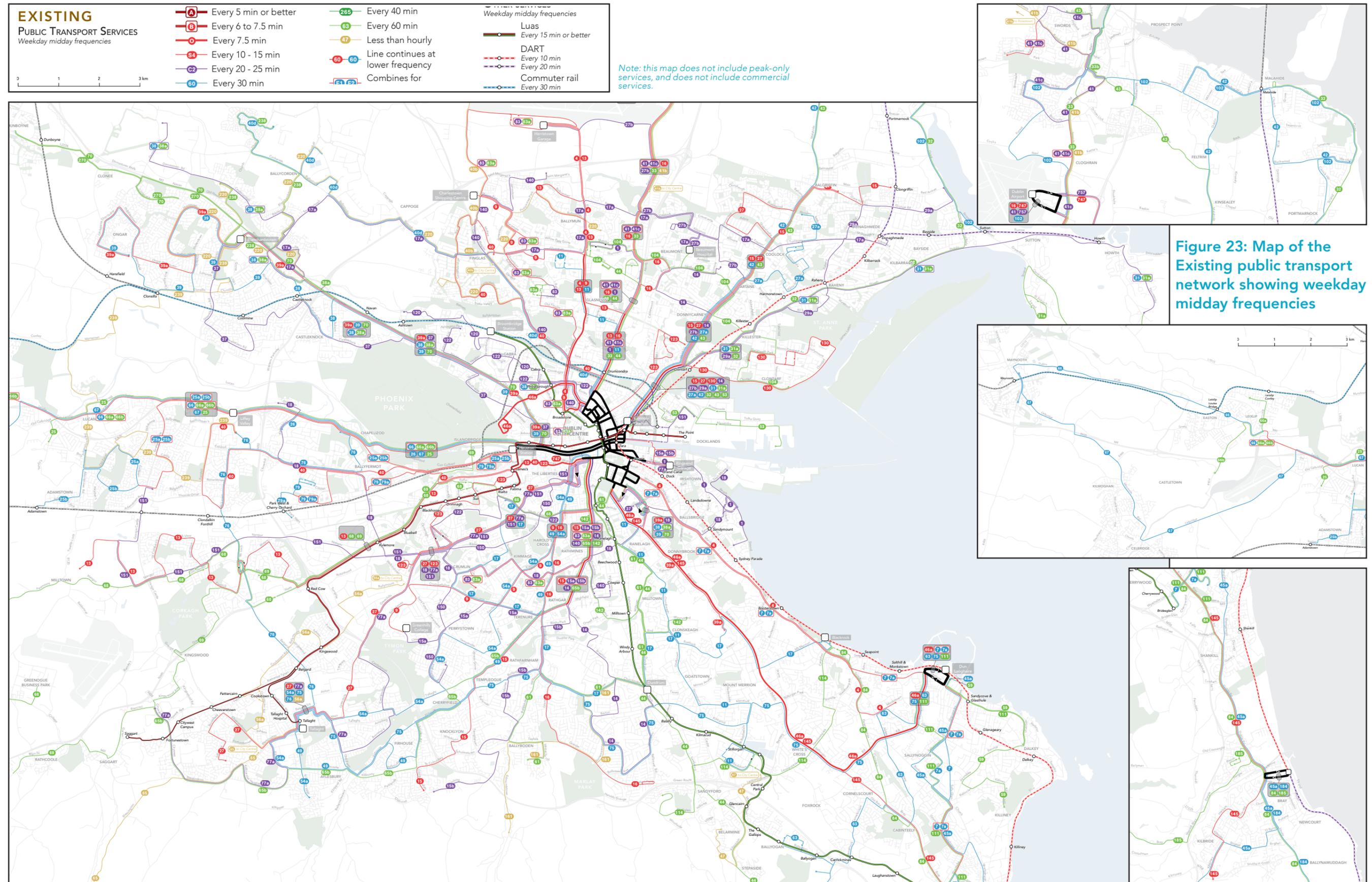
Introducing the Network

The PSO network (Figure 23 on page 21) covers all of the built-up areas in Dublin City, South Dublin, Dun Laoghaire-Rathdown, and southern Fingal.

A few routes extend further out, reaching as far as Blessington, (Co. Wicklow), Newcastle (Co. Wicklow), Maynooth (Co. Kildare), Dunboyne (Co. Meath), and Balbriggan (northern Fingal).

