

New Network Report

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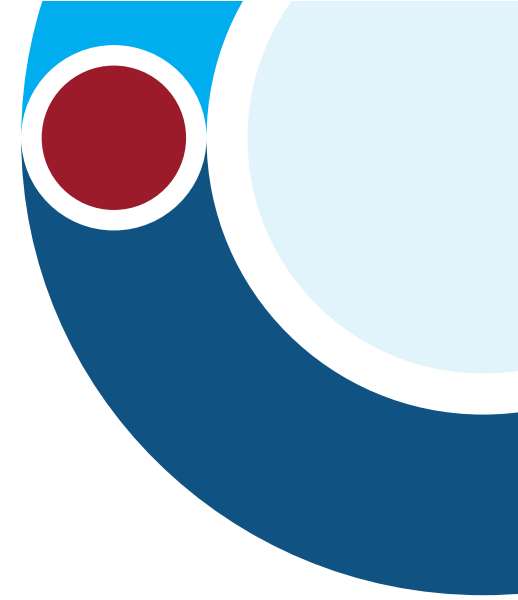
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1 Executive Summary

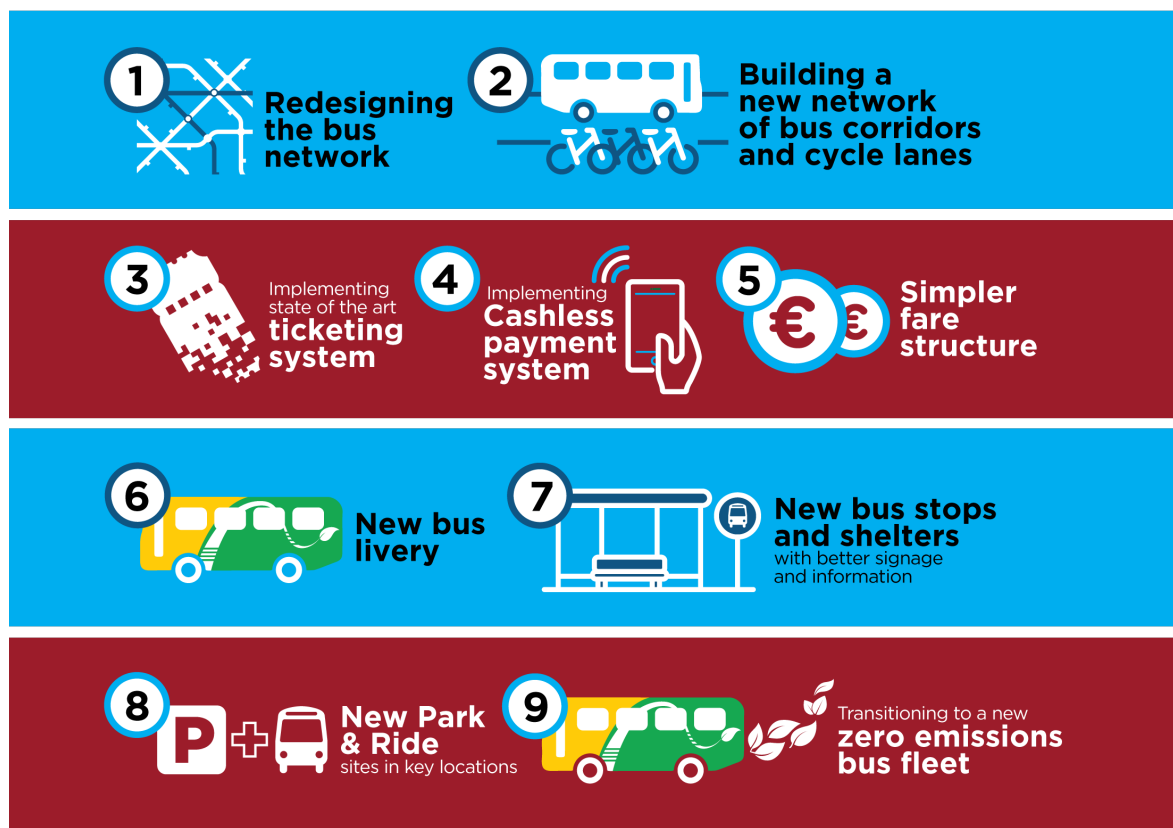
What is BusConnects Galway?

BusConnects is a programme of public transport investment in Ireland's major urban centres. It is developed and managed by the National Transport Authority (NTA), and funded by Project Ireland 2040.

BusConnects includes many elements:

- Redesigning the bus network
- Building new bus corridors and cycle lanes
- Implementing a state of the art ticketing system
- Implementing a cashless payment system
- Simpler fare structure
- New bus livery
- New bus stops and shelters
- New Park & Ride sites in key locations
- Transitioning to a new zero emissions bus fleet

Some of these elements are already underway in Galway. Bus priority corridors through the city centre and along Dublin Road are being planned. Many older buses have been replaced by newer yellow-and-green TFI buses, and new battery-electric buses are being added to the fleet.



Completing BusConnects Galway will help realise these Government policy strategies and local plans:

- National Development Plan 2021-2030
- Climate Action Plan 2023
- Cross-City Link
- BusConnects Dublin Road
- Galway Transport Strategy

- Galway City Council Development Plan
- Galway County Transport & Planning Strategy
- Sustainable Mobility Policy

This bus network redesign and public consultation will also inform the update to the Galway Metropolitan Area Transport Strategy, which began in 2023.

What is the Network Redesign?

The Galway bus network has evolved slowly with the growth of the city. In 2016 the Galway Transport Strategy identified improvements to the urban bus network which were partially implemented in the years since.

In light of the growth coming to Galway and national efforts to reduce carbon emissions from transport, there is an urgent need to re-evaluate and re-invest in bus services in Galway.

This network redesign is one step in that process. It is a collaboration among:

- National Transport Authority
- Galway City Council
- Galway County Council
- City Direct
- Bus Éireann

City Direct and Bus Éireann are the operators of urban bus services in Galway.

The network has been redrawn from a blank slate, rather than adjusted from the current network. There was no assumption that inherited patterns of bus service must be maintained for the sake of tradition or to avoid change.

With that said, many parts of the Galway bus network make good sense today, and have been retained and added-upon in the New Network.

Redesign Process

This report is the result of public engagement on the Draft New Network which was presented by the NTA in 2023. We thank the people of Galway and nearby towns for providing valuable feedback and insights about the Draft Network.

This report includes:

- Key principles and choices in redesigning the bus network.
- Summary of consultation on the Draft New Network and of feedback received.
- The Final New Network plan.

Implementation of route changes consistent with the final New Network plan is expected to begin in 2025, subject to necessary approvals.

Routes Under Review

This network redesign focuses on Galway City, Bearna and Oranmore. It includes the urban and actively-developing areas served by these existing routes:

Route	Operator
401	Bus Éireann
402	Bus Éireann
404	Bus Éireann
405	Bus Éireann
407	Bus Éireann
409	Bus Éireann
410	City Direct
411	City Direct
412	City Direct
414	City Direct
424 ¹	Bus Éireann

¹ Bearna & Galway segment of Route 424 only.

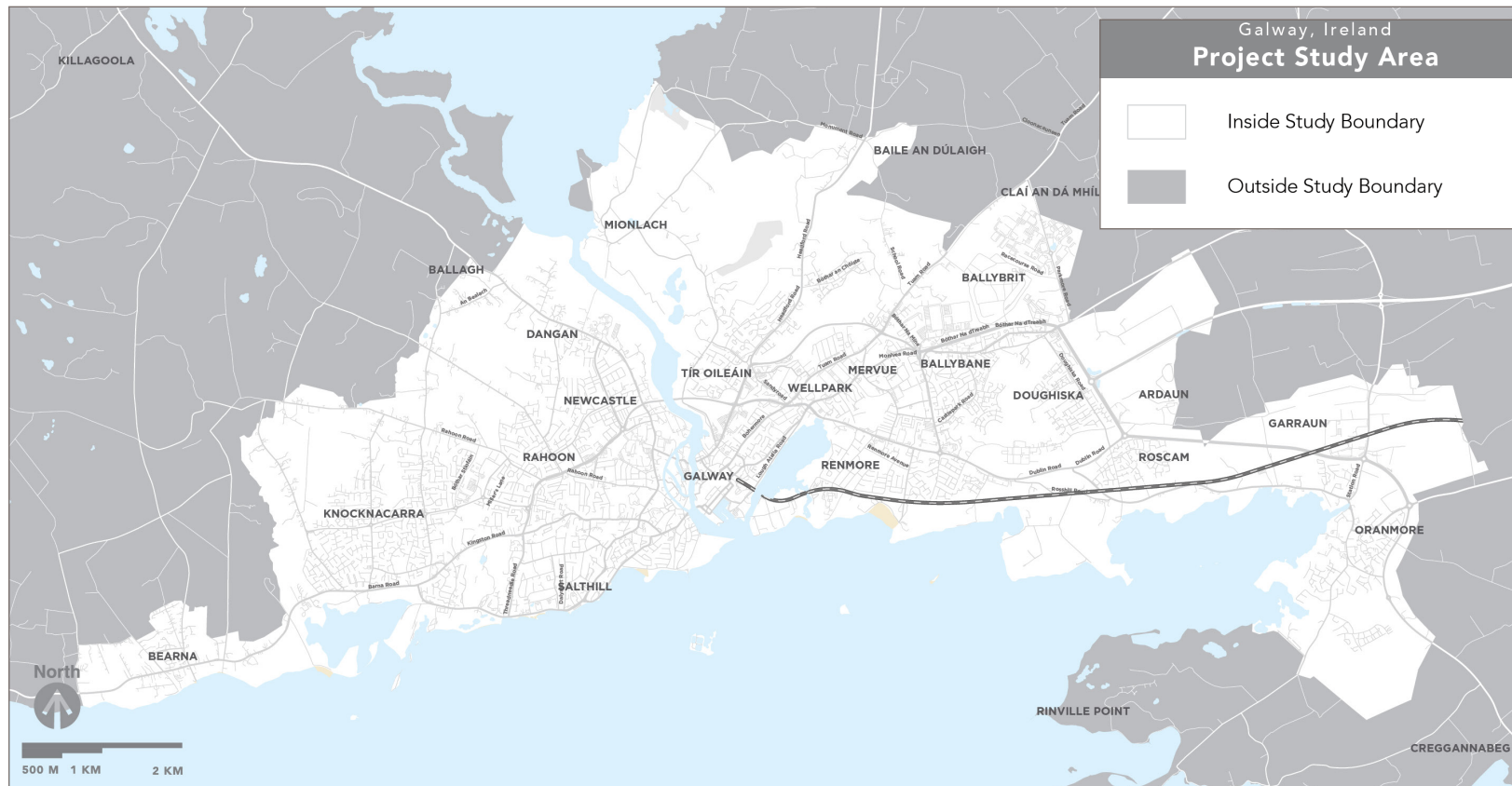
Study Area

The study area for this network redesign covers the urban bus network provided by Bus Éireann and City Direct within Galway City, Bearna and Oranmore.

The study area does not include towns further out such as Claregalway and Moycullen. Bus services in these smaller towns and other areas of County Galway have been reviewed

as part of Connecting Ireland Rural Mobility Plan, a national initiative to improve public transport outside major cities and towns.

The New Network will change which roads buses run on, times and days of service, frequencies, stop locations and how people interchange.



More Service Investment

Added Service

The existing bus network needs to evolve to better support local and national goals for growth, sustainability, and quality of life. **The New Network represents an increase of nearly 50% in the amount of bus service provided in Galway.**

Chapter 3 provides more detail on the service improvements made possible by this increase, such as:

- Three routes will offer frequencies of 15 minutes or better, Monday through Saturday.
- On weekends, many routes will offer improved frequencies and longer hours compared to existing services.
- Service will go later into the evenings, and at better frequencies, on many routes.
- There will be one route offering 24-hour service across the eastern and western sides of the city.
- Additional routes will cover areas of the city where today there is no service.

Patronage vs. Coverage

One of public transport's main goals is high patronage. High patronage generally results when places with many people are connected by frequent, fast and linear service.

But **patronage is not public transport's only goal**. Public transport is also expected to some degree in all urbanised areas, and even where patronage is low. To cover all urbanised areas, buses would need to be divided into many different routes and many kilometres. This results in poorer frequencies.

The two goals of high patronage and wide coverage are in tension. The more service is focused into frequent, all-day routes in the areas where the most people live and work, the less it can be spread out across many routes and kilometres covering all areas.

Some of the routes in the New Network are expected to operate efficiently and attract high patronage. Other routes serve a coverage goal, offering service in areas where patronage will likely be low but the service is important nonetheless.

Why add bus service to meet patronage goals?

- Make service more useful for more people
- Support dense and walkable development
- Improve access to jobs, education and other opportunities for large numbers of people
- Encourage people to switch from car to public transport
- Combat traffic congestion and support economic growth
- Reduce carbon emissions and combat climate change

Why add bus service to meet coverage goals?

- Promote social and economic inclusion, regardless of where people live
- Prevent isolation for people who live in less-populated areas
- Include everyone in the benefits of public transport

How to Read the Network Maps

Colours Show Frequency

In the maps on the next two pages **route colours represent frequency**. Each route is colour-coded based on its frequency on weekdays at midday.

- **Dark red** lines indicate very frequent service, with a bus coming every 10 minutes.
- **Red** lines indicate frequent service, every 15 minutes or better.
- **Purple** lines indicate routes that come every 20 minutes.
- **Dark blue** lines indicate routes that come every 30 minutes.
- **Light blue** lines indicate routes that come every 60 minutes.

New Route Numbers

All of the proposed routes have been given unique numbers, to differentiate them from existing Galway routes.

However, if a proposed route is very similar to an existing route, then it is given a related number. For example:

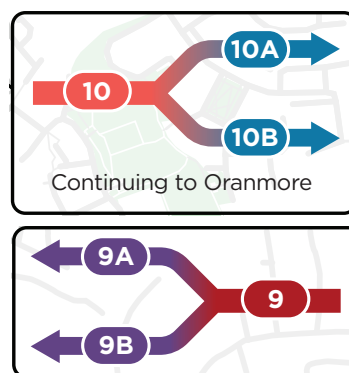
- Proposed Route 1 is similar to existing Route 401.
- Proposed Route 4 is similar to existing Route 404.

- Proposed Route 9 is similar to existing Route 409.

However, the numbers proposed are not final, and may change before the New Network is implemented.

Trunks and Branches

Some routes in the New Network will branch, shown on the maps with these diagrams:



These are not interchanges. The buses on the less frequent “branches” come together to form the more frequent “trunk.”

In the top example, Route 10 on Dublin Road is a combination of Routes 10A and 10B to and from Oranmore. Routes 10A and 10B each offer 30 minute frequency, and where they are together on Dublin Road they are scheduled

such that one or the other of them comes along every 15 minutes.

The same is true of Routes 9A and 9B in the west, which combine to form Route 9 and continue to the city centre and to Parkmore.

Connecting Ireland

On the map on the next page, routes connecting Galway to Carraroe, Clifton, Tuam, Castlebar, Claremorris, Claregalway, Mountbellow, Athlone and Limerick are marked with a “CI” label.

