

BRIEFING NOTE: PUBLIC TRANSPORT ON NATIONAL ROADS

JULY 2020

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01. THE ROLE OF NATIONAL ROADS IN A SUSTAINABLE TRANSPORT SYSTEM



01. THE ROLE OF NATIONAL ROADS IN A SUSTAINABLE TRANSPORT SYSTEM



Sustainable Transport Systems

In 2001, the Transport, Telecommunications and Energy Council configuration (TTE) defined a sustainable transport system as a system that:

"allows the basic access and development needs of society to be met safely and in a manner consistent with human and ecosystem health and promotes equity within and between successive generations;

is affordable, operates fairly and efficiently, offers choice of transport mode, and supports a competitive economy, as well as balanced regional development; and

limits emissions and waste within the planet's ability to absorb them, uses renewable resources at or below their rates of generation and uses non-renewable resources at or below the rates of development of renewable substitutes while minimising the impact on the use of land and the generation of noise ¹"

Having regard to the above definition Transport Infrastructure Ireland (TII) does not consider sustainable transport to be:

- mode-specific;
- focused solely within urban areas; or
- mobility related.

This definition encompasses a broad range of transport modes and infrastructure that together form part of a sustainable transport system.

Within the TTE definition of sustainable transport, the road network forms a key part of a sustainable transport system. Outlined within this Note is the role played by National Roads in the delivery of a sustainable transport system in Ireland, and also explores if National Roads have the potential to play an increased role over the coming years.

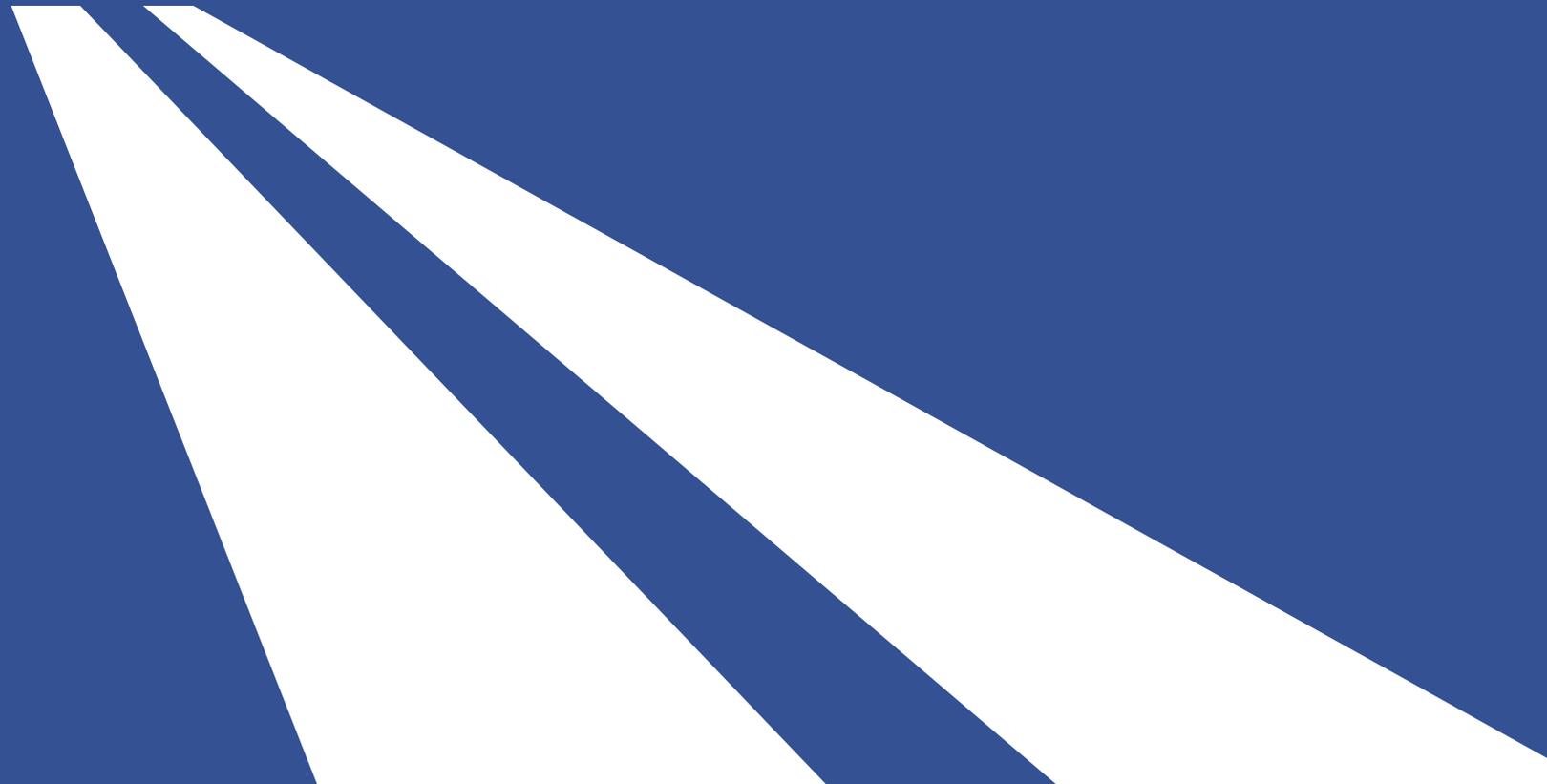
The National Road network

National Roads are made up of the Motorways, National Primary Roads and National Secondary roads. National Roads are essential for the economic and social wellbeing of the country and its people. This network connects communities and allows people to travel for a variety of purposes such as employment, education, leisure, and cultural purposes, as well as enabling the movement of the goods and materials that are important for the Irish Economy. National Roads represent a huge asset and investment by the State developed over decades.

National Roads also play an important role in delivering public transport in Ireland. The Irish public transport network of services is comprised of rail-based services, such as those operated by Irish Rail and Luas, and road-based services provided by a diverse number of bus and coach services. It should be noted that while Luas operates on a fixed rail, parts of its alignment runs along roads. Taxis are also part of the public transport system and their operation can also overlap with National Roads.

¹ Source ELTIS the Urban Mobility Observatory:
<https://www.eltis.org/glossary/sustainable-transport-system>

02. WHAT NATIONAL ROADS DO FOR PUBLIC TRANSPORT



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Buses and coaches represent a significant part of the Irish public transport system and they are entirely reliant on the road network to deliver their services. The bus and coach network of services is comprised of both commercial operators and contracted subsidised operators. National Roads offer some of these public transport operators direct, efficient and safe transport corridors. These corridors facilitate interurban travel, promote regional connectivity and provide for local connections.