The maps on page 21 introduce a style used throughout this report, in which colours mostly represent frequency of service. Bright red lines are frequent service, which means that they run every 15 minutes or better, all day. This is necessary because frequency is a critical element of service, and a network can only be fully understood if the patterns of frequency are apparent.

Existing Network: Big Picture



Why Redesign the Bus Network?

Redesigning Dublin's bus network is an opportunity to review the evidence for public transport demand, and to design a network that meets those demands most efficiently. Redesign does not necessarily seek massive change, but it can have that outcome.

The key point is that thinking is not constrained by the existing network. Where the analysis suggests that existing service patterns make sense, those elements are retained. Ultimately, the goal is to provide a network designed around the needs of Dublin today and tomorrow, rather than one based on the past.

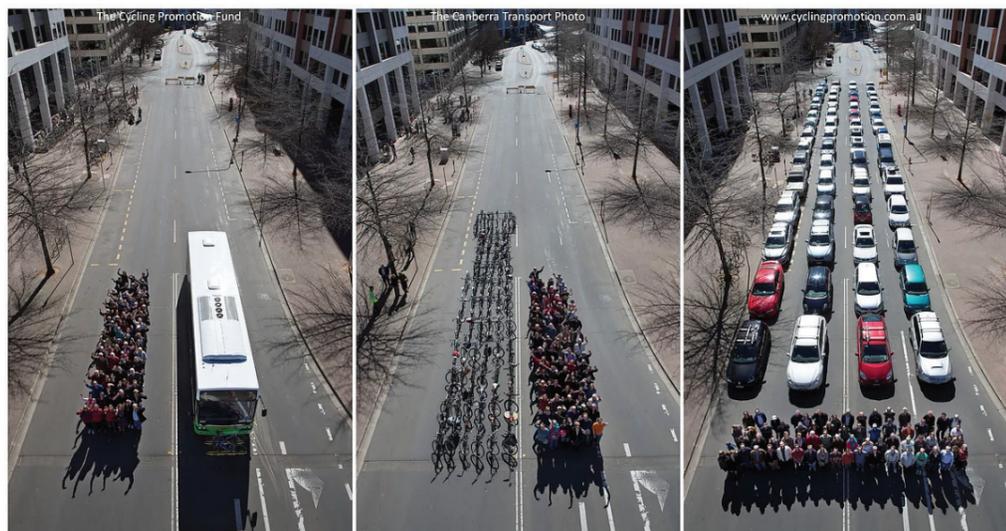
Limitations in Space

Like most European cities, Dublin presents features that make public transport essential, and require that it be highly efficient:

- **Severe road space limitations.** Across most of Dublin, especially in the older core, street-width is constrained and can be costly and problematic to expand.
- **Intensification of land use.** In response to growing demands for housing and commercial space, both central and outlying areas are growing more dense. More and more people are living within the same limited area.

These two factors combined mean that more and more people are trying to use a fixed amount of road space. If they are all in their cars, they simply do not fit in the space available. The result is congestion, which cuts people off from opportunity and strangles economic growth.

Figure 24: Road space required to move the same number of people using public transport, bicycles, and cars



The only alternative to congestion is for a larger share of the public to rely on public transport and other alternative modes. This requires services that most efficiently respond to the city's changing needs, as well as corridor improvements – also being pursued by NTA – to give buses a level of priority over cars that reflect the vastly larger numbers of people on each bus.

Emerging Patterns in the City Centre and Regional Centres

Meanwhile, several other types of changes are challenging the structure of the existing network:

- City centre street space is increasingly constrained. There are increasing demands to devote more space to bikes, pedestrians, and other aspects of civic life, in addition to catering for vehicle traffic and bus movements. All of these competing needs put increasing pressure on the limited road space available.
- Regional centres such as Blanchardstown, Tallaght and Swords are growing larger and denser. And other major destinations, such as the employment hub of Cherrywood, are emerging around the edges of the region. The growing number and importance of these suburban centres will trigger more orbital demand for travel that bypasses the city centre.

These two factors are interrelated. The most efficient way to grow the bus network without growing bus volumes in the city centre is to vastly improve orbital services, so that fewer people are forced through the city centre when it is not their destination.