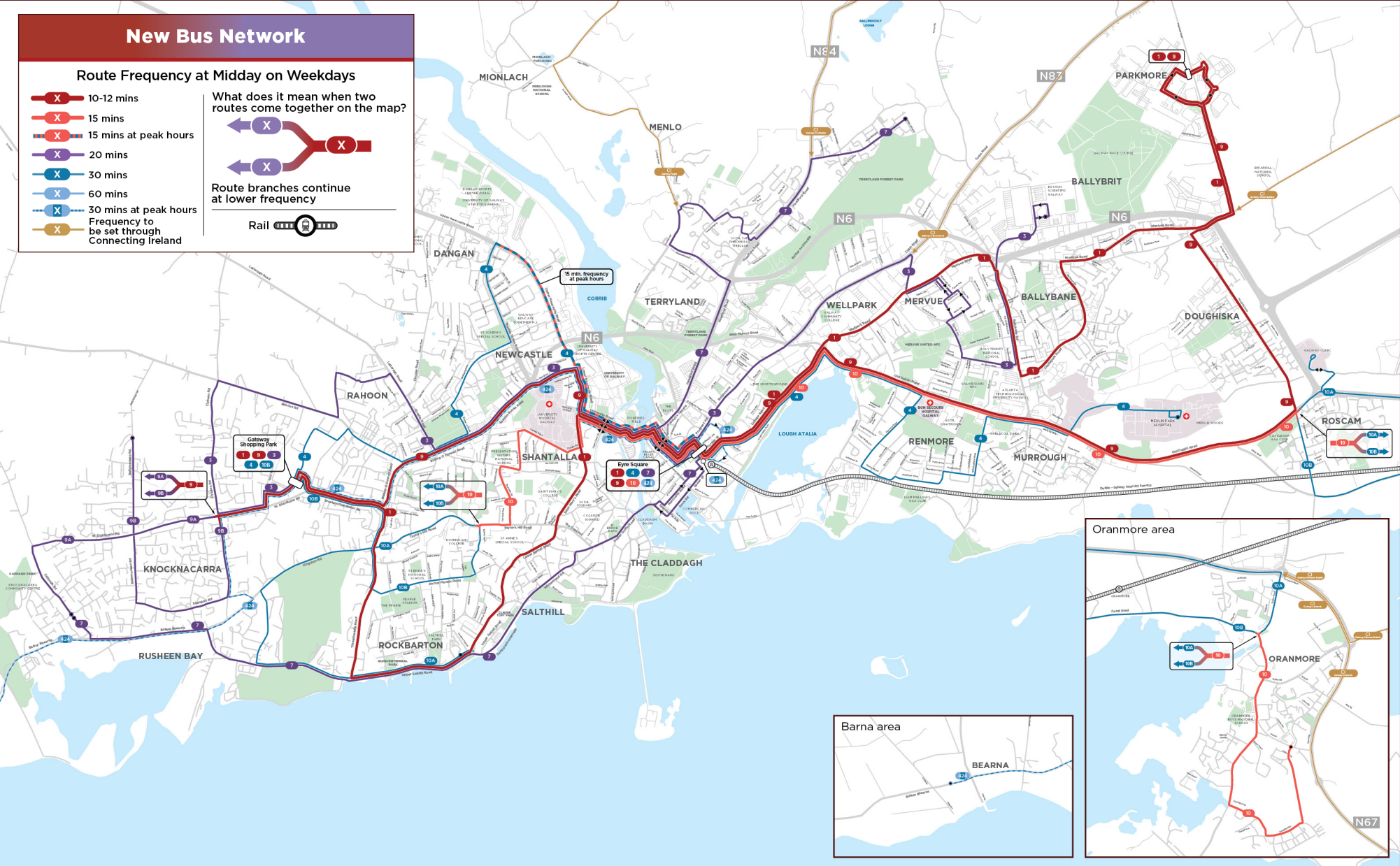
These “CI” routes will be planned in a separate process through Connecting Ireland. The towns they serve, their frequencies and their hours of service will be addressed in that process.

Route Descriptions

Street-by-street descriptions of each proposed route are provided on [page 38](#).

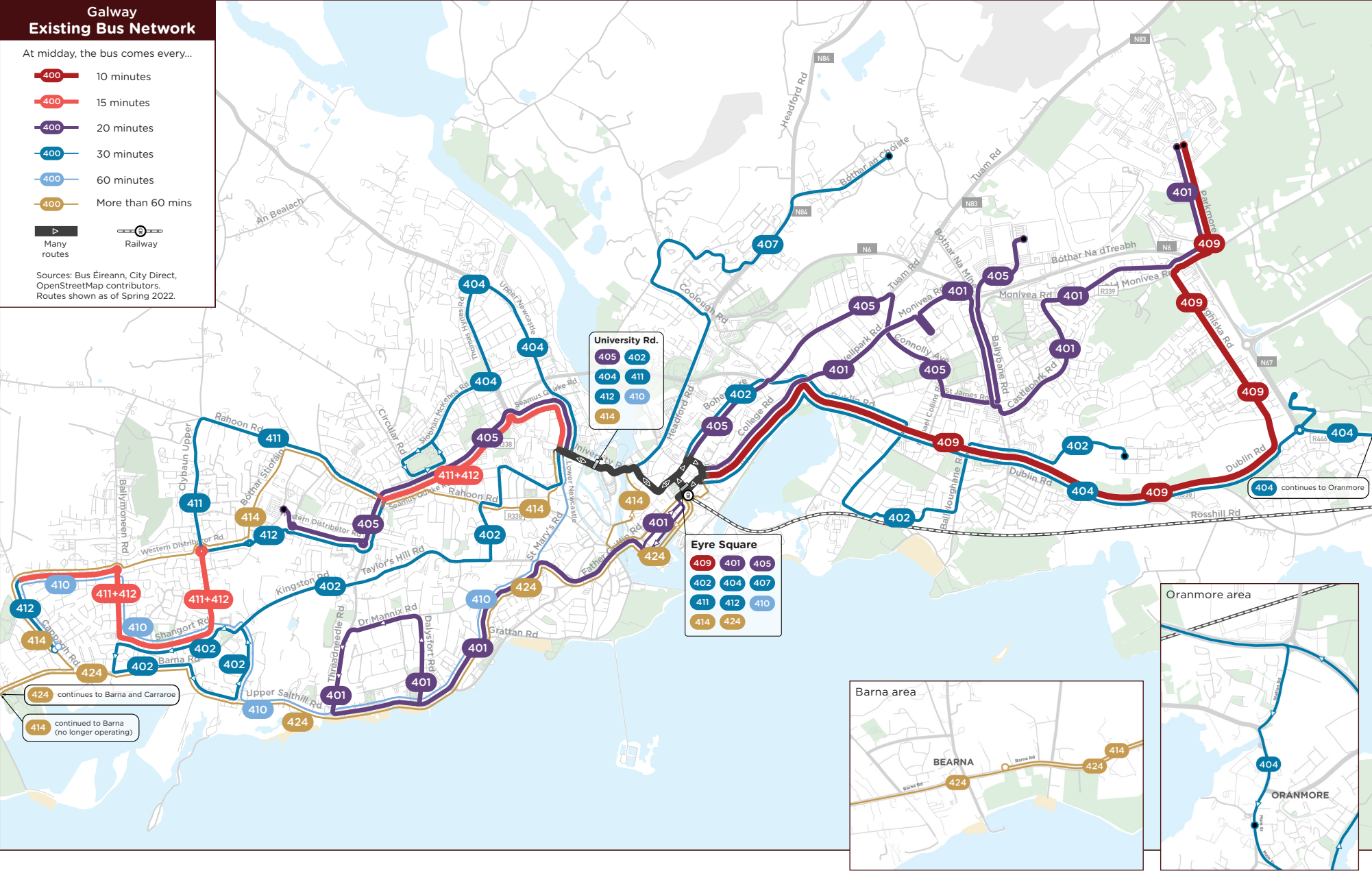
Written descriptions of proposed frequencies and hours of service are given on [page 97](#), whilst a graphical representation of frequencies and hours of service is shown on [page 14](#).

Map of the New Network



For a closer look at the New Network, please use the resources on the [project webpage](#), especially the [online map](#).

Map of the Existing (2022) Network



Service to More Areas

The New Network will provide new service in certain areas which are not served today. They are marked in yellow on the map below, and include:

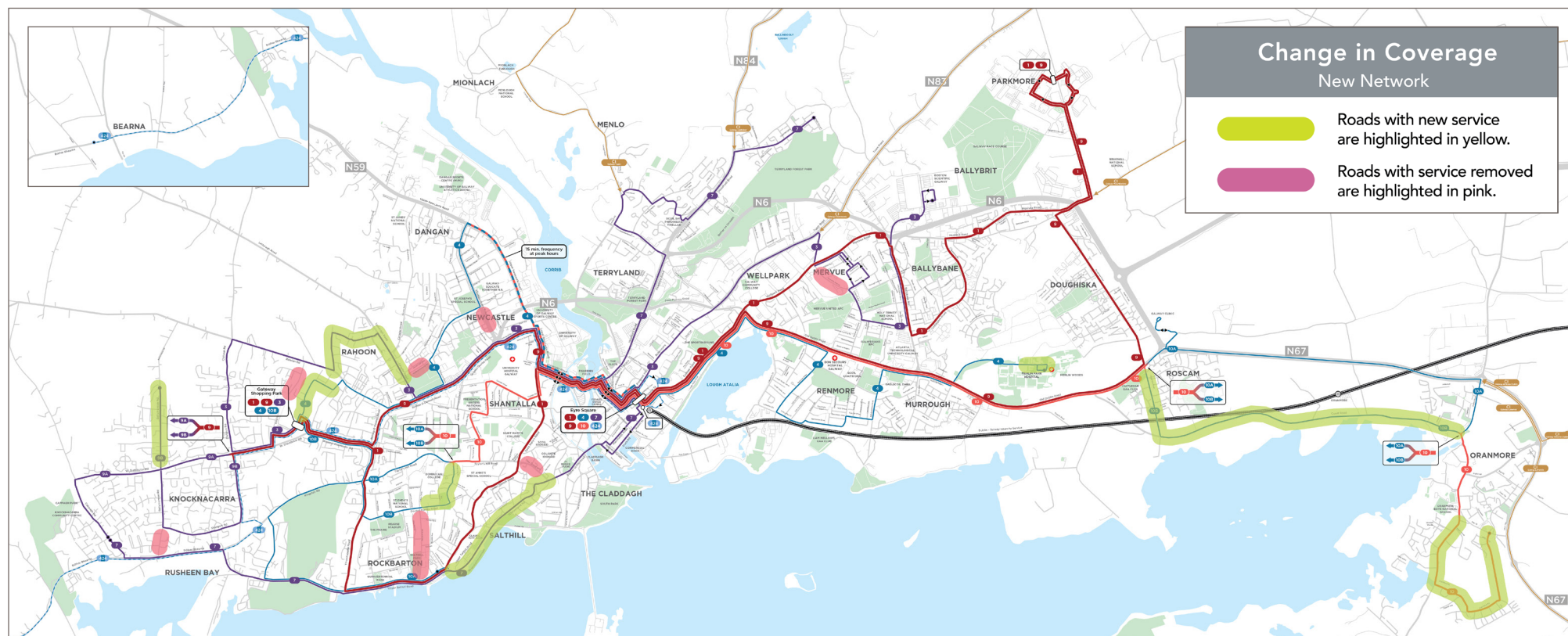
- Upper Ballymoneen Road
- The southerly part of Circular Road
- Roscam
- The Coast Road, between Galway City and Oranmore

- The south edge of Deerpark Industrial Estate
- Station Road in Oranmore
- Oranhill

The New Network will also remove service on a few streets, which are marked in pink on the map below. In these cases, the total number of people affected will be small, and improved service will be provided

within a short walk. Removing these few, small segments has a benefit to a large number of people as it allows bus routes to be more frequent, linear and direct, and the citywide network to be simpler.

Overall, the share of residents within 400 metres of a bus stop (about a five minute walk) with all-day service will increase from 62% to 68%, with a similar increase in the share of jobs



Improved Frequencies

close to service.

In addition to increased coverage, the New Network will provide better frequencies close to more residents and jobs.

As a complement to the map on the previous page, the map below shows where service exists today but the New Network will offer consistently shorter waits for the bus than the

existing network.

- Instead of two routes offering high frequency today (every 15 minutes or better), **three routes will offer high frequency** and each of them will cover many dense areas on both sides of the city.
- As a result, **34% of residents will be within 400m of a frequent route, compared to 19% on the existing network.**

Roads highlighted in yellow have bus service today, but will have a higher frequency in the New Network. (This comparison is based on weekday daytime frequencies. There are additional roads on which weekday frequencies will not change, but evening, Saturday or Sunday frequencies will be improved.)



Longer Hours of Service and a 24-Hour Route

The New Network will lengthen the hours of service on many routes, and will improve frequencies at night or on weekends:

- On **Saturdays 34% of residents will be near a frequent route**, compared to **10% today**.
- On **Sundays 40% of residents will be near a route coming every 20 minutes or better**, compared to **25% today**.

In addition to better frequencies, some routes will offer longer hours of

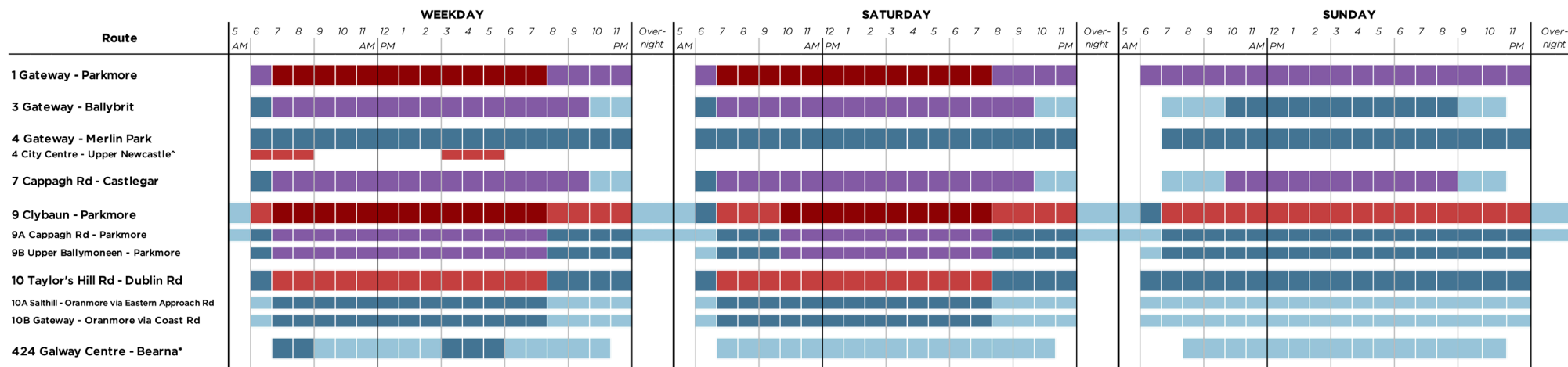
service in the morning and at night. **All city routes will operate until 12:00 am**, Mondays through Saturdays, and Route 424 Bearna will operate until 11:00 pm. Multiple routes will offer **earlier morning service on Saturdays and Sundays**, and **better frequencies into the evenings**.

The New Network includes a **24-hour route** traversing the city. Route 9 will offer overnight service, once per hour, from Knocknacarra in the west to Doughiska and Parkmore in the east. 24-hour service helps people working

or socializing at night make their way home safely, and it serves the commutes of people who start work very early in the mornings.

The graphic below uses colour to describe each route's frequency by time and day. Tables with the same information in text are provided in [Appendix A](#).

Galway Final Network Bus Route Frequencies



Notes

*4 Upper Newcastle is a peak only service that runs from the NUI Galway campus to Galway City Centre.

* This chart only shows the frequency of Route 424 between Ceannt Station and Bearna. Many 424 buses will continue on to Carraroe, Lettermullen, Carna, etc.

More Access to Opportunity

It's impossible to predict exactly how many people will use an improved bus network. The future is inherently unpredictable, as our recent experience with the Covid-19 pandemic demonstrated. Predictive models can be used to general forecasts of public transport patronage. But to make any complex forecast we must make myriad assumptions about the future at least some of which turn out to be wrong.

At the individual level, it is also hard to predict public transport patronage. It is difficult to know how someone will make their travel decisions in the future if there are changes to where they live, where they work, fuel prices, traffic congestion, the quality of public transport service, improvements to cycling and walking facilities, their own ability to drive a car, etc.