The network of bus and coach services is truly national in its coverage, as is evidenced by **Figure 2.1** which shows the extent of the network. The network of National Roads helps to provide public transport access to urban and rural-based communities that are not be served by rail and have little prospect of being served by rail in the future.

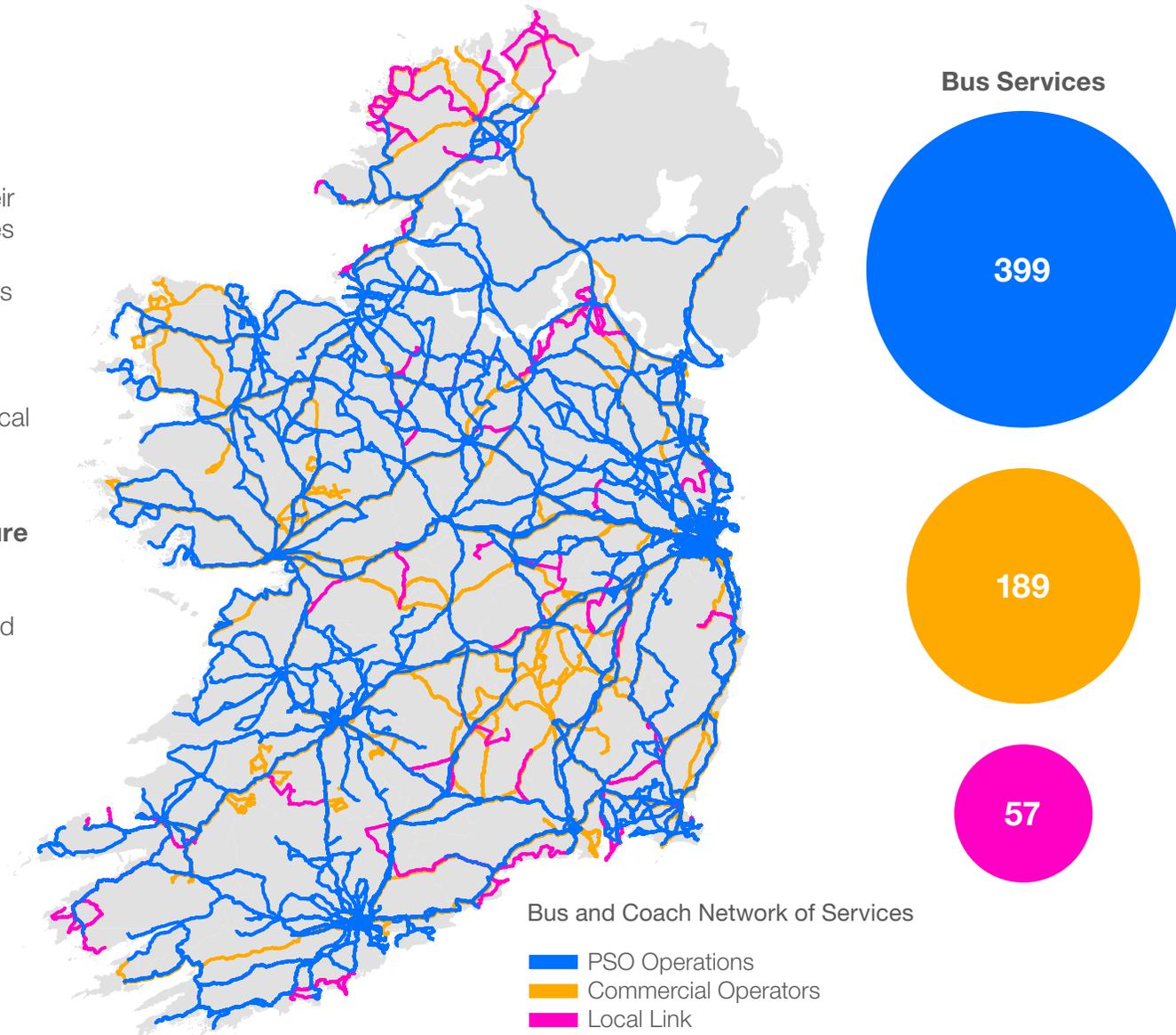


Figure 2.1 Irish Bus and Coach Network of services

Public Transport Demand

In 2017, 278 million public transport passenger trips were made in Ireland². Of these passenger trips, some 195 million, or **70% of all passenger trips, were made on either a bus or coach service**. As such, bus and coach services represent a significant source of public transport capacity in Ireland. While rail-based services such as Irish Rail and Luas do offer reliable and competitive services, they only serve a number of high capacity corridors. Coach and bus operations are considerably more flexible in their operation, allowing them to respond quicker to changing patterns of demand nationally.

This is evidenced by the increasing number of commercial services in the Irish transport market. From 2013 to 2017 the number of passengers traveling on commercial services rose by 28.2%³.

Taxis have not been examined in this analysis, however it is noted that they make extensive use of National Roads in their operations and, for some customers, are an important element of the public transport system.

Bus and coaches on National Roads

There are almost 100,000km of public roads in the Republic of Ireland⁴. This includes the network of National Roads, which is in excess of 5,300km in length⁵. **87% of the road network carrying bus services is National Road**⁶. Figure 2.3 shows where bus and coach services operate on National Roads. Bus and coach services operate on almost all sections of National Roads in Ireland.

