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What is the Bus Network Redesign?

What Services Constitute the Bus Network?

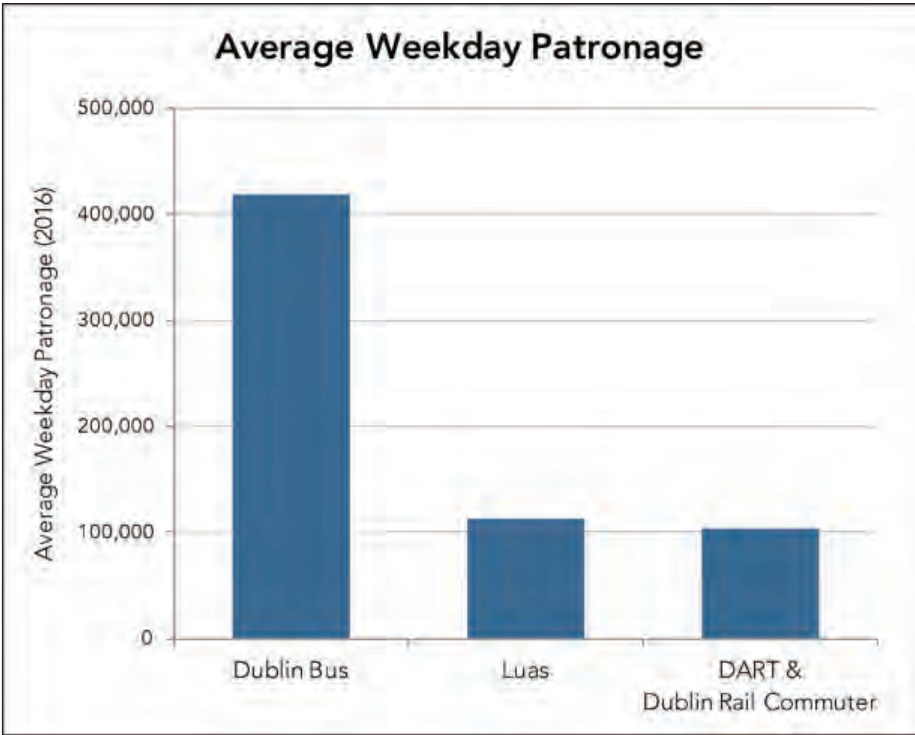
Buses are the backbone of Dublin’s public transport system

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: The chart below shows average weekday patronage on the three primary public service transport operators in the Dublin area (2016). Buses carry approximately 2/3 of total patronage. Patronage has continued to grow through 2017 and 2018.



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. As of late 2019, approximately 90% of the bus portion of the PSO network is operated by Dublin Bus, and 10% is operated by Go-Ahead Ireland. Both Dublin Bus and Go-Ahead Ireland operate this service under contract to 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 (including those operated by Dublin Bus), 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 covers 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, (Wicklow), Newcastle (Wicklow), Maynooth and Celbridge (Kildare), Dunboyne (Meath), and Balbriggan (northern Fingal).

The maps on the following page introduce a style used throughout this report, in which colours mostly represent frequency of service. **Red** is used to indicate high frequency service, **every 15 minutes** or better all day. **Thick red** is used for very high frequency, **every 6 to 8 minutes** or better, and **dark thick red** is used for extremely high frequency, **every 5 minutes** or better. Other colours indicate lower frequencies, as shown below.