In the face of so much uncertainty, we can rely on simpler measures that focus on the near-term consequences of a change, and that require fewer assumptions about the future. One such measure is "access," also sometimes called "accessibility."

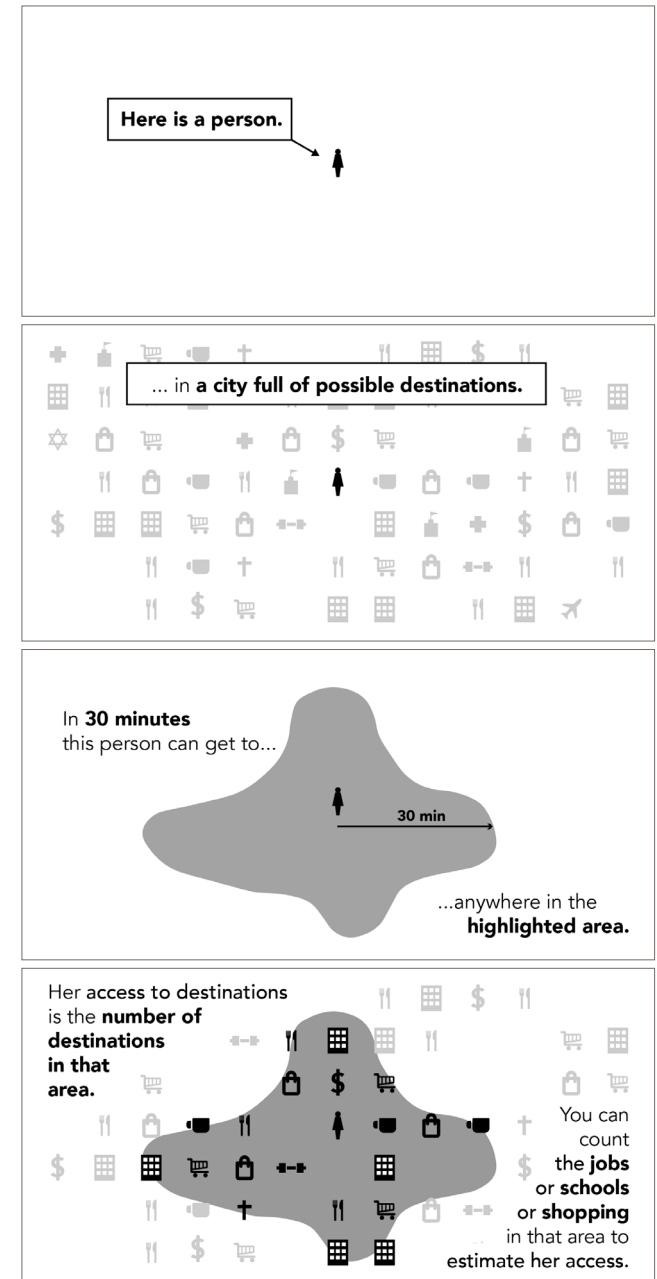
Access measures the usefulness of a public transport network for any

person who has a limited amount of time to spend traveling.

Public transport is useful to the extent that it allows people to go where they want in a reasonable amount of time. **The more destinations you can reach in a reasonable amount of time, the greater your access to opportunity,** as illustrated by the graphics on the right.

When we measure access we use Census data representing the locations of residents, jobs and schools. We then use arithmetic to sum travel times between all residents and jobs or schools. This arithmetic is described on the next page.

Designing cities and their public transport networks so that more people have access to more opportunities, within a reasonable journey time, is a reliable way to increase patronage.



What factors affect access to opportunity?

Access to opportunity via public transport is affected by:


- **How many destinations are near public transport**
- **How long a person has to walk** to and from service
- **How long they have to wait** for the service
- **How far they have to travel** in the public transport vehicle
- The **speed** of the vehicle
- **How long they have to wait to interchange** between services

Public transport operators have control over some of these factors: waiting time, interchange, route directness, where service is provided.

They have less or no control over other factors that affect access: public transport speed, travel distances, or where jobs and housing are located. These factors are generally controlled by local authorities as they manage land use, development and roadways.


Estimating Journey Times

Often when people describe public transport journey time they focus on the time spent on the bus. Public transport journeys also include time spent walking and waiting, which can exceed the time spent on the vehicle itself.



Walking to and from the stop

Most public transport journeys begin and end with a walk.




Waiting for the next bus

Waiting doesn't only happen at the start of your journey, it can also happen at the end. You may leave home shortly before your bus departs, but if your bus comes infrequently you often have to arrive at your destination early to avoid being late.

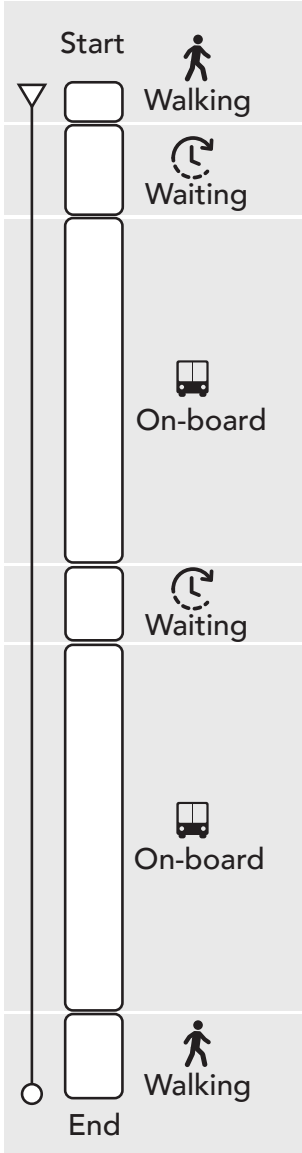
If you're interchanging, you'll have to wait a second time.

On average, across all passengers, the minutes spent waiting will sum to approximately one-half of the frequencies of the routes in question.



On-board the vehicle

Time spent on-board is affected by distance and speed. In summing travel times on the New Network, we used conservative (slow) assumptions. Improvements in speeds will result in greater job access for more people.



The diagram illustrates a vertical timeline of a public transport journey. It starts with a 'Start' point (inverted triangle) and ends with an 'End' point (circle). The journey is divided into seven segments: 1. 'Walking' (person icon), 2. 'Waiting' (clock icon), 3. 'On-board' (bus icon), 4. 'Waiting' (clock icon), 5. 'On-board' (bus icon), and 6. 'Walking' (person icon). The 'On-board' segments are the longest, while the 'Waiting' segments are shorter. The 'Walking' segments are also shorter than the 'On-board' segments.

Increased Access Throughout the City

Access improvements from the New Network have been analysed for:

- Door-to-door journeys of 30 minutes or less, and 45 minutes or less.
- Rush hours and midday.
- Weekdays, Saturdays and Sundays.
- All residents and all jobs.
- Residents without cars; residents of areas with high social deprivation; and young, unemployed and senior residents.

Weekdays

On weekdays, the New Network will improve job access for residents of the study area:

- The average resident could access 46% more jobs within 30 mins. or less, and 16% more within 45 mins.
- 56% of residents will be able to reach more jobs within 30 mins. or less, and the other half of residents will experience no change in job access.
- 87% of residents will have access to more jobs within 45 mins. or less. 12% of residents will experience no change, and only 1% of residents

will lose access to as many jobs within 45 minutes.

The map on the following page shows the change in access to jobs within 30 minutes of travel for all residents of the study area.

The New Network will be beneficial specifically for **residents in areas of social deprivation**:

- Residents in disadvantaged areas will have access to 59% more jobs within 30 mins. on weekdays, 72% more on Saturdays, and 46% more on Sundays.
- The number of disadvantaged residents who might lose access to jobs is in fact too small to pinpoint.

Weekends

Access will be improved on **Saturdays and Sundays** as well:

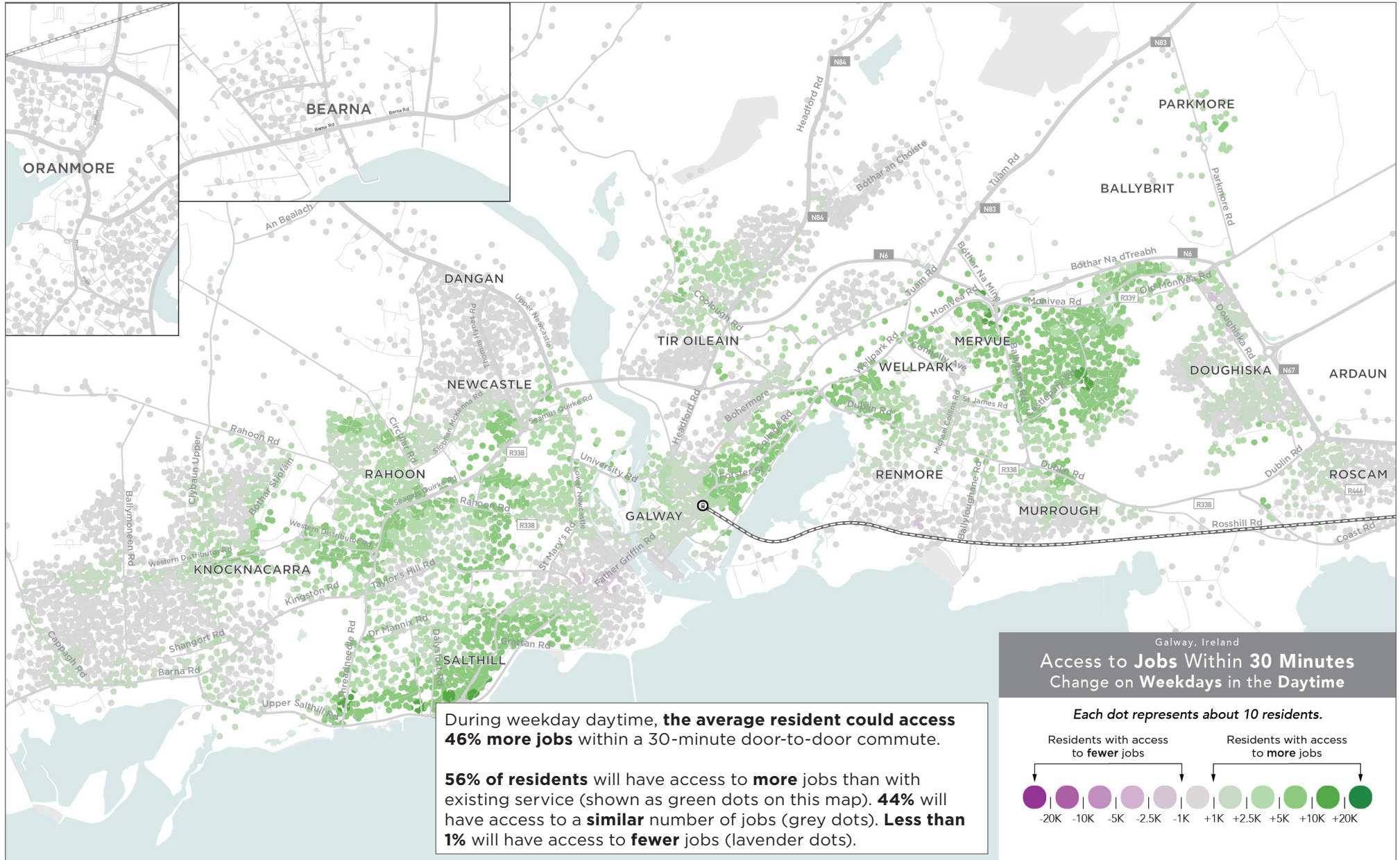
- The average resident will have access to 49% more jobs within 30 mins., and 16% more jobs within 45 mins., on Saturdays.
- On Sundays, the average resident could reach 54% more jobs within 30 mins. and 30% more within 45 mins.

Maps showing changes in access on Saturdays and Sundays are in the section beginning on [page 79](#).

Maps showing changes in access within 30 or 45 minutes of travel, from any location in the city, can also be made using the interactive webmap linked from the [project webpage](#).

Many places people visit (such as shopping, schools, restaurants, medical services) are also places of work, so access to a greater number of jobs goes along with access to important destinations.

Change in Residents' Access to Jobs on Weekdays



Fast, Reliable Service with Cross-City Link

The New Network is designed to take advantage of the planned Cross-City Link.

The Cross-City Link scheme is an integral element of BusConnects Galway and the Galway Transport Strategy. The aim of the scheme is to deliver efficient, safe, and integrated sustainable transport movement on a key east-west corridor in Galway City. This will be accomplished with improved walking, cycling and bus infrastructure, including bus priority lanes and other measures that improve bus performance.

Today bus journeys across the City Centre can be very slow, as buses are delayed by congestion and at junctions. In the 2022 analysis of the scheme, it was estimated that the Link would save buses between 7 and 12 minutes on average when crossing the City Centre per direction.

Today there is frustrating variability in bus journey times across the city. Cross-City Link will reduce that variability, so that the journey time will be reliably fast all day long.

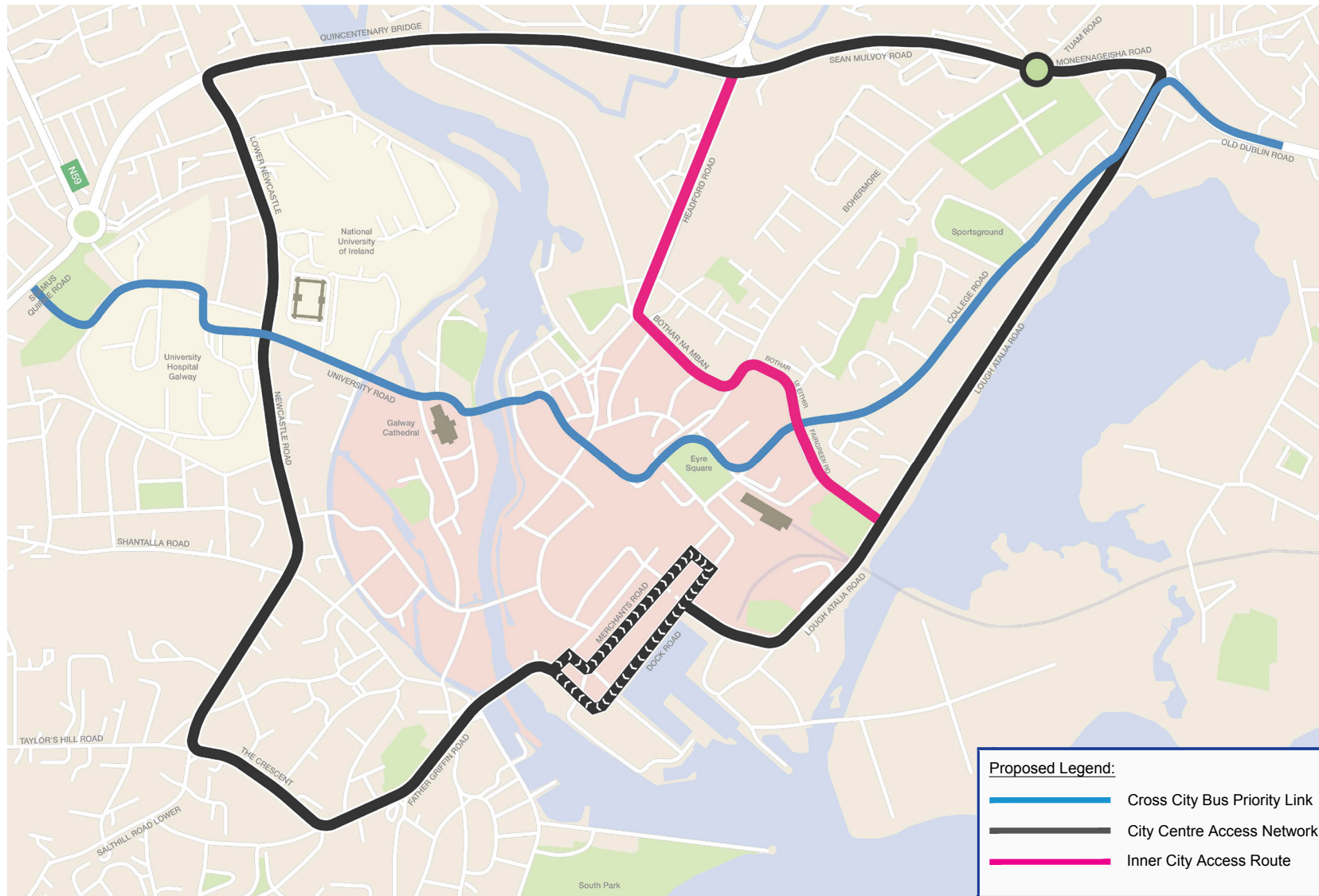
A planning consent application for the scheme is currently before An Bord Pleanála, and a decision is expected

in 2024. Once consent is given for the scheme, then construction can begin immediately and can be completed in 2025.