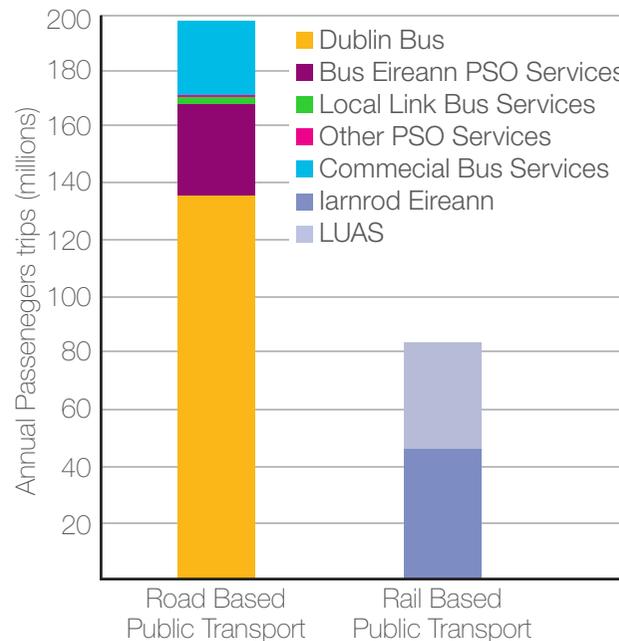
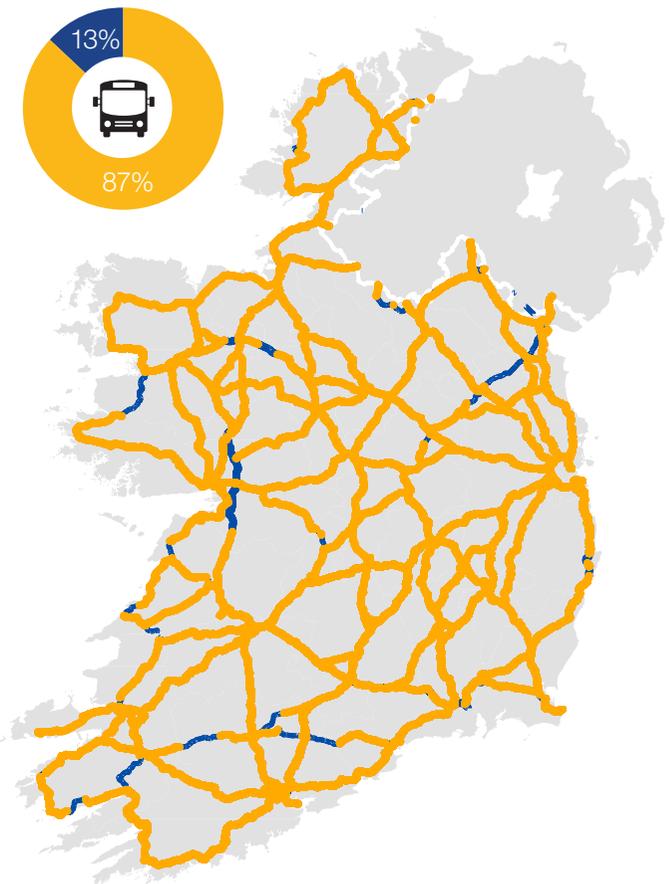


Figure 2.2 Public Transport Trips 2017 (Source: Bus & Rail Statistics for Ireland)

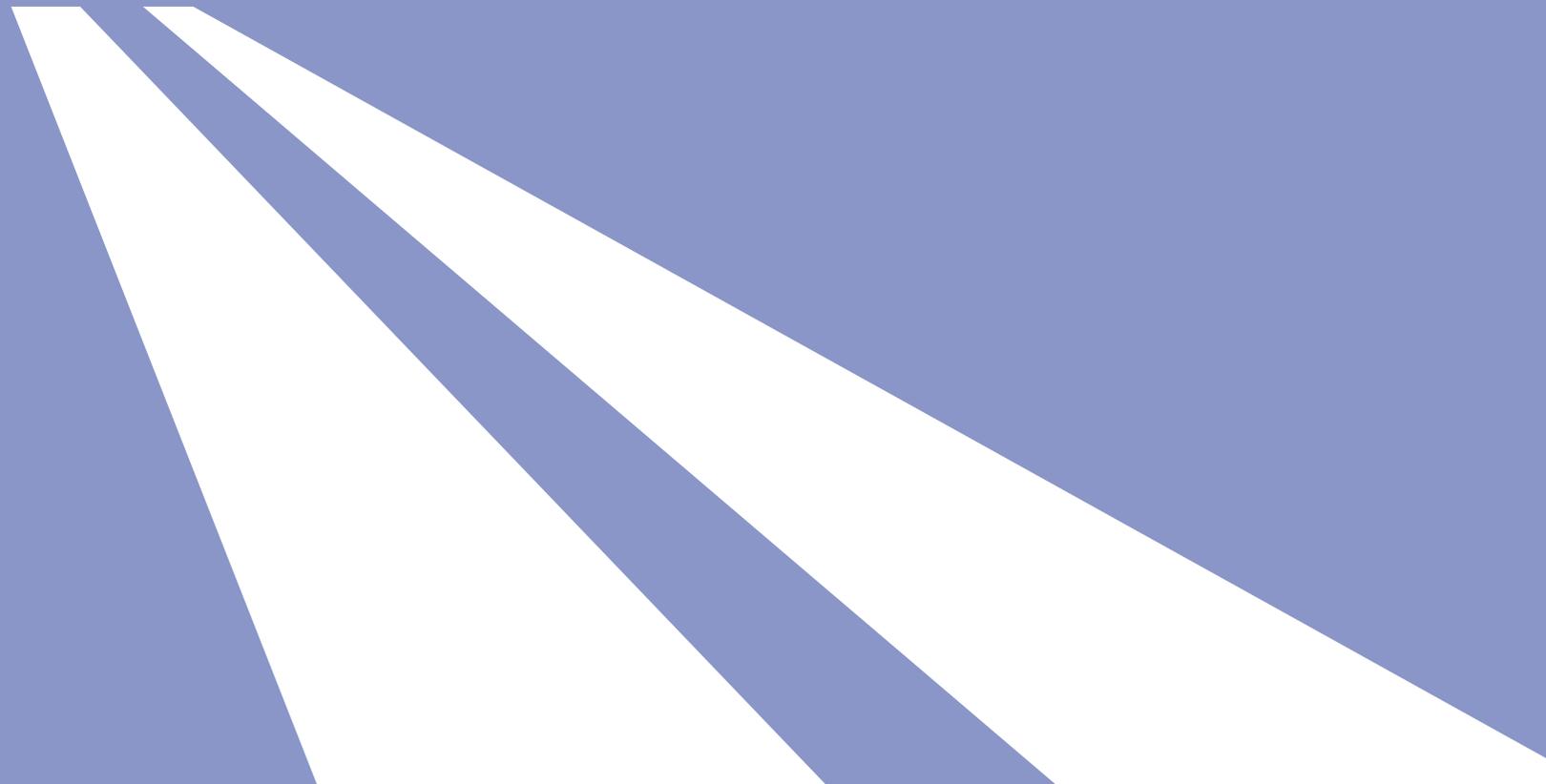


Bus and Coach Services on National Roads
█ Bus and Coach Services on National Roads
█ National Roads with no bus or coach service