Figure 23: Legend of colours used on bus network maps in this report



Existing Network: Big Picture

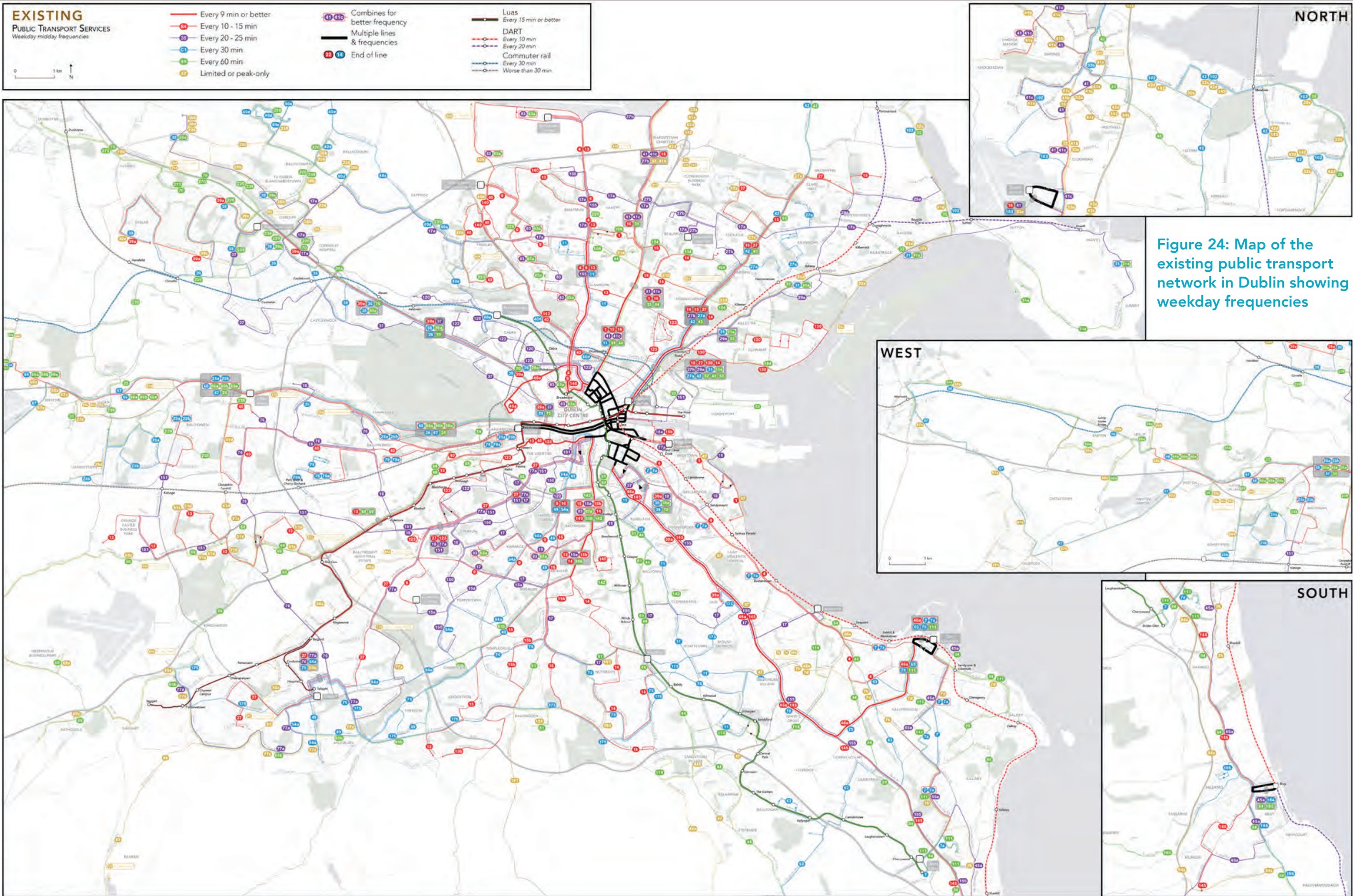


Figure 24: Map of the existing public transport network in Dublin showing weekday frequencies

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 large parts 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 25: Public transport and cycling require far less space to move the same number of people than cars, as shown in the photo below.



The only alternative to congestion is for a larger share of the public to rely on public transport and other non-car 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 demand for orbital 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:

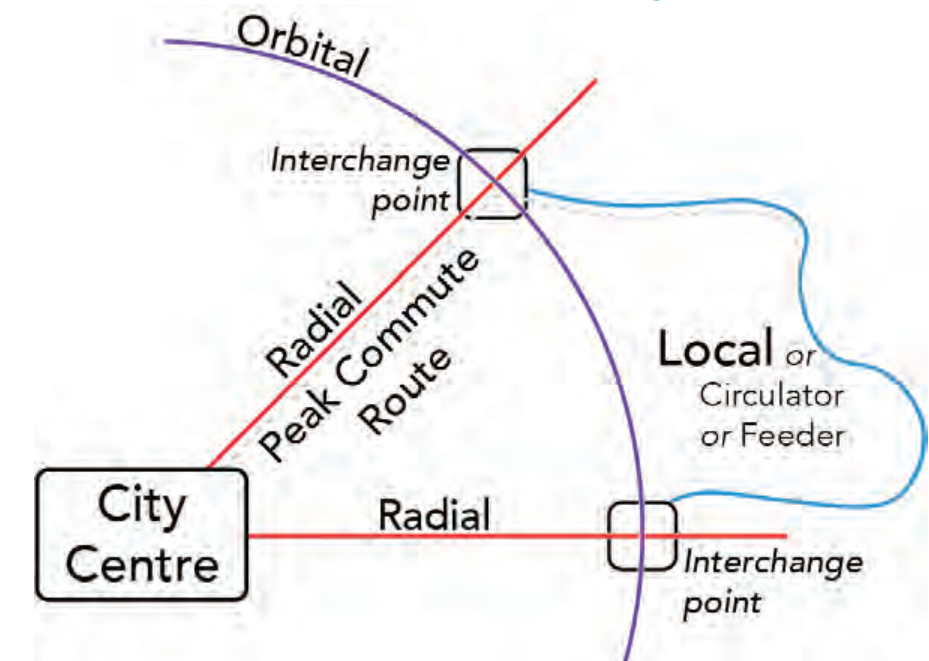
Radial routes connect the City centre to neighbourhoods and suburban areas. (Radial routes that continue across the city centre, serving radial paths on opposite sides, are called **cross city** routes in Dublin.)