The map on the next page shows the “Bus Priority Link” in blue, along University Road, the Salmon Weir Bridge, Eglinton Street, Eyre Square, Forster Street, and College Road. Nearly all of the proposed routes in the New Network will use the Bus Priority Link between Newcastle Road in the west and Dublin Road in the east.

Two proposed routes will use only portions of the Bus Priority Link in the City Centre. These two routes will serve areas which are far from the Bus Priority Link, ensuring that all dense areas of the city centre are within a reasonable walking distance of public transport, and that public transport journeys are direct and linear. These routes are explained in greater detail starting on [page 34](#).

Map of Cross-City Link Bus Priority



This map describes the Bus Priority Link, in blue, as proposed in the 2021 Cross-City Link public consultation. Other elements of the scheme shown on this map will be reviewed and may change as part of the update to the Galway Metropolitan Area Transport Strategy, which is currently underway.

Changes in Response to Feedback

Chapter 4 of this report summarises the public feedback gathered through multiple channels in Spring 2023.

Changes were made to the New Network in response to feedback, which are described in Chapter 4. The largest changes made between the Draft and Final New Networks are summarised here.

Route 3 will deviate to serve the existing bus stop in front of the **Mervue Shopping Centre** in both directions.

Additional frequency is added to **Route 4** during weekday peaks. **Route 4** will extend farther east into **Merlin Hospital**.

Route 7 is revised to **serve Upper Salthill Road**, between Kingston Rad and Knocknacarra Road.

Route 9A will make a small one-way loop in **Parkmore**, with a terminus midway through the loop.

Route 10A is revised to serve **Knocknacarra Road and Kingston Road**, between Taylor's Hill Road and Salthill.

Route 10 in Oranmore will extend to the Lidl on Main Street.

Route 10B will stop near the south entrance of **Oranmore Business Park**.

Route 424 will make at least one stop on **Bearna Road** to enable interchange with Route 7.

How to Learn About the New Network

In this Report

This Report is one source of information about the New Network. Within this Report you will find:

- The principles used in bus network design, starting on [page 24](#).
- An overview of the Draft New Network consultation process and the feedback received, starting on [page 39](#).
- A description of the Final New Network, starting on [page 31](#).
- Analysis of how residents' access to jobs and to various frequencies of service, will change with the New Network, starting on [page 72](#).

Online Map

To explore what the New Network will mean for your area and for your journeys, you can refer to the online webmap available at the [project webpage](#).

The online map allows you to:

- Zoom in and see detailed routing.
- Look at areas that are difficult to show on these small pages.
- See how average access to jobs or residents will change from your area.
- Create your own access map comparing how far you will be able to travel using the existing network or the New Network.

All routes in the New Network have new numbers!

Learn more at the BusConnects Galway Network Redesign [webpage](#)

Implementation of the New Network

The NTA plans to commence implementation of the New Network between 2025 and 2026.

As the network is implemented and the new routes are put in place, there may be slight modifications made to ensure efficient service delivery.

The NTA and Bus Éireann will monitor the performance of the New Network and make adjustments as necessary.

In the future, subject to demand and funding, some services may be enhanced with greater frequencies and spans than presented in this report.

Ancillary Issues Report

Numerous issues related but ancillary to the design of the New Network

These issues relate to bus stop amenities, bus stop placement, footpaths, street crossings, signals needed at junctions, space needed to layover buses at route termini, bus driver rest facilities, and more arose during this planning process.

Some of these issues were raised by people who provided feedback on the Draft New Network, and others were flagged by members of the planning

team, Galway City Council, Galway County Council, Bus Éireann, or City Direct.

A separate Ancillary Issues Report will be published which details these issues and describes how they relate to implementation of the New Network. Addressing these ancillary issues will involve collaboration among NTA, the local Councils, Bus Éireann, universities, and major employers.



2 Route & Network Design Principles

What Makes a Useful Network?

Access to opportunity, described on the previous pages, is the way that public transport network design can affect **patronage**.

There are many factors that affect patronage which have nothing to do with access or bus network design, such as:

- Overall travel demand
- Public transport fares
- Road tolls
- Fuel prices
- Car ownership rates
- Car park availability

In this report, we focus on factors that the NTA and its local partners in Galway **can** influence. For example:

- **Where** routes go
- Their **frequency** and **hours of service**
- The **connections** among public transport services, and the ease of interchange
- **Land use** and **development patterns**
- **Demographics**, and where people with particular needs are located
- **Street design** and **walkability**

The first three factors on this list have to do with the design of bus routes and of the integrated public transport network. These are the factors proposed to change in the New Network in ways that will make the network more useful for more people.

The latter three factors on this list - land use, demographics and street design - have a heavy influence on the cost and usefulness of public transport. They are primarily controlled by City and County Councils. They cannot be immediately changed through BusConnects, but they can be adapted over the long-term to make public transport more useful and more efficient in Galway. That adaptation will be key to maximizing the benefits of BusConnects.

Free Interchange

In support of BusConnects and this network redesign, a new fare structure will soon be introduced in Galway which reduces barriers and penalties for interchange.

Interchange between urban bus routes will be free. Interchange between rail and bus will not come with an extra charge as fares will be

based on distance travelled rather than the number of vehicles or public transport modes used.

Free interchange allows us to design a network that maximises people's access to opportunity and minimises travel times, without the preoccupation of avoiding interchanges. In some cases, in Galway, the fastest trip between two points can be provided for with two frequent and direct bus routes.

A well-connected network is key to high patronage. Routes must connect with one another so that people can reach many different places across the city.

Frequency

One of the most powerful ways to increase access across a network is to shorten waiting times by improving frequency.

More frequent service:

- Reduces waiting time (and thus overall travel time).
- Lets you travel whenever you want.
- Improves reliability, because if you miss your bus or it breaks down, another one is coming soon.
- Makes interchange (between two frequent services) fast and reliable.

When frequency improves in places with large numbers of residents, jobs and other opportunities, that improves access for many people.

Better frequency increases the potential for high patronage, though it isn't enough by itself to cause high patronage.

A high-patronage network is more useful for more people. And most people are in a hurry.

How Frequent is Frequent Enough?

In smaller cities like Galway, peoples' trips tend to be short. Public transport must be very frequent for short trips, since waiting time can dwarf journey time on the bus.

To think about whether any frequency is "frequent enough," imagine waiting one-half of the frequency (since on average, you will) and ask yourself whether you could tolerate waiting that long as part of an everyday trip.

One can imagine that with real-time arrival information available on people's phones, frequency doesn't matter. If a bus only comes once an hour, then perhaps that's OK, because your phone will tell you when the bus is a few minutes' away, and you can walk to the stop then.

However, despite real-time arrival information, frequency still matters enormously. This is because:

- Waiting doesn't just happen at the start of your journey, it also happens at the end. You might not spend time waiting at the stop, but if your bus is infrequent you often

have to choose between arriving too early or too late.

- For example, if you start work at 8:00 am but the bus passes your workplace only at 7:10 and 8:10 am, you have a choice between being 50 minutes early or 10 minutes late.
- You can't always plan the start time of a return journey. You may be able to time your departure from home to the bus timetable, but you can't always control when you finish work, when you leave a show, or when a doctor's appointment ends.

The shorter the trip, the less people tend to tolerate a long wait.

Distance, Cost and Frequency

Within a limited public transport budget, longer routes trade-off against higher frequencies.

This doesn't mean that a high frequency network is all short routes. But it does mean that as a system expands to serve new areas, maintaining high frequency would require investing in more vehicles and paying more drivers.

Alternatively, lengthening routes to serve new areas can be accomplished without new funding, but only by cutting frequencies to cover the increased cost of the distance.

Speed, Cost and Frequency

Slower speeds have the same effect as longer distances. If the same route takes twice as long to drive now as it did ten years ago, the transport provider needs twice as many buses and drivers to maintain the same frequency.

As public transport slows down, the cost of operating it increases. A public



This bus can provide 30-minute frequency over this distance, by going back and forth twice in an hour.



But over double the distance, the bus can only provide 60-minute frequency, because it can only go back and forth once per hour instead of twice.

This is a simplified demonstration of the math of route frequency: **As routes get longer**, a public transport authority must either **spend more** to add buses and drivers to the route or **cut frequencies**.

transport provider can either reduce frequencies or come up with additional funding – funding which could otherwise have been used to *improve* service rather than run slower service at a higher cost.

Bus Priority

The link between speeds and operating costs is why **bus priority** is so essential to public transport success in a growing city like Galway.

This is the basis for Cross-City Link and other BusConnects bus priority measures, which will not only speed passenger journeys but also ensure

that public transport can operate efficiently and that Galwegians get the most out of the national investment in Galway bus service.

When congestion slows down public transport, it becomes more costly to operate. This consumes funding that could otherwise be spent to make the service better.

Radial vs. Orbital Services

A public transport network should be greater than the sum of its routes. One route can take people only so many places – but if that route makes connections with many other lines, vastly more places become reachable.

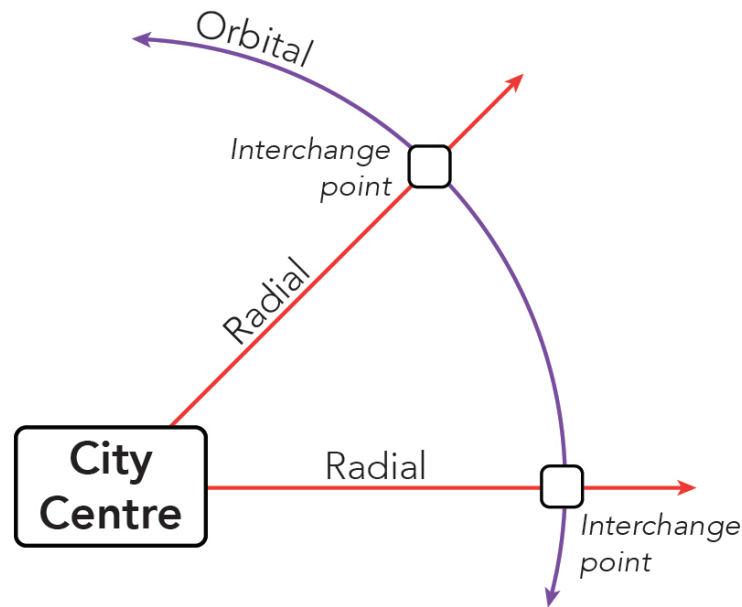
The Galway public transport network is highly **radial**: all lines connect in the city centre. This reflects the shape of the city: all major surface roads lead to the city centre, which comprises the highest concentration of activity, and these radial roads are also very busy and lined with dense housing, shops and offices.

In a purely-radial network, every route connects with every other route at the centre; only one interchange is needed to reach every point in the system.

But as Galway has grown, more journeys take place between outlying locations, and travelling through the centre can feel like a hassle.

Orbital routes might solve this problem, by allowing for cross-city travel without going through the centre.

However, the small size of Galway and concentration of demand both along radial roads and in the city



centre mean that larger numbers of journeys are speeded-up by focusing investment on frequent radial routes. Within the available funding, adding more orbital routes would mean less frequent service overall, which would lengthen journeys made by great numbers of people.

Cross-City Link and other BusConnects priority measures will allow for faster journeys through the city centre. This will be particularly valuable for people who are crossing the city, rather than starting or ending their trip in the centre.

Radial bus routes travel between the City Centre and suburbs. All existing bus routes in Galway are radial, mostly following the main roads in and out of the centre of the city, though with some orbital movements in routes to serve perpendicular roads like Threadneedle, Doughiska or Ballybane Roads.

Orbital bus routes travel between suburbs. This can be useful to connect suburban destinations. However, there is a trade-off between adding orbital service, and making radial routes more frequent.

In the future when Galway is a much larger city, outlying areas farther from the centre are further developed, then adding an orbital route may be sensible. But at the size foreseen for the next decade, a bigger effect can be made on journey times and the overall usefulness of public transport if the focus is put on higher frequencies, better connections between routes, and bus priority measures through the city centre.

Connections or Complexity?

There is a trade-off between interchange and complexity that arises from the math and geometry of transport. The more a public transport network is designed to avoid interchange, the more complex it will be, and the poorer the frequencies of many routes.

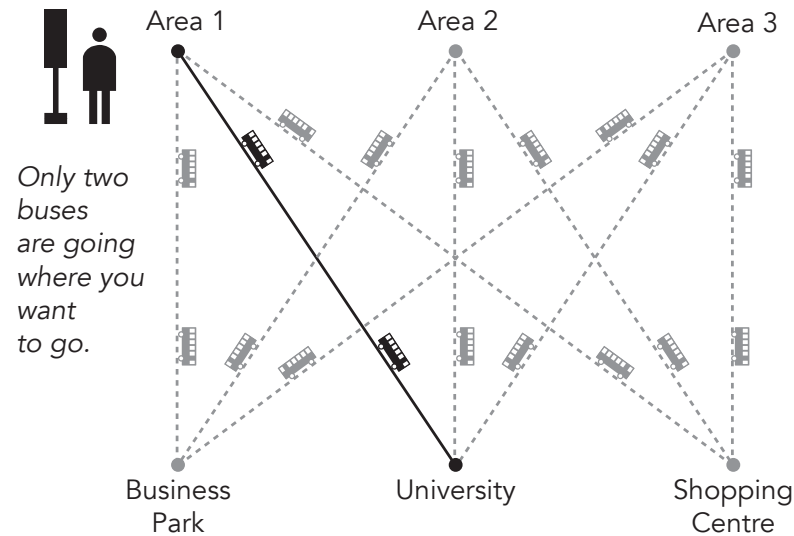
We would all prefer a one-seat-ride to our destination, rather than a second wait for a second bus. But making that wish come true for all would spread service thin, and thereby make it less useful.

The illustrations on this page and the next page show why designing a network for some interchange allows for higher frequencies, better reliability and shorter journey times overall.

The network at right is made of direct routes, one from each of three residential areas to each of three major destinations.

There are a total of nine routes, but each is only run by two buses, so the frequencies are poor. You always get a direct journey, but you can't depart when you want to, you have to time your departure to the bus schedule. If you miss their bus, it's a long wait until the next one.

Direct Routes, Higher Complexity



Your bus comes **infrequently**, and if you miss it you have a **long wait** for the next one.

In contrast, the network on this page serves the same six places but uses fewer routes.