Figure 2.3 National Roads with Bus/Coach services

² Source: Bus & Rail Statistics for Ireland - State Funded Services (Table 1A), NTA, March 2019 & Commercial Bus Services in Ireland (Figure 2.2), NTA, April 2019
³ Commercial Bus Services in Ireland (Table 2C), NTA, April 2019
⁴ <https://www.gov.ie/en/policy-information/c49aed-regional-and-local-roads/?referrer=/roads/english/regional-and-local-roads/>
⁵ <https://www.tii.ie/tii-library/strategic-planning/nra-road-network-indicators/TII-National-Roads-Network-Indicators-2018.pdf>
⁶ TII analysis of NTA GTFS Data

03. DIVERSITY OF PUBLIC TRANSPORT SERVICES ON IRISH ROADS



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There are a number of different types of public transport services that operate on the Irish road network; each providing an important service. Below is a brief overview of the types and function of bus and coach services that operate on Irish roads:

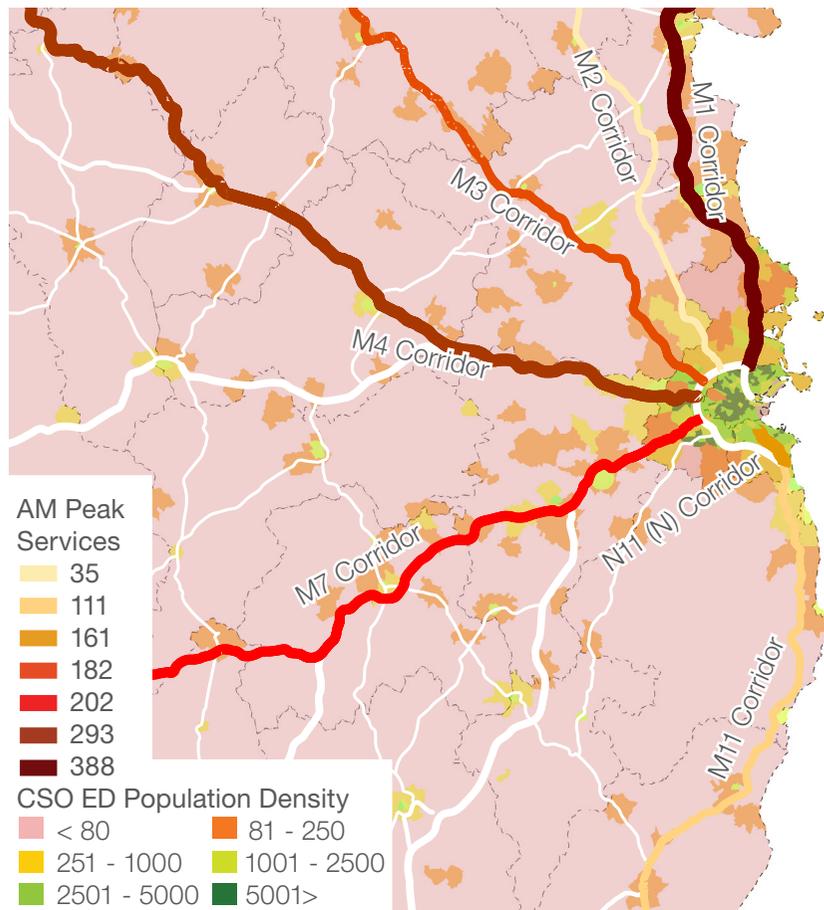


Figure 3.1 Greater Dublin Area inter-city and commuter services by corridor

Commuter and Intercity Services

Commuter and Intercity services are operated by a mixture of Bus Éireann and an increasing number of commercial operators; connecting urban areas to each other and outlying commuter towns to their respective urban areas. These services make excellent use of the motorway network to offer competitive and reliable journey times to passengers, making bus travel an attractive option for intercity and commuting travel.

On some corridors, bus services can offer a comparable or better service than that provided by rail.

This is particularly well evidenced in the Greater Dublin Area where the growth of the motorway network has facilitated a corresponding growth in the number of bus and coach services operating nationally.

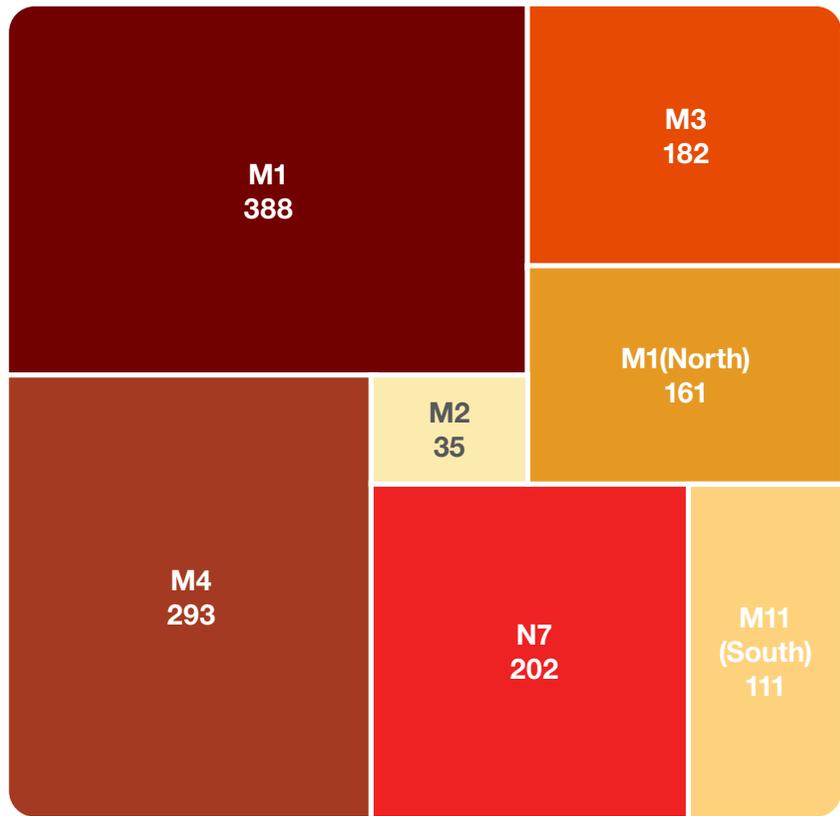
The increase in these operators is most pronounced on the motorways linking Dublin to other Regional Cities. Figure 3.1 shows the motorway corridors in the Dublin Area and the number of operators operating on them. Table 3.1 shows the number of inbound intercity and commuter services on each of the Dublin corridors for a 24-hour period. The motorway corridors linking Dublin to other cities, such as the M1, M7 and M4, have the highest number of services operating on them, while other corridors have substantially less.