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** route, may have any shape but typically runs nonstop for a long segment going to or from a major destination. In Dublin, most express routes provide direct service from outer suburbs to the City Centre at peak commute hours.

Figure 26: The three main types of public transport (radials, orbitals, and feeders, as shown in the diagram below.



Network Redesign: Study Year 2019

This network design study focuses on changes that could be implemented quickly, some as early as 2020.

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 **Core 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 new Metrolink line is envisioned connecting the City Centre to Dublin Airport. In a second phase, this project may be extended south, replacing much of 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.

The bus network redesign study has been 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 have also suggested refinements to the details of the core bus services

Figure 27: BusConnects includes improvements to bus corridors, fare and ticketing systems, bus stops and vehicles, and park and ride facilities, portrayed in the graphic below.



Figure 28: Map showing Dublin-area public transport infrastructure improvements targeted for 2027. These include significant upgrades to all the radial Core Bus Corridors; Metrolink from the Airport to Cherrywood, DART extensions to Dunboyne, Maynooth and Celbridge; and potential Luas extensions to Finglas, Lucan and Bray.



Strategic Choices

Starting in late 2016, the NTA, Dublin Bus and consultant team embarked on a comprehensive analysis of the existing public transport network. This analysis was detailed in the Choices Report, released in June 2017. The content of the Choices Report is reflected in Chapters 1 to 5 of this report. The Choices Report presented four key strategies for updating Dublin’s bus network.

- Standardize bus service into clear categories based on frequency.
- Simplify radial service into very frequent cross-city spines.
- Build more frequent orbitals, in some cases replacing infrequent radial service with frequent orbital service.
- Replace infrequent radial routes with frequent local service to major suburban centres.

These strategies were overwhelmingly approved in an initial public consultation (see Chapter 6), providing the NTA with a mandate to proceed with developing a network proposal.

Initial Network Proposal

In July 2018, the NTA released a proposal for the complete redesign of the bus network. This proposal was developed collaboratively by the NTA, Dublin Bus, local councils and the consultant team.

The proposed redesign reflected the four strategies, and a major expansion of evening and weekend service. The proposed network was designed to provide significant improvements in travel times for the majority of residents, while also requiring more interchange. Public consultation revealed significant public concerns; some of the most cited included:

- Concern about the higher level of interchange in general, the quality of interchange facilities, and the need for many to interchange to travel to or from the City Centre.
- Concern about whether proposed peak services would provide sufficient passenger capacity to avoid overcrowding.
- Concern about the impact of network changes on populations such as schoolchildren, the elderly, as well as people with mobility impairments or intellectual disabilities.
- Concerns about crowding on Luas and rail services, and its impact on the viability of certain required interchanges.

Revised Network Proposal

In a series of design workshops held over Autumn 2018 and Winter 2019, the NTA, Dublin Bus and consultant team have made significant revisions to the network proposal. The goal of these revisions has been two-fold:

- Maintain and expand the significant access and travel time gains made possible by restructuring the bus network.
- Address as many public comments and concerns as possible. This includes numerous changes to the network: all but eight of about 100 proposed routes have been revised in some form.

Addressing many of these concerns required increasing the total level of service provided. The revised network proposal includes approximately 22% more bus service (on an annual basis) than is provided today, which would be over 50% more than what was provided at the start of this study, in 2016 (see table below and Chapter 7, page 90 for details).

The following page shows a big-picture representation of the proposed network over most of the Dublin area. The full set of revisions to the network is described in Chapter 6. The full revised network proposal is described with detailed maps, tables and text in Chapter 7 of this report.

Figure 29: The table below shows existing levels of bus service in Dublin as of 2016 and 2019, and compares those to proposed levels of bus service in the initial and revised network proposals.

	Existing Service		Proposed Network	
	2016	2019	Initial	Revised
In-Service Kilometres	47.6 mln.	54.4 mln. + 14%	55.1 mln. + 16%	64.3 mln. + 35%
In-Service Hours	3.03 mln.	3.78 mln. + 25%	3.86 mln. + 27%	4.61 mln. + 52%

Revised Proposed Network: Big Picture