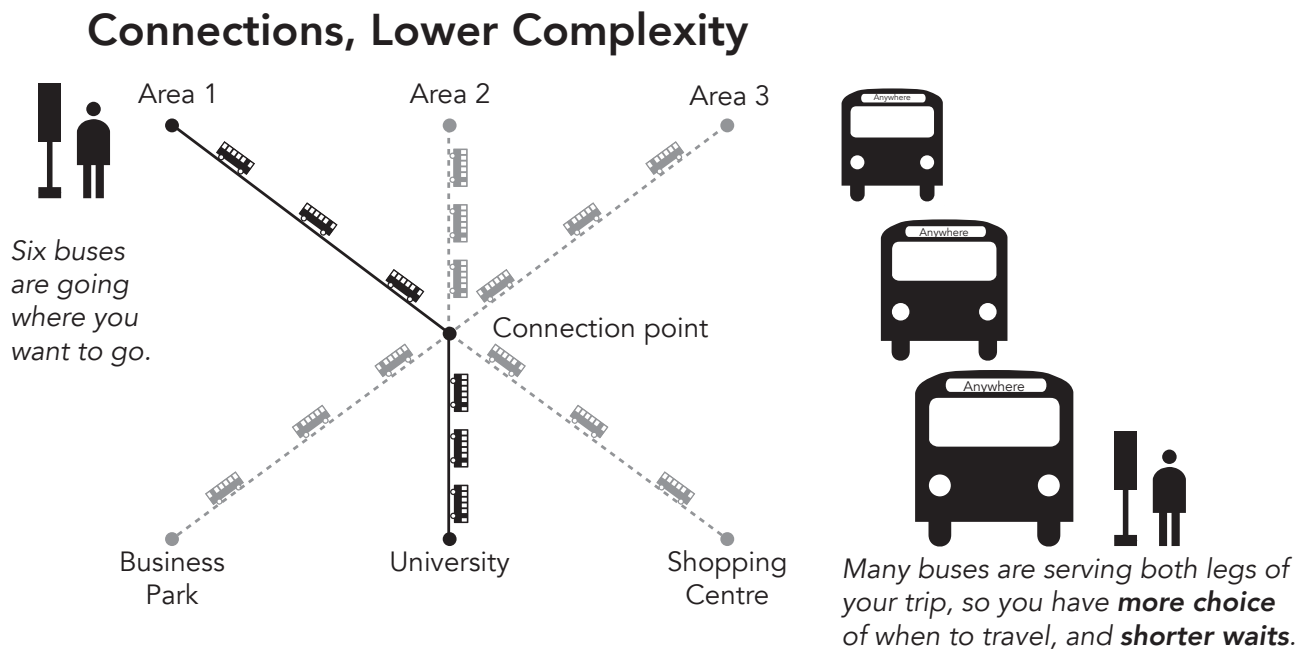
Each route offers much better frequency. In order to make this high frequency service possible, the available buses must be concentrated onto fewer routes, which means that some interchange is required. But the high frequencies make those interchanges fast and reliable.

In this more frequent network, you can depart at the right time for your work shift or class, because a bus is always coming soon. You needn't arrive too early just because that's when the bus timetable dictates. You spend less time waiting for the bus and **your door-to-door travel time is shorter - despite the interchange.**

An important thing to note about these two networks is that *they cost the same to operate.*

Even with the increase in service envisioned by BusConnects Galway, it is not possible to improve route frequencies in Galway if the network must also be designed to avoid interchange.

Designing the Galway bus network to



avoid interchange would mean running a “spaghetti-pile” of routes, from every area to every other area. With so many unique routes, they would have a poor frequency, because the available service would be divided across all of them.

People would save a little time by avoiding interchange, but they would lose more time due to the poor frequencies of the routes. Such a network would also be complex and hard for people to learn and remember, especially people new to

the city.

Whilst everyone would understandably prefer a route that goes directly from where they live to where they work; and another route that does the same to where they shop; and a third to where they socialise...satisfying those individual desires would result in an infrequent network that few people would find useful.

For this reason, the New Network was designed with an acceptance that some journeys will involve interchange.



3 Overview of the New Network

How to Read the Network Maps

Colours Show Frequency

In the maps on the next two pages **route colours represent frequency**. Each route is colour-coded based on its frequency on weekdays at midday.

- **Very thick, dark red** lines indicate very frequent service, with a bus coming every 10 minutes.
- **Thick red** lines indicate frequent service, every 15 minutes or better.
- **Medium thick purple** lines indicate routes that come every 20 minutes.
- **Medium thick dark blue** lines indicate routes that come every 30 minutes.
- **Thin light blue** lines indicate routes that come every 60 minutes.

New Route Numbers

All of the proposed routes have been given unique numbers, to differentiate them from existing Galway routes.

However, if a proposed route is very similar to an existing route, then it is given a related number. For example:

- Proposed Route 1 is similar to existing Route 401.
- Proposed Route 4 is similar to existing Route 404.

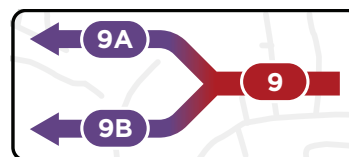
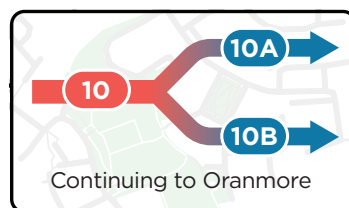
- Proposed Route 9 is similar to existing Route 409.

The numbers proposed are not final, and may change before the New Network is implemented.

Trunks and Branches

Some routes in the New Network will branch, shown on the maps with this diagram:

These are not interchanges. The buses on the less frequent “branches” come together to form the more frequent “trunk.”



In the top example, Route 10 on Dublin Road is a combination of Routes 10A and 10B to and from Oranmore. Routes 10A and 10B each offer 30 minute frequency, and where they are together

on Dublin Road they are scheduled such that one or the other of them comes along every 15 minutes.

The same is true of Routes 9A and 9B in the west, which combine to form Route 9 and continue to the city centre and to Parkmore.

Connecting Ireland

On the map on the next page, routes connecting Galway to Carraroe, Clifton, Tuam, Castlebar, Claremorris, Claregalway, Mountbellow, Athlone and Limerick are marked with a “CI” label.

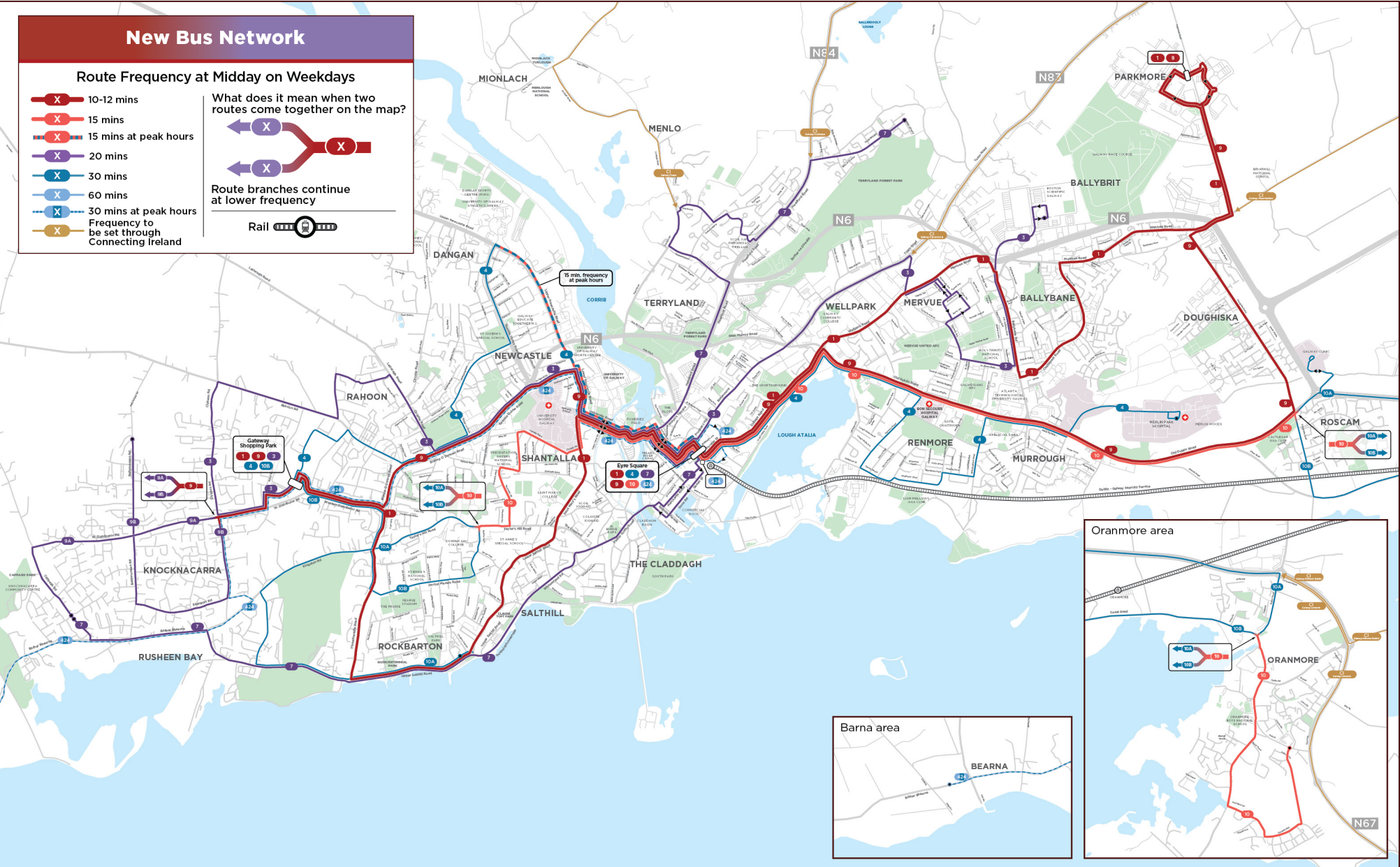
These “CI” routes will be planned in a separate process through Connecting Ireland. The towns they serve, their frequencies and their hours of service will be addressed in that process.

Route Descriptions

Street-by-street descriptions of each proposed route are provided on [page 38](#).

Written descriptions of proposed frequencies and hours of service are given on [page 97](#), whilst a graphical representation of frequencies and hours of service is shown on [page 14](#).

Map of the New Network



For a closer look at the New Network, please use the resources on the [project webpage](#), especially the [online map](#).

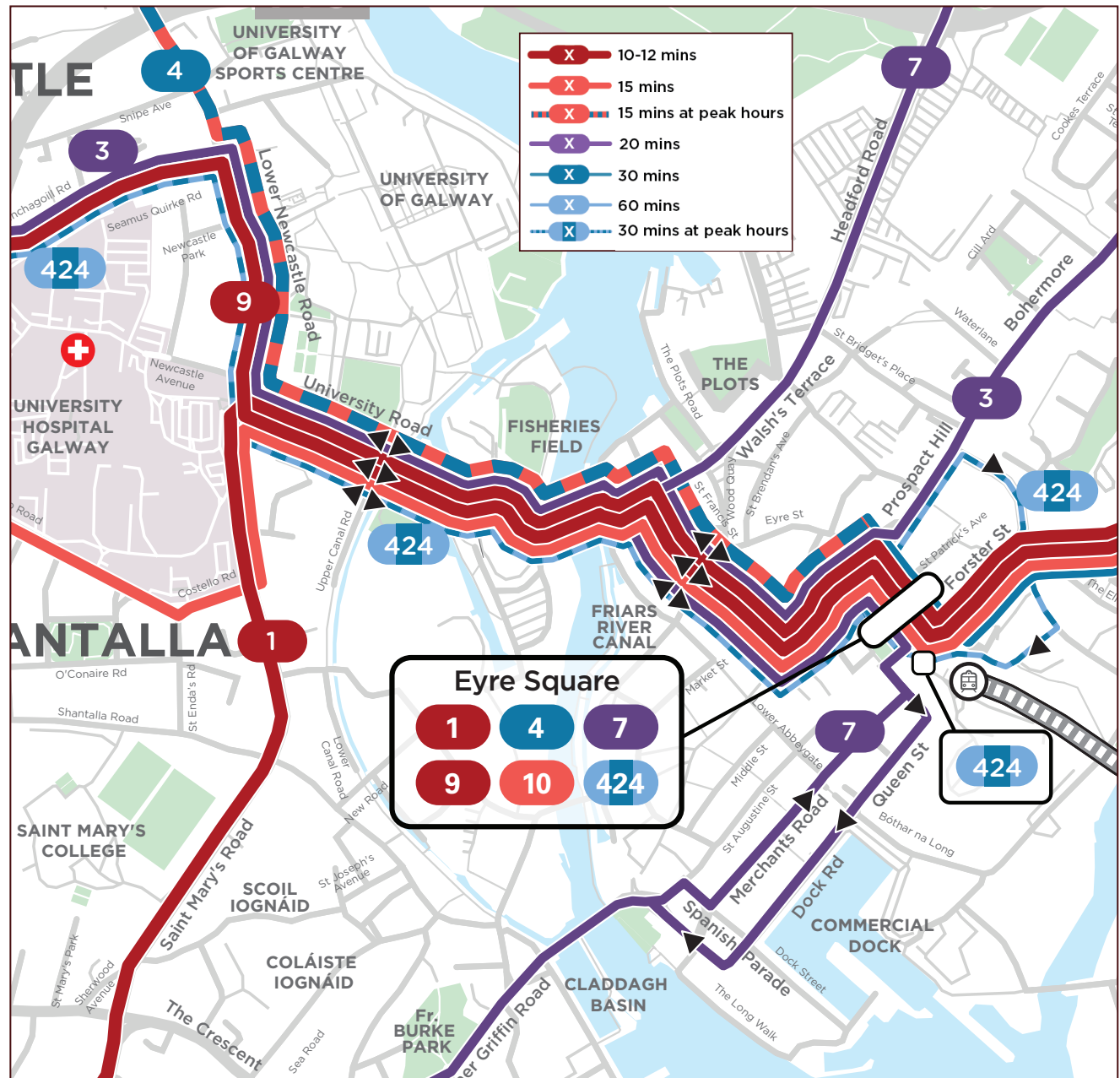
New Service Patterns in the City Centre

The city centre portion of the New Network is shown at right. All routes in the New Network will serve the city centre.

The design of routes in the city centre takes into account the Cross-City Link scheme, described starting on [page 19](#). A planning application for the scheme is currently before An Bord Pleanála, with a decision expected in 2024. Once consent is given for the scheme, then construction can begin immediately and can be completed in 2025.

The only urban route that will terminate in the centre will be Route 424 Carraroe/Bearna. All other routes will terminate on the outlying areas of Galway and in Bearna and Oranmore. This is a major change from the existing and requires that bus layover spaces and driver rest facilities (including toilets) be constructed at the outer termini of these routes.

Routes 3 and 7 will not use the Bus Priority Link between UHG and College Road. Routes 3 and 7 are likely to be slower when crossing the city centre than other routes. They may be less appealing to people making long journeys across the centre, but in most



of the outlying areas they serve other routes are nearby and could be used for faster cross-city journeys.

Route 3 will use Bohermore (rather than College Road) to ensure that residents and workers on either side of Bohermore Road have a reasonable walk to a bus. Without Route 3, the walk from a bus stop on Bohermore to a stop on the Bus Priority Link on College Road, or to a stop on Headford Road, would be more than 600m.

Route 7 will use Father Griffin Road to enter the city centre rather than University Road and the Salmon Weir Bridge. This will ensure that the many residents of the Claddagh will have a reasonable walk to a bus, as will the workers and visitors near Spanish Parade. It will also provide residents of the Claddagh a direct route into the centre rather than a deviation to the north to reach University Road.

Neither Bohermore nor Father Griffin Road will offer buses priority. In fact, in the Cross-City Link scheme Father Griffin Road is proposed as a main route for car movement. However, the consequences of deviating these routes into the Bus Priority Link

would be sufficiently grave – in terms of walking distance to service and additional journey time – that we believe they will be most useful if they use non-bus-priority street to reach the centre.