Competition within the public transport market has led to an improvement in the quality of services offered to the traveling public, including

- Introduction of new vehicle types and technologies e.g. Wi-Fi;
- Fare competition resulting in better value for money;
- Improved timetables with more departure times providing users with greater flexibility and choice in their travel; and
- Competitive journey times compared to private cars.

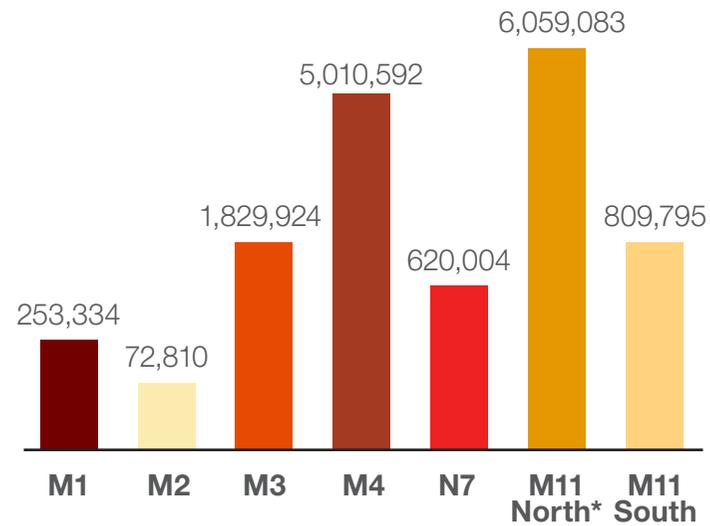
Competition has helped to make public transport a more attractive and reliable option, which has helped to attract new users on to public transport. An example of this is the growth in services serving Dublin Airport offered by a large number of commercial operators. The increase in public transport services on offer has helped to reduce congestion on the road network by encouraging mode transfer to public transport, as well as providing environmental benefits from reduced reliance on private cars.

Figure 3.1 includes Public Service Obligation routes (PSO) and commercial operators showing services inbound along the radial motorway corridors. Following on from this, **Table 3.1** shows the total number of passenger trips observed along these corridors in 2018 on PSO services only i.e. those services operated by Dublin Bus and Bus Éireann.



Total: 1327

Figure 3.2 Number of Inbound commuter and inter-city service by corridor for 24Hr period



*Includes services from N11 South

Table 3.1 Total PSO Passenger Trips by Corridor 2018

School Transport

Alongside a multitude of private coach services and operators, Bus Éireann operates a school transport scheme under the DTTaS School Transport Scheme for primary students, post primary students, and for students with special educational needs. National Roads can also play a role in providing efficient and reliable school bus services throughout the country.