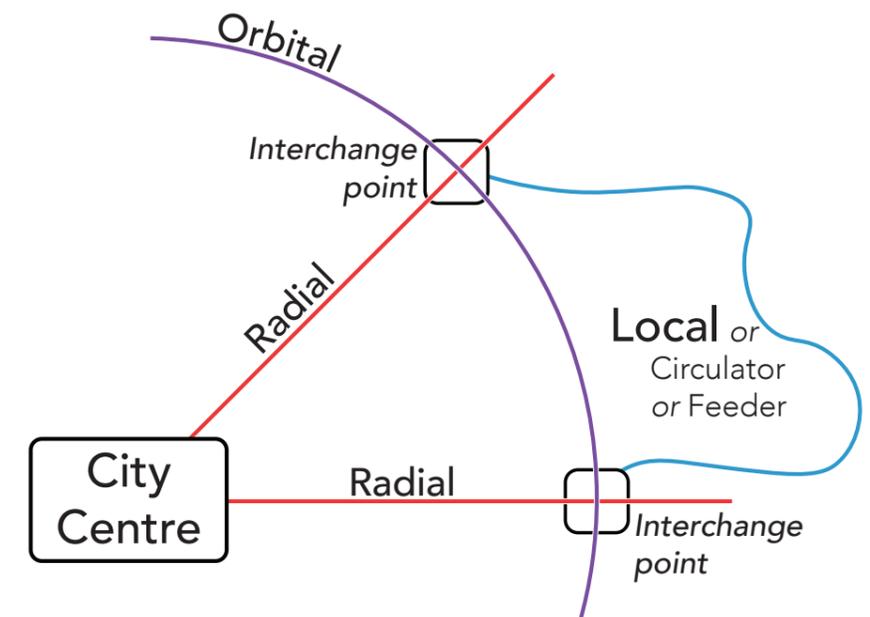
In this report, we will refer frequently to the three main kinds of public transport route:

Radial routes connect the city centre to neighbourhoods and suburban areas. (Radial routes that continue across the city centre, serving radial paths on opposite sides, are called **cross city** routes in Dublin.)

- **Orbital** routes connect key neighbourhoods and suburban centres to each other, without traversing the city centre.
- **Local or Feeder** routes travel shorter distances within neighbourhoods and suburbs, typically connecting to radial and orbital service at an interchange point.

*A fourth type, the **Express**, may have any shape but typically runs nonstop for a long segment going to or from a major destination.*

Figure 25: The three main types of public transport route are called radials, orbitals, and feeders.



Immediate Changes in the City Centre

Finally, some near-term events required changes to the network as early as 2018:

- The **Luas Cross City** project, which is in service, extended the Luas Green Line north from St. Stephen's Green across the city centre to Broombridge (see Figure 26). This line caused changes to both bus demand and to the streets that buses can use.

Figure 26: Map of the Luas Cross City alignment.



- The **College Green Civic Plaza** project is anticipated to close the east end of Dame Street to vehicle traffic, severing the bus link between Dame Street and O'Connell Street. This will reroute large numbers of buses via the Quays, and require rethinking the affected routes in this new context. Figure 27 shows a conceptual rendering of the College Green project.¹

Figure 27: Proposed design for the College Green Civic Plaza. The path across College Green linking O'Connell Bridge and Dame Street will be closed to all vehicles, including buses. Approximately 120 to 150 buses per hour currently use this path.



¹ This project remains under review by An Bord Pleanála at the time of this report.

Where the Bus Network is Going

Network Redesign: Study Year 2019

This network design study focuses on changes that could be implemented quickly, as early as 2019.

This short-term focus is not in conflict with rational long-term planning. Through the Transport Strategy for the Greater Dublin Area, NTA has already established the long term pattern of core transit services, and also many of the key permanent bus corridors. This study builds on the intentions of the Strategy, and considers how short term changes can move in the direction that they define.

In addition, this study identifies new frequent bus corridors and infrastructure needs that may have long-term impact. The study recommends that these findings be considered in the next round of long-range planning. In this way, long term and short term planning support one another.

Medium Term: the BusConnects Program

The Bus Network Redesign is the first step in a series of transformative changes to Dublin's bus network over the coming years. The next steps in achieving this transformation include:

- building a network of **"next generation" bus corridors** on the busiest bus lines to make bus journeys faster, predictable and reliable;
- developing a **state-of-the-art ticketing system** using credit and debit cards or mobile phones to link with payment accounts and making payment much more convenient;
- implementing a **cashless payment system** to vastly speed up passenger boarding times;
- a **simpler fare structure**, allowing seamless movement between different bus services without financial penalty;
- a network of **park and ride facilities** at key locations on national roads.
- a **new bus livery** to integrate bus vehicles of different operators and types, and providing a modern look and feel to the new bus system;
- **new bus stops** with better signage and information and increasing the provision of additional bus shelters; and
- transitioning to a new bus fleet using **low-emission vehicle technologies**.