Changes in Coverage

As described in the first chapter, the New Network will provide new service in certain areas which are not served today. They are marked in yellow on the map below, and include:

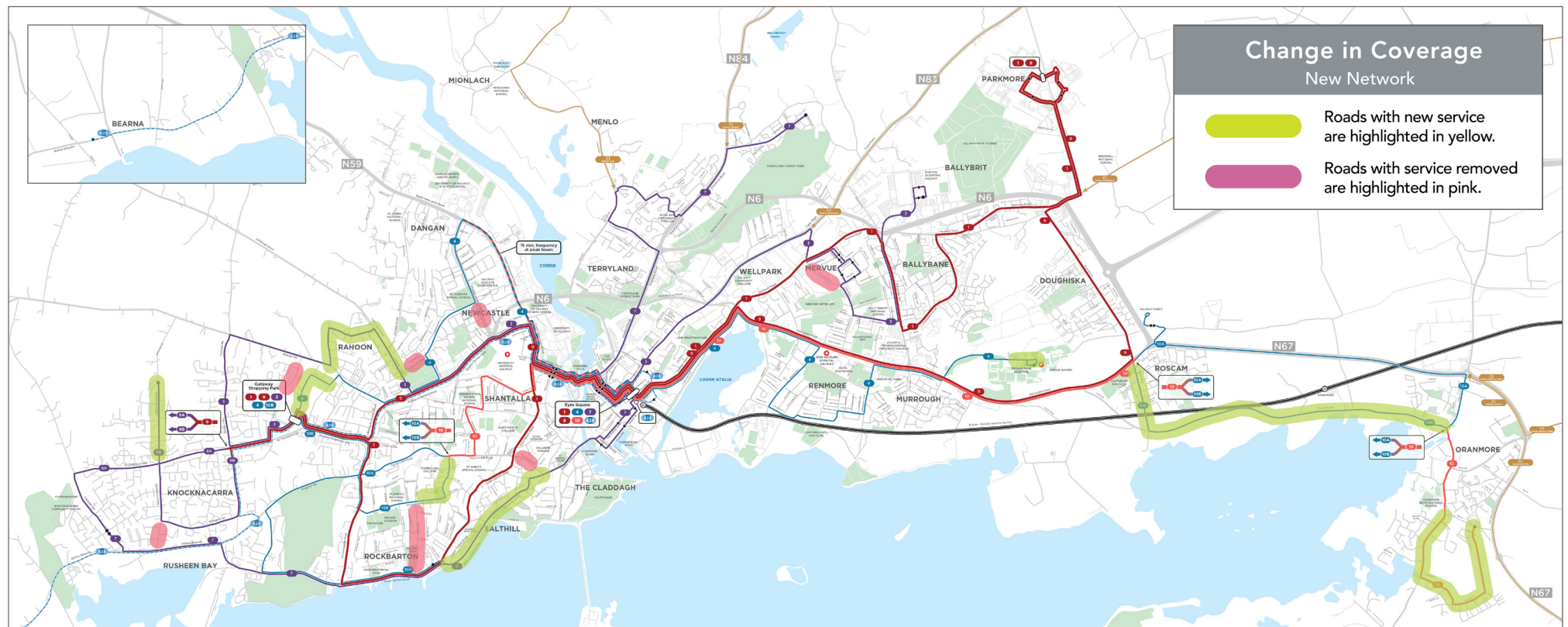
- Upper Ballymoneen Road
- The southerly part of Circular Road
- Roscam
- The Coast Road, between Galway City and Oranmore

- The south edge of Deerpark Industrial Estate
- Station Road in Oranmore
- Oranhill

The New Network will also remove service on a few streets, which are marked in pink on the map below. In these cases, the total number of people affected will be small, and improved service will be provided

within a short walk. Removing these few segments has a benefit to a large number of people as it allows bus routes to be more linear and direct and the network to be simpler and more frequent.

Overall the share of residents within 400 metres of a bus stop (about a five minute walk) will increase from 62% to 68%, with a similar increase in the share of jobs close to a bus stop.



Higher Frequencies and a New 24-Hour Route

The graphic below, repeated from the first chapter of this report, describes proposed frequencies for each route, by time of day and day of the week.

Every route will operate seven days per week. Service on all routes will operate from 6 am to midnight on weekdays and Saturdays.

Route 9 (and the 9A branch) will offer 24-hour service. On most routes, Saturday and Sunday service will be improved, either in terms of frequency or hours of service, or both.

The Galway frequent network will expand. Instead of the two routes offering high frequency today (every 15 minutes or better), *three* routes will offer high frequency (Routes 1, 9 and 10) on both sides of the city.

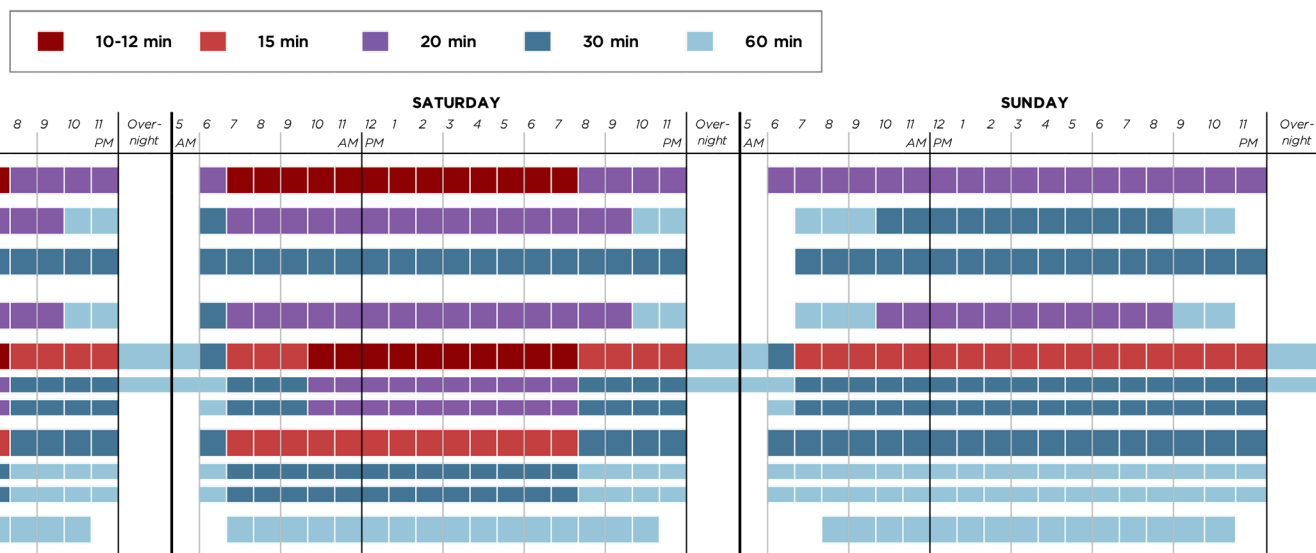
As a result, 33% of residents will be within a 5 minute walk of a frequent route (compared to 19% on the Existing Network).

Branches of routes will operate one-half as frequently as their trunk routes. During weekday daytimes this means

that Routes 9A and 9B will offer 20-minute frequency whilst the trunk Route 9 offers 10-minute frequency. The Route 10 branches (10A and 10B) will operate the same way, with 30-minute frequencies whilst the trunk has 15-minute frequency.

Text-based tables of the route frequencies shown below are provided starting on [page 97](#).

Galway Final Network Bus Route Frequencies



Notes

*4 Upper Newcastle is a peak only service that runs from the NUI Galway campus to Galway City Centre.
* This chart only shows the frequency of Route 424 between Ceannt Station and Bearna. Many 424 buses will continue on to Carraroe, Lettermullen, Cama, etc.

Route-by-Route Description

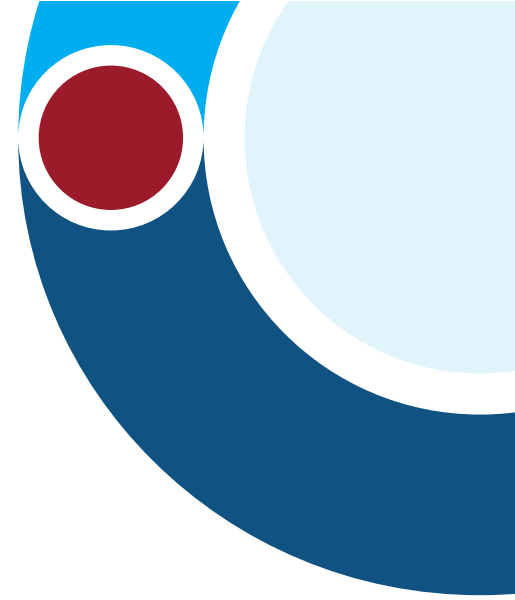
The table on this page provides a detailed text description of every proposed route and branch in the New Network.

The frequencies described in this table represent the frequency provided on weekdays, between 7 am and 8 pm. All routes also provide this frequency on Saturdays during the day.

Route 9 will offer a frequent trunk segment, which will divide into two less-frequent branches. The trunk and the 9A branch will operate 24 hours per day, seven days per week, coming approximately once per hour between midnight and 5 am.

Route 10 will also have a frequent trunk and less-frequent branches. The branches will take alternating routes to Oranmore, one on the N67 (via Galway Clinic), the other on the Coast Road.

Route	From	Via	To	How Often	Replaces Route...
1	Gateway	W. Distributor Road - Threadneedle Road - Salthill Promenade - Upper Salthill Road - St Mary's Road - Newcastle Road - University Road - Galway Cathedral - City Centre - College Road - Wellpark Road - Monivea Road - Ballybane Road - Castlepark Road - Monivea Road - Parkmore Road	Parkmore Business Park	15 mins	401
3	Gateway	W. Distributor Road - Clybaun Road Upper - Ragoon Road - Diarmuid Road - Bun a Cnoic - Circular Road - Seamus Quirke Road - Newcastle Road - University Road - Galway Cathedral - City Centre - Prospect Hill - Bohermore - Tuam Road - Monivea Road - McDonagh Avenue/Clarke Avenue - McDermot Avenue/Tone Avenue - Connolly Avenue - St James Road - Ballybane Road	Ballybrit Industrial Estate	20 mins	405
4	Gateway	Galway West Business Park - Ragoon Road - Seamus Quirke Road - Bóthar Le Cheile - Siobhan McKenna Road - Thomas Hynes Road - Upper Newcastle Road - Newcastle Road - University Road - Galway Cathedral - City Centre - College Road - Dublin Road - Renmore Road - Hawthorn Drive - Fuschia Drive - Ballyloughane Road - Dublin Road	Merlin Park Hospital	30 mins	402 + 404
4	NUI Galway	Upper Newcastle Road - Newcastle Road - University Road - Galway Cathedral	City Centre	15 mins, at peaks	NEW
7	Cappagh Road	Barna Road - Upper Salthill Road - Salthill Promenade - Seapoint Promenade - Whitestrand Road - Father Griffin Road - Dock Road/Merchants Road - City Centre - Eglinton Street - Headford Road - Coolough Road - Tirellan Heights - Headford Road - Bóthar an Choiste	Castlegar	20 mins	407
9	Knocknacarra (W. Distributor Road)	Gateway Exchange - W. Distributor Road - Ragoon Road - Seamus Quirke Road - University Road - Galway Cathedral - City Centre (via Cross City Link) - College Road - Dublin Road - Doughiska Road - Parkmore Road	Parkmore Business Park	10 mins	409
9A	Cappagh Road	W. Distributor Road - Gateway Exchange - W. Distributor Road - Ragoon Road - Seamus Quirke Road - University Road - Galway Cathedral - City Centre - College Road - Dublin Road - Doughiska Road - Parkmore Road	Parkmore Business Park	20 mins	411
9B	Upper Ballymoneen Road	Ballymoneen Road - Shangort Road - Clybaun Road Lower - W. Distributor Road - Gateway Exchange - W. Distributor Road - Ragoon Road - Seamus Quirke Road - University Road - Galway Cathedral - City Centre - College Road - Dublin Road - Doughiska Road - Parkmore Road	Parkmore Business Park	20 mins	NEW + 411
10*	Taylor's Hill Road	Maunsell's Road - Shantalla Road - Comcille Road - Costello Road - Newcastle Road - University Road - Galway Cathedral - City Centre (via Cross City Link) - College Road - Dublin Road - {Alternating paths depending on branch} - Main Street - Oranhill Road - Coill Clocha - Main Street (Lidl)	Oranmore	15 mins	NEW
10A	Salthill	Upper Salthill Road - Knocknacarra Road - Kingston Road - Taylor's Hill Road - Maunsell's Road - Shantalla Road - Comcille Road - Costello Road - Newcastle Road - University Road - Galway Cathedral - City Centre - College Road - Dublin Road - Galway Clinic - Eastern Approach Road - Main Street - Oranhill Road - Coill Clocha - Main Street (Lidl)	Oranmore via Eastern Approach Road	30 mins	404
10B	Gateway	W. Distributor Road - Bishop O'Donnell Road - Threadneedle Road - Doctor Mannix Road - Devon Gardens - Rosary Lane - Taylor's Hill Road - Maunsell's Road - Shantalla Road - Comcille Road - Costello Road - Newcastle Road - University Road - Galway Cathedral - City Centre - College Road - Dublin Road - Doughiska Road - Roscam - Coast Road - Main Street - Oranhill Road - Coill Clocha - Main Street (Lidl)	Oranmore via Roscam	30 mins	NEW
424	Bearna	Barna Road - Kingston Road - Shangort Road - Clybaun Road Lower - Western Distributor Road - Gateway Exchange - W. Distributor Road - Ragoon Road - Seamus Quirke Road - University Road - Galway Cathedral - City Centre. Limited stops in Galway.	Ceannt Station	60 mins, 30 mins at peaks	424



4 Summary of Public Feedback

Overview of the Consultation

Public consultation is at the heart of the BusConnects Network Redesign. The planning process was devised to provide abundant high-quality information to the public, to maximise the number of people consulted and to solicit feedback in ways that make it as actionable as possible for the NTA and other planners.

The focus of this chapter is the issues raised during the consultation relating to the design of the network and routes. During the consultation, submissions were received in relation to wider issues, such as ticketing and bus infrastructure. Feedback on these wider issues has been reviewed and will be used to inform the delivery of other elements of BusConnects Galway.

In April 2023 the Draft New Network was published. A non-statutory public consultation was carried out between 24th April 2023 and 2nd May 2023.

Just under 900 responses to this consultation were received through various channels. Based on this feedback, the NTA, in collaboration with the Councils, made some changes and improvements to the plan resulting in the Final New Network shown in this

report.

Feedback Channels

The channels for communication and consultation included:

- Print news, online news, radio and TV coverage, as well as social media and online media.
- The team printed a booklet detailing the proposed network changes, which was posted to every household or business address in the study area. The booklet was also available on the BusConnects website.
- Information on the [project webpage](#), including:
 - An interactive online map allowed people to query a specific address, see details of the proposed routes, see weekday and weekend frequencies, and visualise journey times to and from any place in the study area.
 - A detailed Draft Network Report was made available to download for those people wishing to understand deeply the proposal. The report was also provided in accessible, Irish language and Easy-to-Read versions.
- An online feedback form solicited both general and route-specific feedback, and organised it in such a way that the planning team could understand and take action in response to such a large number of responses.
- Integrated into the online feedback form were summaries of the main issues in the redesign, and videos explaining these issues and the proposals.
- Contact information for the submission of feedback by letter, email or phone call.
- Two webinars via Zoom were organised communicating the proposals, informing on the consultation process and how to submit feedback, and giving attendees the opportunity to put questions directly to the planning team.
- Three in-person consultation events were offered in Galway and Oranmore, where members of the public could pose questions of the planning team, look at large maps

and other displays, and give their feedback directly.