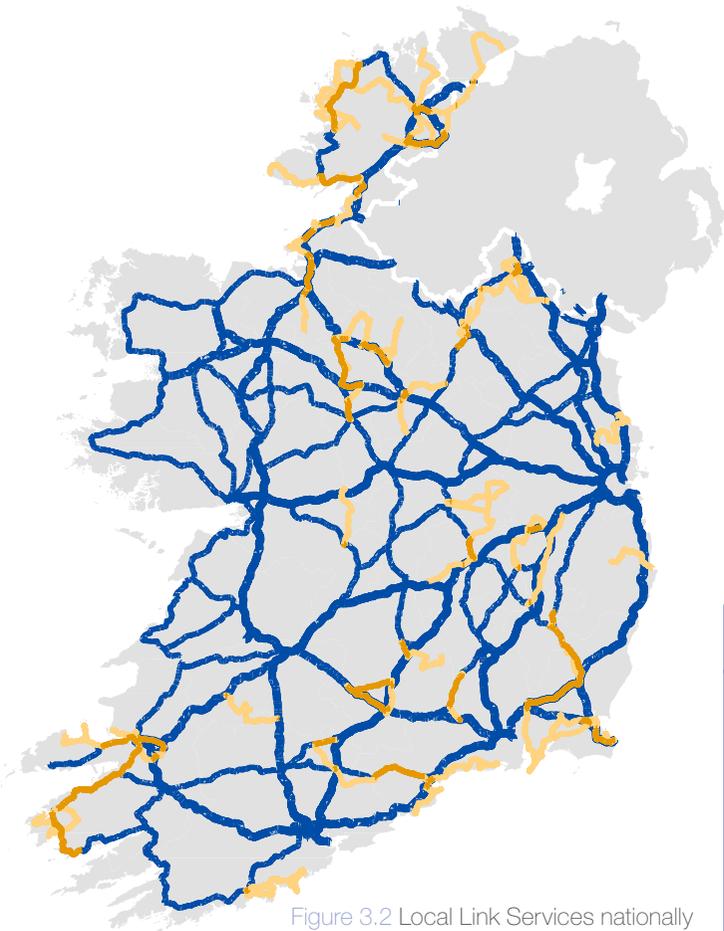


Figure 3.2 Local Link Services nationally

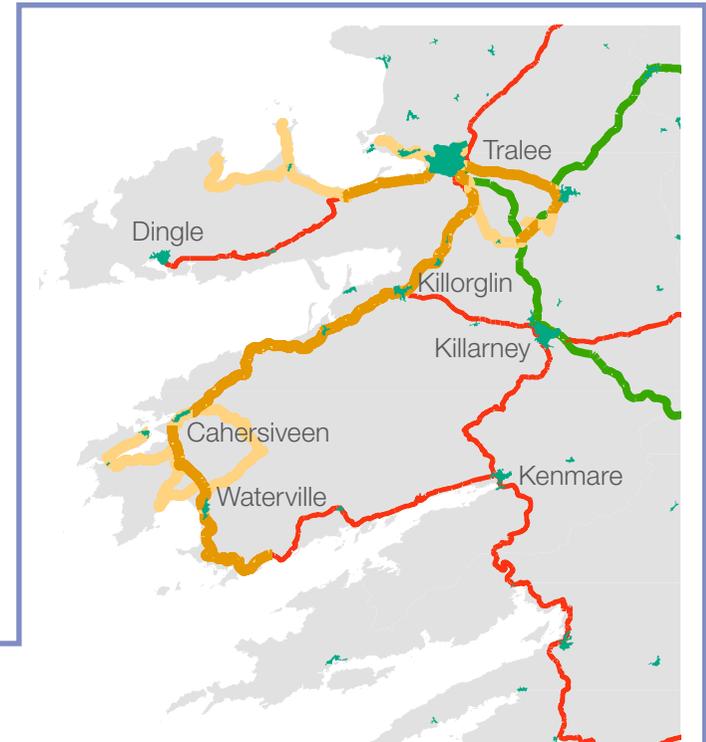
Local Link

Local Link provides local bus services in many parts of rural Ireland, including door-to-door services in some cases. **94% of the road network carrying local-link services is National Road**⁷. An examination of Local Link services in Kerry found that nearly all services operated on National Roads for all or part of their journeys; highlighting the importance of National Roads in delivering public transport services to more remote parts of the country.

CASE STUDY

Kerry Local Link

A considerable number of people in Kerry rely on these services, with 160,500 passenger trips recorded by Kerry Local Link in 2019 . National Secondary Roads provide vital links in accommodating Local Link services and respond to local needs such as daily or weekly services providing access to the local village or town.



Bus and Coach Services on National Roads

- Settlements_Ungeneralised_2016_ITM
- LocalLink on National Roads
- LocalLink not on National Roads

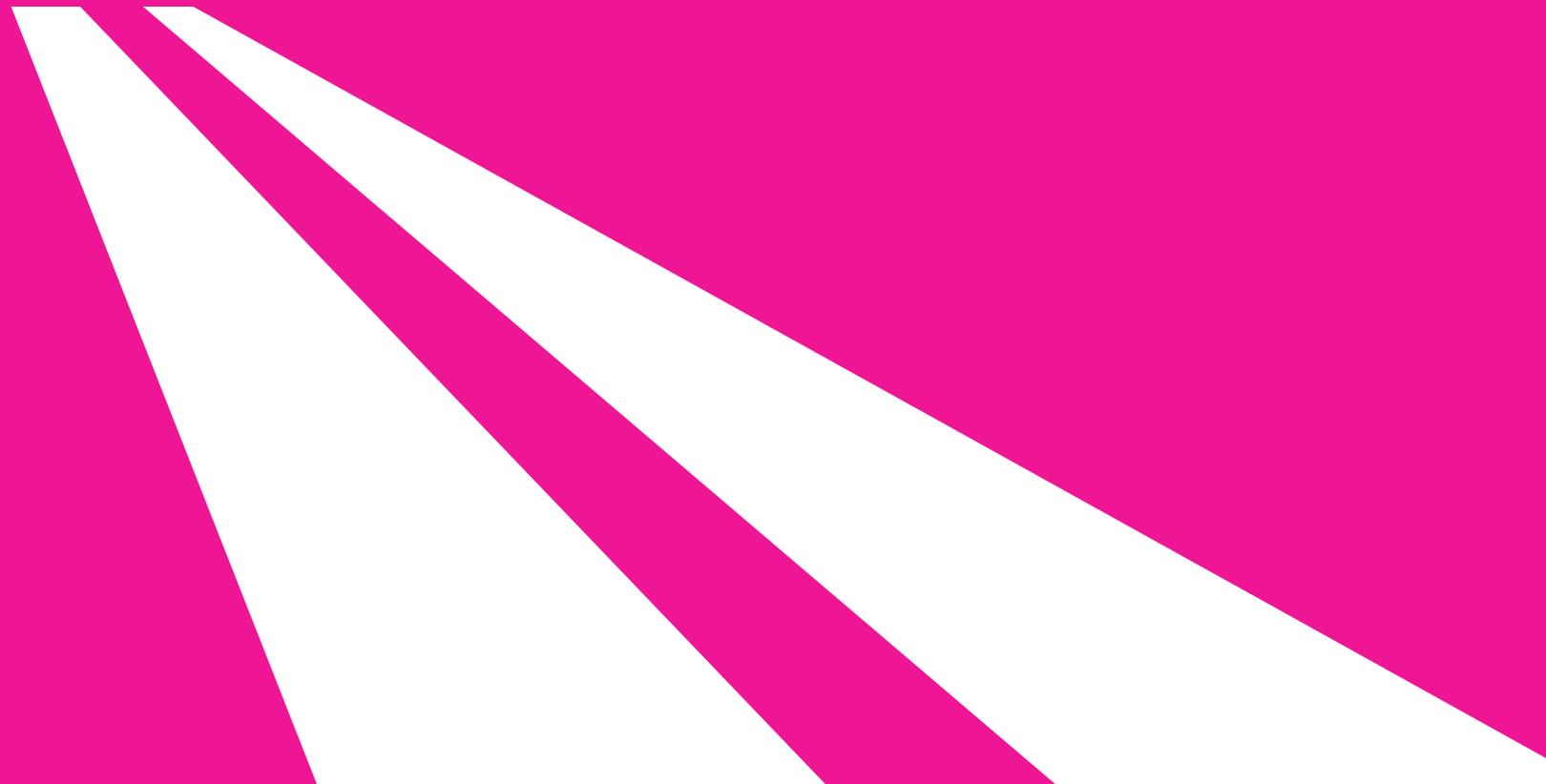
Figure 3.3 Local Link Services Kerry

Bus and Coach Services on National Roads

- LocalLink on National Roads
- LocalLink not on National Roads

⁷ TII analysis of NTA GTFS Data
⁸ <http://www.localinkkerry.ie/>

04. COVERAGE PROVIDED BY NATIONAL ROADS



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The public transport services operated on National Roads offer passengers direct links to many destinations. Public transport services can also be used as feeder services to provide access to higher frequency bus and rail services, as well as public transport interchanges via park and ride. Given their national coverage, National Roads can play a role in changing commuter behaviour by making interchange with sustainable modes a more attractive and accessible option for more users.

Coverage versus Ridership

Figure 4.1 shows bus stops on National Roads with the number of services calling in the AM peak period (07:00 – 10:00) contrasted with Central Statistics office population density mapping at the Electoral District level. Bus stops are predominantly located on National Secondary Roads and, as might be expected, are more heavily concentrated in urban areas. Bus stops in the urban areas receive the highest number of services in this period.