Long Term: Transport Strategy for the Greater Dublin Area

The NTA's long term strategy for Greater Dublin provides direction on four layers of the network:

- The most important Core Orbital and Core Radial corridors are slated to receive significant infrastructure and service improvements.
- A Metro line is envisioned, first connecting the city centre to the airport. In a second phase, a southern Metro line will replace the current Luas Green Line south of the city centre.

- Further Luas lines are contemplated, including a new line to Liffey Valley and Lucan, an extension of the Green Line to Bray, an extension of the Luas Cross City to Finglas, and an extension of the Red Line to Poolbeg.
- High frequency DART service is expected to grow with the addition of western lines, to Dunboyne, Maynooth and Celbridge.

This study will be strongly guided by these ideas, with the goal of moving the redesigned bus network in the direction they indicate. However, new considerations arising in this study may also suggest refinements to the details of the core bus services in the strategy.

Figure 28: BusConnects includes making speed and reliability improvements to bus corridors, developing cashless fare systems, and using low-emission vehicles.



Figure 29: Long Term - Comprehensive Regional Rail Network



Figure 30: Medium-Term - Core Radial Bus Corridors

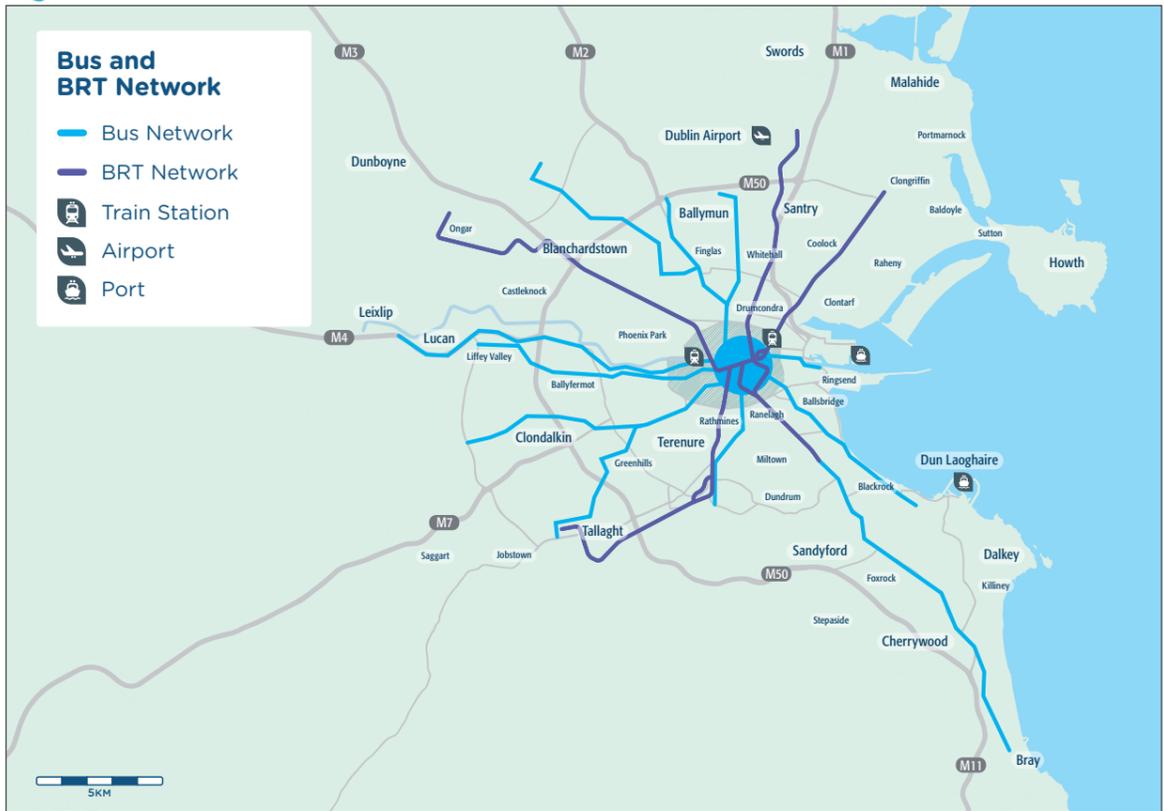


Figure 31: Medium Term - Core Orbital Bus Corridors