The dates and locations of the in-person and online events were as follows:

- Tuesday 16th May, 12:00-19:00, at the Ardilaun Hotel, Taylor's Hill Road
- Wednesday 17th May, 12:00-10:00, at the Maldron Hotel, Oranmore
- Thursday 18th May, 12:00-19:00, at the Hardiman Hotel, City Centre
- Tuesday, 23rd May, 18:30-20:00, online
- Thursday, 25th May, 13:00-14:30, online

Feedback Sources

As a result of offering many channels for public consultation, feedback came to the planning team from multiple different sources in multiple formats:

- The online Feedback Form contained structured questions as well as free text boxes for written commentary and a provision for uploading additional documents.
- Submissions were also received by email and by post.

- Email and a phone line were monitored for queries throughout the consultation period
- People were able to speak directly with the BusConnects team at the in-person consultation events.
- Questions and comments were taken in the online webinars.

All of the submissions received from these various sources were read by members of the project team, summarised quantitatively when possible, and summarised qualitatively when the feedback given was free-form or written.

In summer and autumn 2023, the written feedback described above, and additional guidance from the local Councils, were used by the NTA planning team to revise the Draft proposals into the Final New Network plan.

Analysis of Feedback

Across all feedback platforms the team received nearly 900 submissions.

- 772 submissions were made through the consultation portal, comprising 733 submissions from individuals and 39 from organisations.
- 66 email submissions were received from individuals and 11 from organisations and elected representatives.
- 47 written submissions were made at the in person public consultation events that took place in Galway.
- These sum to 896 submissions were received, although there was a small amount of duplication between online and email submissions made by the same person.

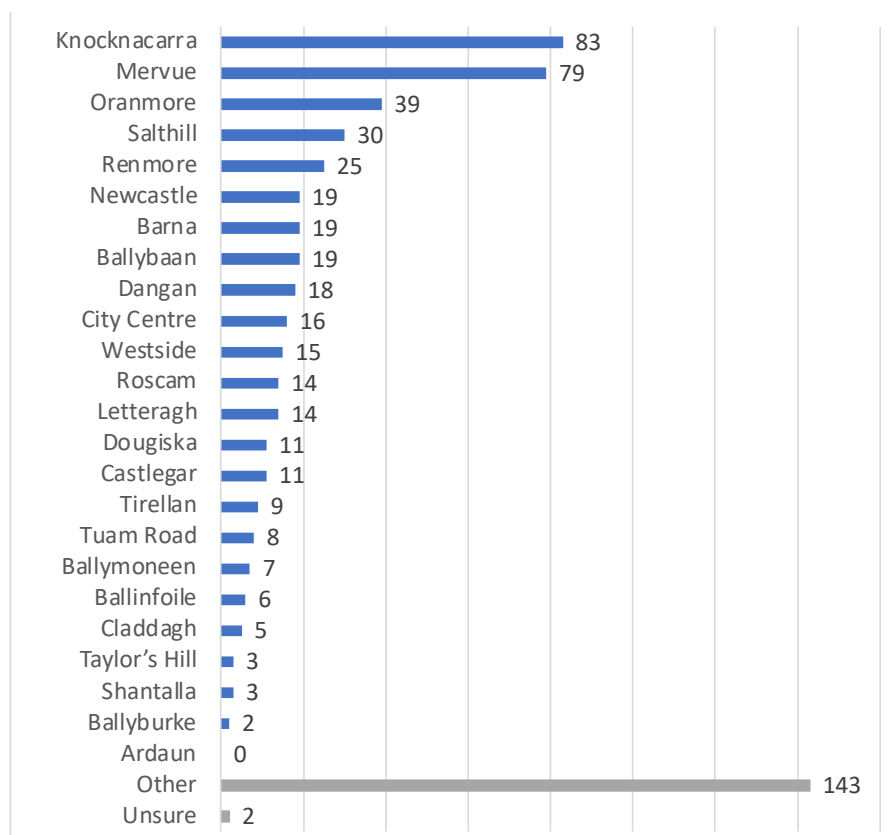
The consultant team of SYSTRA and JWA were engaged by the NTA to review and categorise the consultation submissions to facilitate additional analysis and interpretation. All feedback was categorised and considered in preparation of the Final New Network.

Profile of Respondents

The respondents were asked some general questions about themselves.

Where do you live?

600 respondents answered this question, of which the most common answers were “Other” (143), followed by Knocknacarra and Mervue (83 and 79, respectively).



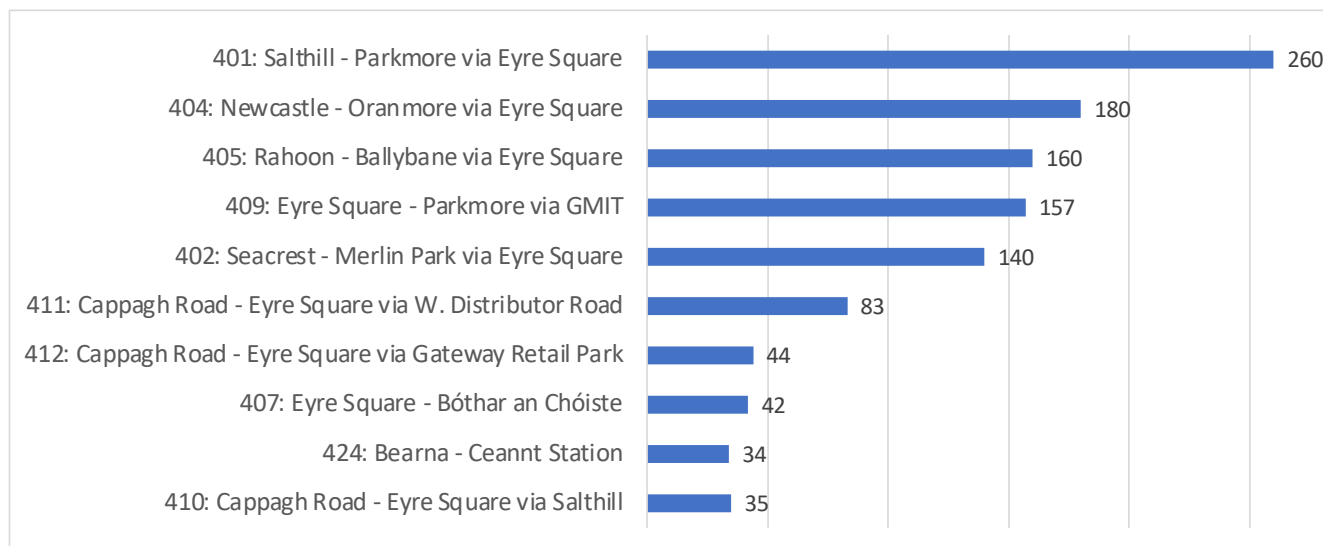
Do you use the bus to travel within the Galway area?

727 respondents answered this question. A majority, 74%, stated that they were bus users.

Which bus(es) do you use most often?

Respondents could select up to three buses from a list of existing services to convey which routes they use most often.

Route 401: Salthill - Parkmore via Eyre Square was chosen most often, 260 times. The next most commonly used route was the 404: Newcastle - Oranmore via Eyre Square. Among respondents there was representation for every route in the existing network.



How does the Draft New Network compare to the existing Galway network? ...for you?...for people you know?... for the Galway area?

Respondents were asked to give a general indication as to whether the Draft New Network was better, worse or about the same as the existing network from different perspectives.

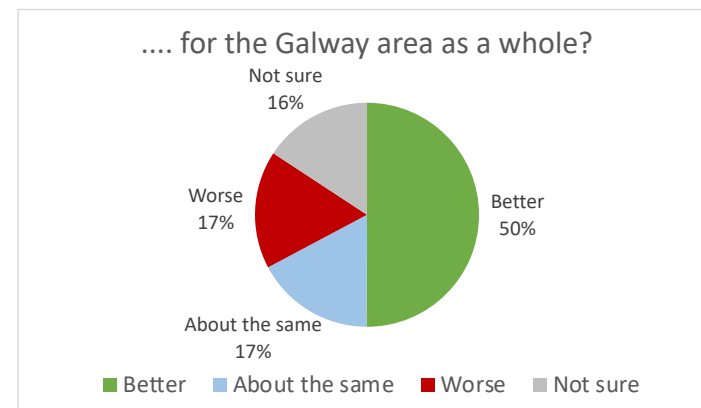
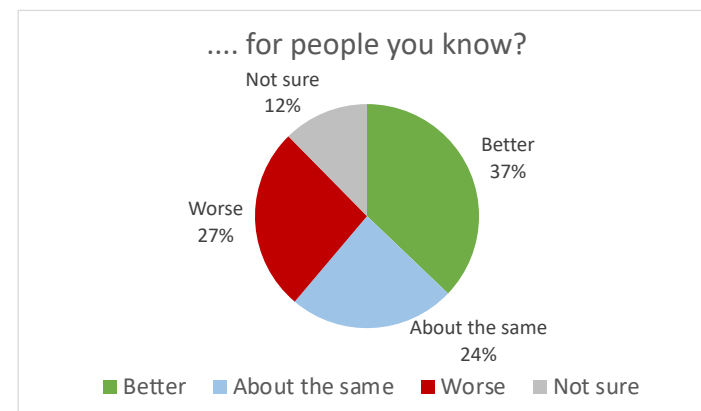
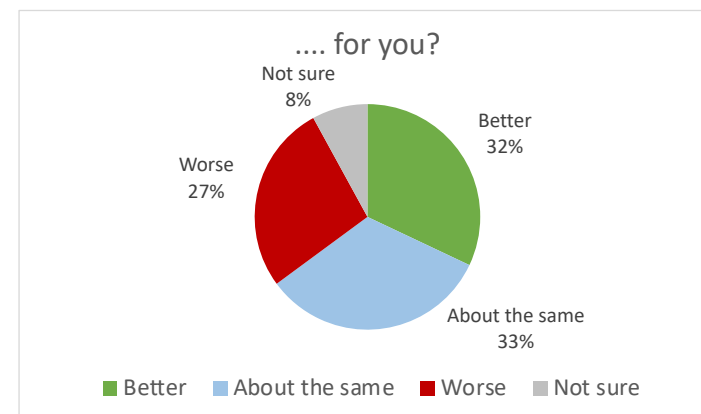
703 people answered at least one, if not all three, of these questions.

Around a quarter of respondents stated that, for themselves, they considered the Draft New Network to be worse than the existing network. Around a third thought the Draft New Network was better for them.

The responses were more positive when people were asked to consider the Draft New Network from the perspective of a larger group of people beyond themselves. The proportion of respondents who thought the Draft New Network would be better for the entire Galway area was 50%, with only 17% believing it would be worse. Given the scale of change proposed to the network, this is a fairly high level of general support and a low level

of concern, compared to the ways that communities typically react to proposals for major changes to their historic bus networks.

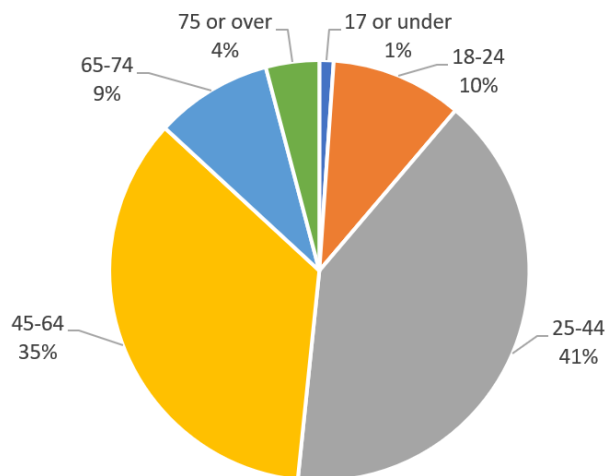
The difference in the answers between the “...for you?” and “... for the Galway area as a whole?” perspectives indicates that general support for the changes is high but some people had specific concerns about their own journeys.



How old are you?

730 respondents answered this question.

- The largest number of respondents were in the 25 to 44 age group, closely followed by the 45 to 64 age group.
- 11% of respondents were aged under 25.
- 13% of respondents were aged over 65.



It should be noted that there were older respondents among the 113 submissions that came via email or in writing at in person events. Unlike submissions made via the online form, submissions received in writing or in person did not capture age information.

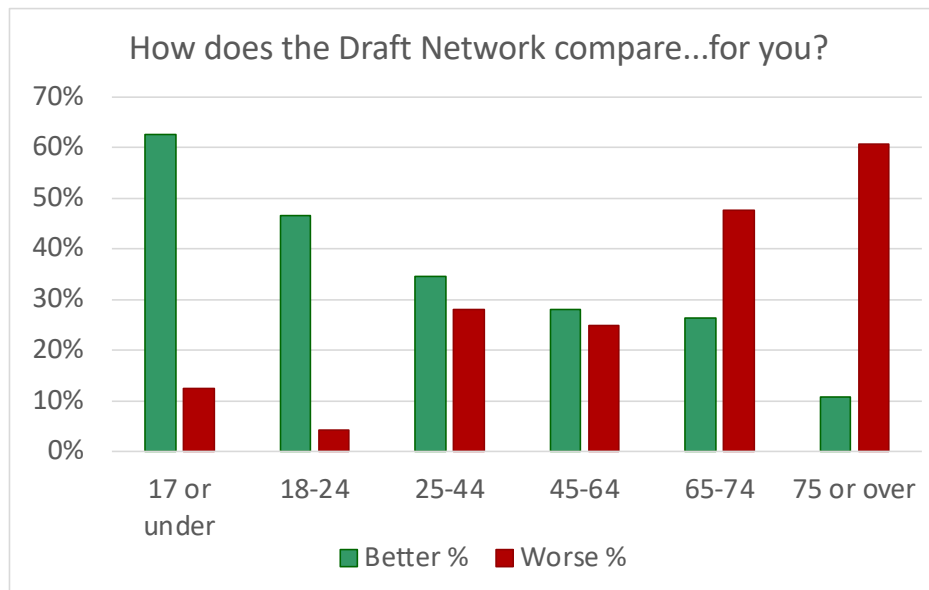
Feelings about the Draft New Network By Age

715 people answered both the questions regarding age and their feelings about the Draft New Network, allowing for this cross-tabulation.

There was variation across the age groups in response to whether the Draft New Network was viewed as better, worse or about the same as the existing network.

The great majority of respondents under 25 years considered the Draft New Network to be an improvement on the existing services.

In contrast, respondents over 65 mostly rated the Draft Network as being worse. Many of the negative responses from older people related to the changes to service in Mervue, which is discussed at length later in this chapter.



Age Group	% who said "Better"	% who said "Worse"
17 or under	63%	13%
18-24	47%	4%
25-44	34%	28%
45-64	28%	25%
65-74	26%	48%
75 or over	11%	61%

General Themes from Feedback

While the content of individual and organisation submissions varied across Galway, a number of general themes frequently emerged:

- Longer hours of operation
- Interchange and direct services
- Orbital routes and the Quincentennial Bridge
- Services through University Hospital Galway
- Travelling within the east of Galway
- Future developments
- Bus service outside the study area

The comments related to each theme were a mix of positive and negative, for example many submissions welcomed the introduction of longer hours of operation on the 24-hour service, whilst others feel that the operational hours could be extended further in their area.

Longer Hours of Operation

Many responses from both individuals and organisations expressed support for the 24-hour service that will be provided by Route 9.

There were requests for Route 1 to also

be considered for a 24-hour service.

There were also requests for buses on other routes to start running earlier and finish later so that people can access jobs that operate in shifts around the clock, seven days a week, such as at the hospitals and industrial estates.

Requests for extended operating hours were also received specifically for travel from Bearna and Oranmore.

NTA Response

The enthusiasm and need for extended hours of operation is understandable.

The New Network represents a major increase in the provision of bus services in Galway, represented by more routes, better frequencies and longer hours of service. Every route in the network will have at least one of these types of improvements, if not all three.