While **Figure 4.1** highlights that National Roads provide access for public transport operators to sparsely populated areas, service levels are generally low, reflecting the lower levels of demand in these areas. Although these public transport links offer limited service levels, they provide connections to areas with higher service levels and to key transport interchanges that facilitate interchange with higher frequency public transport services.

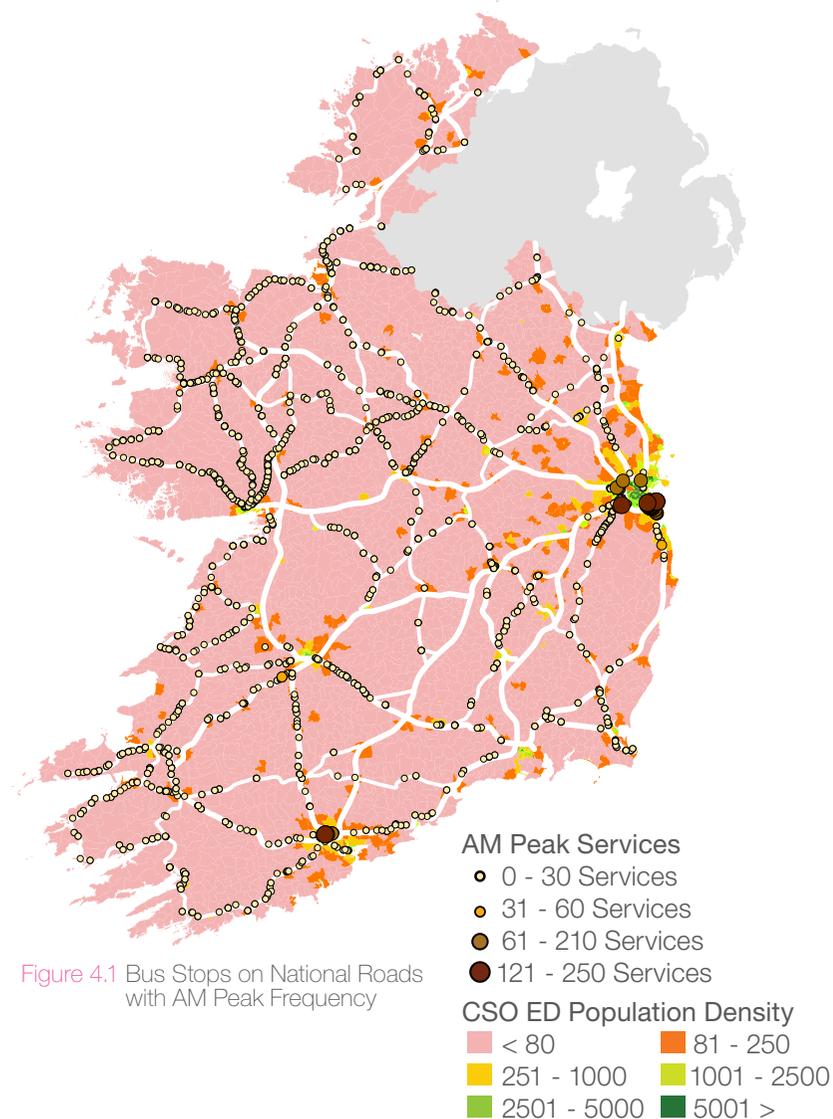


Figure 4.1 Bus Stops on National Roads with AM Peak Frequency

CASE STUDY

National Roads providing rural connections

An example of the role National Roads can play in facilitating connections in rural Ireland is evidenced by GoBus route 430. Route 430 is a commercially-operated public transport service which commenced operations in the summer of 2019. The service, launched by Go Bus, connects Ballina to Galway and uses National Roads over its entire routing. GoBus offers ten departures a day (5 in each direction), which represents a low frequency service when compared with service levels in urban areas. Despite the low frequency, this route is still an important public transport link for people living, working or studying within the catchment of this service.

This recent addition to the network of commercially-operated services highlights how National Roads can influence the bus market to provide new public transport services. National Roads provide direct links helping services like GoBus Route 430 to compete with journey times achieved by private cars. Without National Roads in this area, it would be difficult for a commercial operator to achieve the competitive journey times necessary to encourage a modal shift away from private cars.

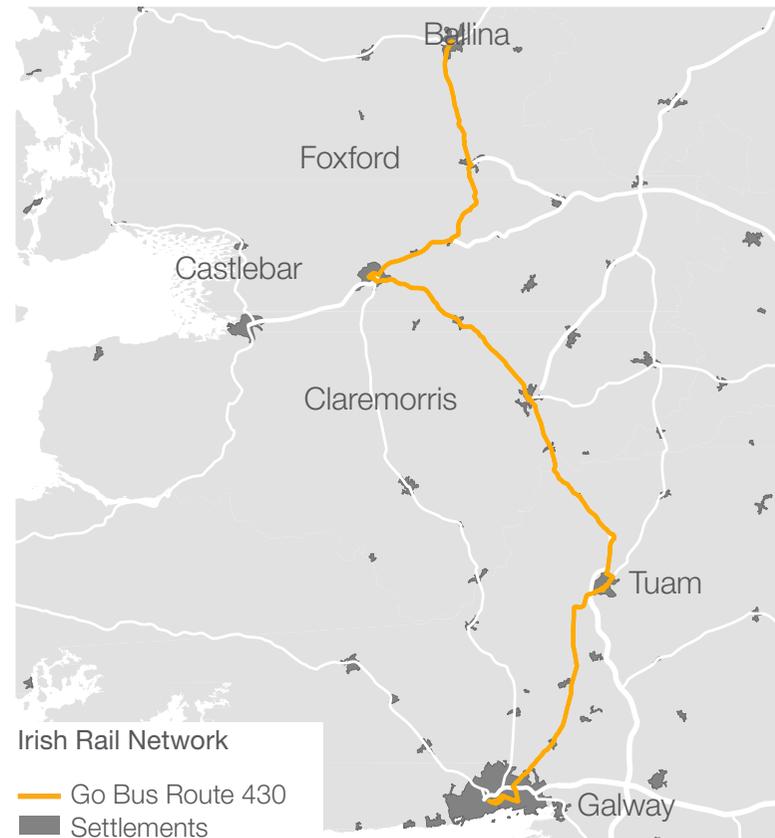
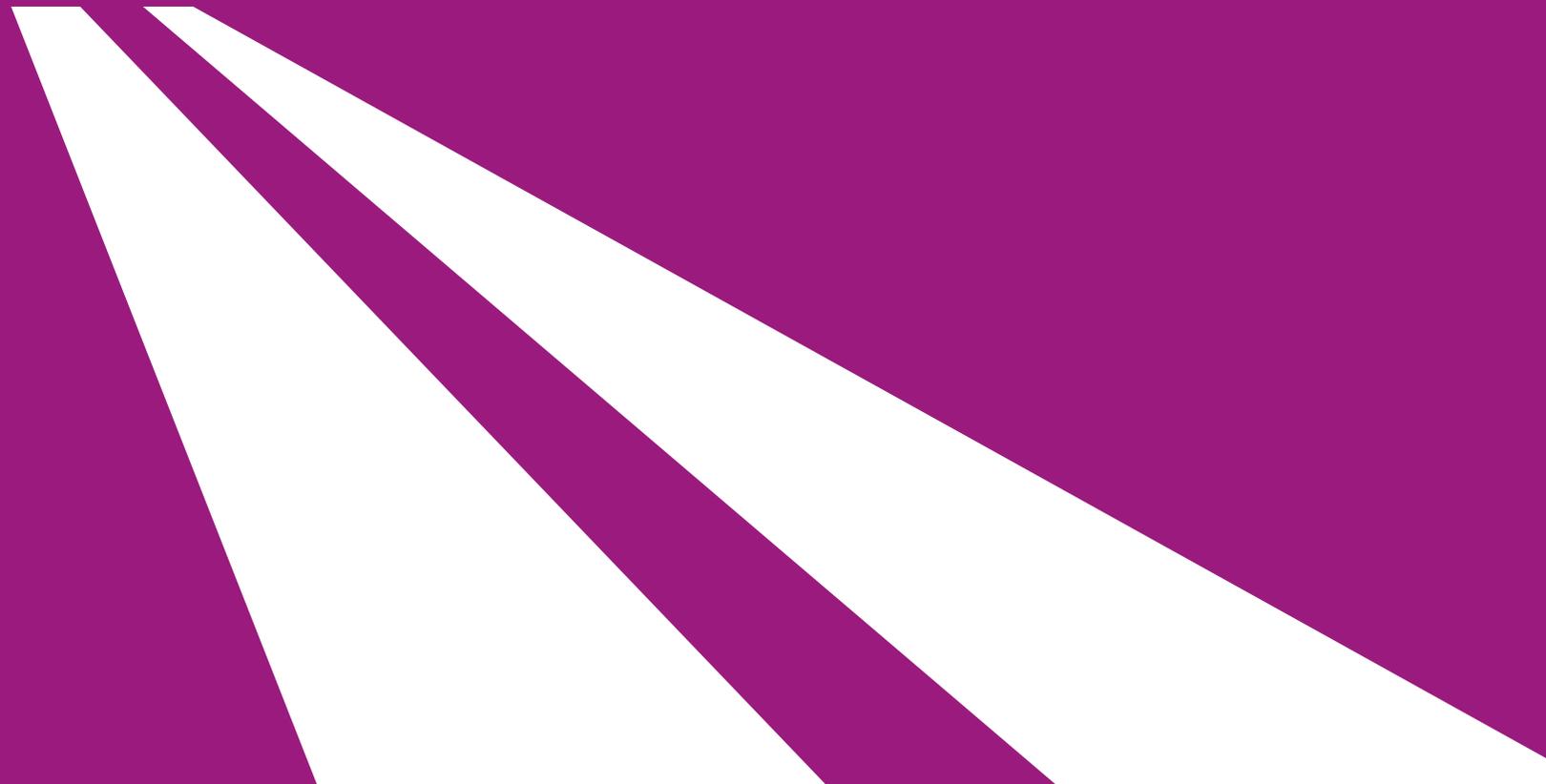


Figure 4.2 Route 430 route map

05. NATIONAL ROADS CAN DO MORE FOR SUSTAINABILITY



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National Roads represent approximately 6% of roads in Ireland by length but cater for around 45% of all trip demand. The proportion of the road network by length operating above capacity is anticipated to increase from 24% at present to 41% by 2040. Where there is high demand for road space, and there are no adverse safety impacts, it may be beneficial to prioritise the movement of higher-capacity vehicles such as buses and coaches on the approaches to cities.

Benefits of Improved Bus Operations

Nationally, bus patronage has increased in recent years from, for instance, 163 million passenger journeys in 2013 to 206 million in 2018. This is an increase in excess of 25%. Bus and coach services operate on National Roads because these are the roads of highest quality providing some of the most direct routes and journey-time reliability. Improvements to National Roads over the years has allowed bus and coach operators to successfully compete with other modes and grow their mode share. Increasing public transport use on our National Roads will have an effect of reducing CO₂ emissions from the transport sector, as set out in the Climate Action Plan 2019. However, efficient bus and coach services are dependent on high-functioning National Roads to meet growing customer requirements.

To ensure that bus and coach operations continue to enjoy passenger growth as they have had in recent years, it is important to facilitate improved operations for them on National Roads. Improving public transport operations on National Roads is a complex issue and it will be important to strike a balance between prioritisation of public transport and providing for less capacity-intensive modes of transport, i.e. private cars. One intervention that could improve public transport operations is the repurposing of hard shoulders on radial routes close to cities.

Some jurisdictions have had success in the repurposing of existing paved sections of radial-route hard-shoulders in the AM peak to act as a bus lane towards the city. Hard-shoulder bus lanes enable existing road space to be repurposed with relatively little expense or hard engineering. One such example is in Northern Ireland, where hard-shoulder bus running has been trialled on the M1 and M2, and was found to be most effective in the AM peak (when traffic primarily converges towards Belfast). However, it is important not to introduce any safety risks through provision of hard shoulder running. Hard shoulders are an important safety feature on high speed motorways where they facilitate emergency stopping of vehicles. Also, if interventions along hard shoulders are implemented on high speed roads, provision of bus stops can introduce new safety risks if bus stops are not segregated at a safe distance from the carriageway.

Hard shoulder running can be, however, a low cost, low impact way of prioritising bus movements on congested low-speed roads, ensuring that journey times remain competitive over other modes. Such interventions also assist in increasing the person capacity of some of the most congested corridors on the National Road network. Reductions in congestion on National Roads have direct benefits on the economy and in meeting environmental emissions targets.

⁹ Commercial Bus Services in Ireland (Figure 2.2), NTA, April 2019