The hours of operation that have been proposed will be implemented as soon as possible (given the need to acquire more vehicles and hire and train additional drivers). Once the improvements have been implemented, the hours of service

“The majority of staff ... commence work before 8am, with almost one third commencing before 7am.”

“If it could start earlier for work[ing] people that’d be great.”

“It is very welcome that this route will run on a 24 hour basis.”

“We particularly welcome the increased frequency of buses, the broader route network and the inclusion of a 24 hour route.”

“Lack of 24 hrs on this route [1] is very disappointing.”

“Late night workers, such as those in the hospitality ... must have access to these services to commute to and from work.”

will be reviewed again. Based on how the bus network is used at different times of day, changes to the hours of operation may be made in the future.

Interchange and Frequency

Some respondents welcomed interchange to make a more frequent network possible and to give them easier access to many different destinations.

However many respondents requested direct services that would eliminate the need to change buses.

To make interchanges comfortable while maintaining reasonably direct routes, the planning team has identified very important hubs at Eyre Square and at Gateway Retail Park. Infrastructure will be needed to allow

“Why can’t we see more connectivity ... why do we have to switch buses in Eyre Square?”

“I am delighted to see the increased frequencies, and I would be happy to walk a little further or change buses to benefit.”

“Free Interchange is an excellent proposal.”

buses to stop and layover, and to give passengers places to get information, sit, and have shelter from rain and wind. Some respondents asked for an additional interchange facility, for example on Headford Road.

NTA Response

The Draft Network Plan represented an intentional choice about interchange and frequency in the Galway network.

Within any limited supply of service and buses, two desirable characteristics of a bus network trade-off against one another:

- On the one hand, the network can be made simple, with frequencies as good as they can be so that waits for service are short. But in this case, some journeys require interchange. Despite the interchanges, total journey times are short because so little time is spent waiting.
- Alternatively, myriad unique “one-seat-ride” routes can be offered from all major residential areas to all major destinations (such as shopping and employment areas), with no interchanges needed for most journeys. But in this

case, route frequencies are poor (because service is divided into so many different routes). Total journey time is longer because so much time is spent waiting.

The Draft Network Plan reflected the choice of the first type of network, rather than the second. This means that some journeys will require interchange.

People are understandably concerned about reliability, given the importance of interchange to the New Network and the history of late or no-show buses in Galway. One of the strategies of BusConnects Galway is the provision of bus lanes and other bus priority measures, to speed service and make arrivals more dependable. This strategy is closely linked to the introduction of better frequencies and more interchanges in the New Network, as is the change to fare structure which will end the payment of an additional fare to interchange between urban services.

Regarding additional interchange locations aside from Eyre Square and Gateway, there are many locations in the network where routes meet providing the opportunity

to interchange. Examples include changing on Dublin Road between Route 9 and Route 10 for journeys between Parkmore and Oranmore, and changing in Knocknacarra from Route 424 to Route 7 to travel between Bearna and Salthill.

The two major hubs at Eyre Square and Gateway are unique places where numerous routes will come together and some routes will end. Benches, shelters and street crossings will be provided at many other locations aside from these hubs to facilitate interchange wherever routes cross one another.

Orbital Routes and the Quincentennial Bridge

Numerous respondents suggested an orbital bus route that would link the east and the west of Galway while bypassing the centre of the city. There were requests for routes that would travel between Knocknacarra and destinations such as Parkmore, Ballybrit and the Galway Clinic, without passing through the city centre. The suggestion was to utilise the Quincentennial Bridge for orbital services.

There were also some requests to run a bus service on the Quincentennial Bridge that would link the University of Galway to student residences on the other side of the river.

NTA Response

For orbital services to be viable they need offer competitive journey times. Congestion makes travel over the Quincentennial Bridge slow at peak times. For example, at present the staff shuttle bus service between Merlin Park Hospital and University Hospital Galway uses Quincentennial Bridge during the morning peak period but at times of congestion during the evening peak the bus will actually travel via the city centre. With the future implementation of the Cross-City Link, which will give buses greater priority through the city centre, it is expected that routing buses via the city centre will be better than routing via the Quincentennial Bridge.

In addition, an orbital route in Galway would need to be extremely frequent in order to offer a journey time that is faster than going through the centre, given how direct, frequent and (after Cross City Link) fast the radial routes will be. Orbital routes in small cities

like Galway are not generally time-competitive with radial routes, and as a result they tend to attract few patrons relative to their cost of operation. Investments in service on other routes tend to benefit many more patrons, and therefore take priority.

Once a city grows larger than Galway, then the out-of-direction kilometres saved by the orbital movement are greater and the orbital route can start to offer some journey time savings. A high frequency is also required on an orbital route for it to offer a shorter overall total journey time than radial routes.

University students live all across the Galway metropolitan area. Their journeys to the University of Galway have been an important consideration in this planning process. However, the student housing located just east of the Quincentennial Bridge is within walking, cycling or scooting distance

“Allow travel from east city to west city over Quincentennial bridge”

“Not everybody wants to go / is working in City Centre”

of the campus for most people. The City Council has made major efforts to improve conditions for such active journeys across the bridge.

As Galway continues to grow, and if opportunities for fast and reliable bus movements across the River Corrib arise, then this issue can be revisited.

Service Through University Hospital Galway

Some respondents asked if buses could be run through the grounds of University Hospital Galway, instead of routing via Lower Newcastle Road and Seamus Quirke Road.

NTA Response

At present it is not possible to operate buses through the UHG campus. Should the future development of UHG provide for the opportunity to create a suitable route, this will be investigated, as it would bring a high level of bus service close to major employment and health care destinations whilst improving the linearity of, for example, Route 10.

Subsequent work on the BusConnects

sustainable transport corridors may allow for further exploration of routing options through UHG, in collaboration with the hospital and the City Council.

Travelling Within the East of Galway

Some respondents requested that the bus network connect the areas north of Dublin Road, such as Mervue and Ballybane, with Doughiska and with areas south of Dublin Road, such as Renmore and Roscam. At present such journeys require a long walk to a bus route or two bus trips for a short journey that can be cycled or driven quickly by car.

NTA Response

We recognise that there will be some demand to travel north-south between these areas and that using the bus network for such a short trip is awkward and time-consuming. Unfortunately the current level of demand for these trips is not high enough to support a bus service.

As Galway grows, bus service that makes such north-south journeys possible on the east side will be considered.

However, to make it possible to offer such north-south routes in linear patterns that feel direct to patrons, street connectivity would have to improve between adjacent areas.

Areas in the east of the city that are currently difficult to connect with a bus route for lack of streets are Ballybrit and Castlegar; Murrough and Renmore; Murrough and Roscam; Castlepark and Merlin Park; and Merlin Park and Doughiska. With each of these areas isolated, routes serving them are forced onto the main roads, which increases duplication, reduces patronage relative to cost, and forces people to travel in mostly radial patterns.

Future Development

Some respondents mentioned recent and future developments that are planned in Galway and asked for a bus route or more frequent buses to serve these new developments.

NTA Response

The provision of bus services with good frequencies and long hours and days of service will be key in keeping Galway moving as the city grows. It's

essential however that the network offer competitive service for the areas of the service that are already developed, especially the populous and dense parts of the existing city. Within Galway there are future developments that are committed, and those that are aspirational and do not yet have planning permission. In the Final New Network, service is provided to developments that are under construction or nearly under construction.

The network and routes were designed with an eye towards eventual extension into future development areas, even if service to those areas is not yet in the plan. As Galway continues to develop, the bus network will be reviewed and revised in order to meet changing demands. The revisions could include the lengthening of some routes (which often requires upgrades to roads and footpaths), improvements of frequencies or additional hours of service.

Bus Service Outside the Study Area

A large number of submissions were made in relation to bus service provision to areas outside the BusConnects Galway study area. These submissions generally requested higher frequency service and often sought longer hours of operation, particularly into the late evening and night. The areas most frequently mentioned were Moycullen, Claregalway, Carraroe, Gort, with mentions too of Menlo, Kinvara, Clarinbridge, Oughterard, Clifden and Kilcolgan.

NTA Response

BusConnects is focused on the city bus network and the study area covers the largely contiguous urban development of the city. The Connecting Ireland programme which is being implemented by the NTA is improving bus service provision outside the cities, including all those mentioned in submissions.

Feedback by Route

Respondents were invited to provide feedback on each route in the Draft New Network. Respondents were asked if they liked or disliked the route or whether they had questions on routes proposed. Some people provided feedback on multiple routes.

The table at right shows the balance of people who said they liked or did not like each route.

Opinions were mixed regarding Route 1, with nearly equal numbers of people pleased with the changes or concerned about the removal of a deviation to the Mervue shopping centre (in comparison with the existing Route 401).

There were three times as many negative opinions about Route 3 as positive opinions. Most of the concern seemed to arise from the fact that this route would pass through a residential area via Bun na Chnoic and Cnoc an Óir.

For all other proposed new routes, the balance of opinions was more positive than negative.

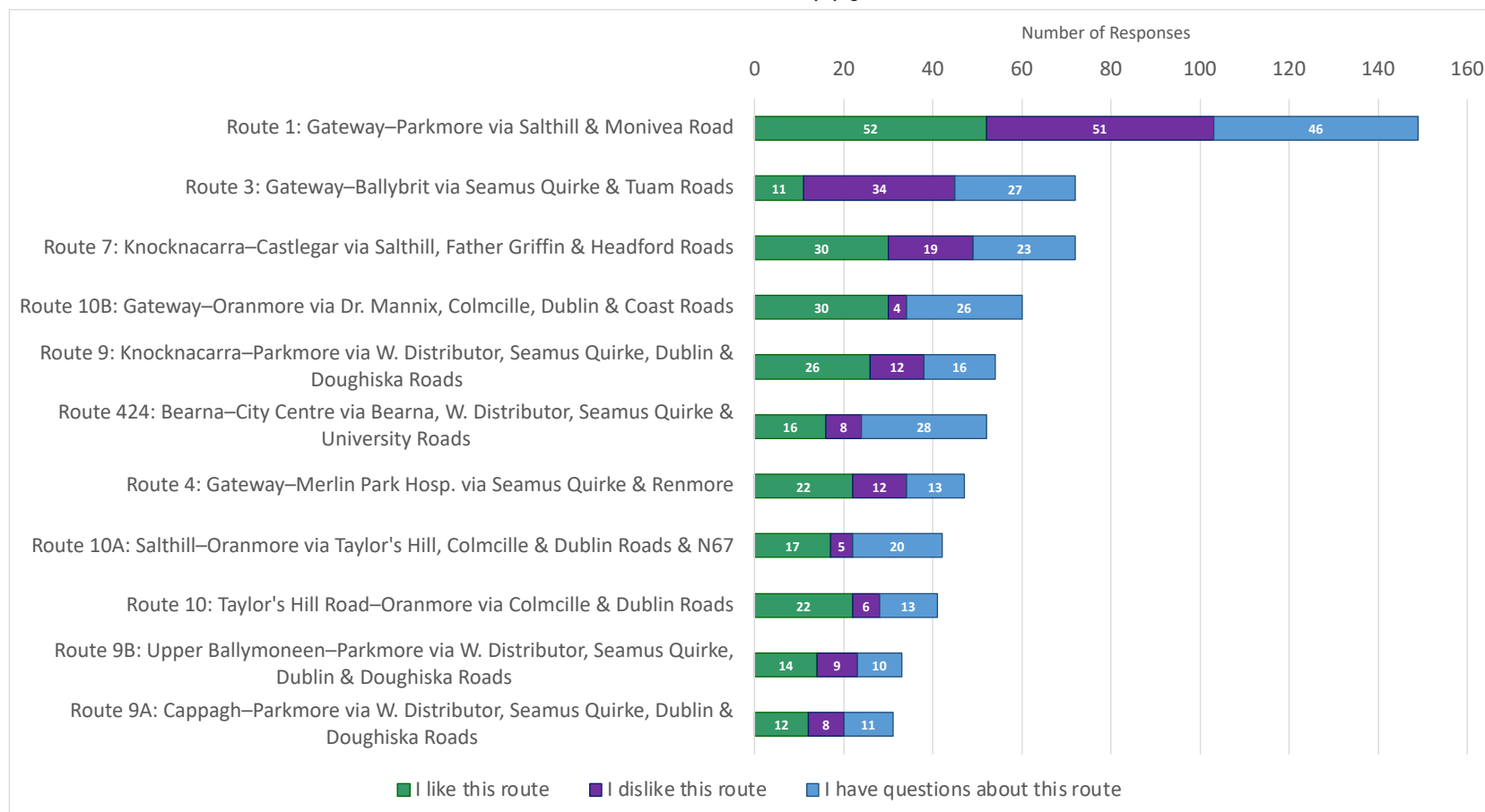
New Route Number	Description	Like	Dislike
1	Gateway - Parkmore, via Salthill and Monivea Road	33%	32%
3	Gateway - Ballybrit, via Seamus Quirke and Tuam Roads	15%	45%
4	Gateway - Merlin Park Hospital, via Seamus Quirke and Renmore	46%	25%
7	Knocknacarra - Castlegar, via Salthill, Father Griffin & Headford Roads	41%	26%
9	Knocknacarra - Parkmore, via W. Distributor, Seamus Quirke, Dublin and Doughiska Roads	45%	21%
9A	Cappagh - Parkmore, via W. Distributor, Seamus Quirke, Dublin and Doughiska Roads	38%	25%
9B	Upper Ballymoneen - Parkmore, via W. Distributor, Seamus Quirke, Dublin and Doughiska Roads	41%	26%
10	Taylor's Hill Road - Oranmore, via Colmcille and Dublin Roads	51%	14%
10A	Salthill - Oranmore, via Taylor's Hill, Colmcille & Dublin Roads and N67	37%	11%
10B	Gateway - Oranmore, via Dr. Mannix, Colmcille, Dublin and Coast Roads	48%	6%
424	Bearna - City Centre, via Bearna, W. Distributor, Seamus Quirke and University Roads	30%	15%

The chart below shows the balance of opinions regarding each proposed route, including not only the ratio of “Like” (green) and “Dislike” (red) responses (reported in the table on the previous page) but also the overall quantity of responses per route and the proportion of respondents who said “I have questions about this route”

(blue).

The analysis presented on the next pages relates to comments written by the respondents to the survey. Not all participants chose to make written comments. People who were unhappy with the proposal were more likely to submit a written comment than those who were happy.

Feedback on specific routes or specific areas has been organised in the following pages based on the closest route in the Draft New Network.



Route 1

As illustrated in the chart at right, the response to Route 1 was mixed, with similar numbers of respondents liking and disliking this route.

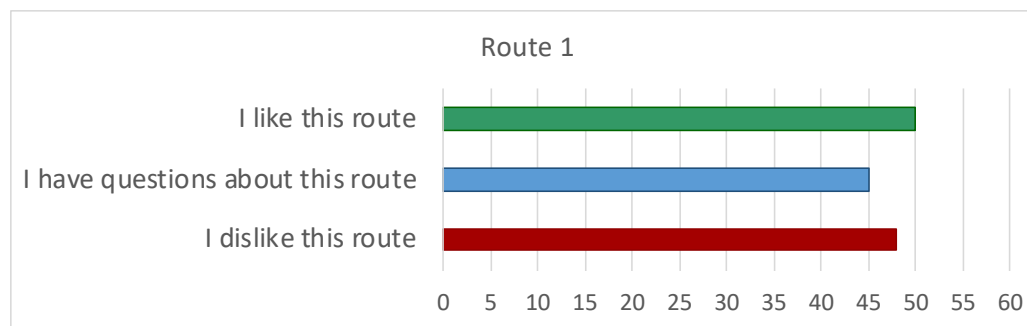
Respondents who liked the route mentioned, among other things, the increase in the frequency of services between Salthill, University Hospital Galway and Parkmore, and the provision of a direct link between Salthill and Gateway Retail Park.

The consultation feedback for Route 1 primarily relates to the following main issues and suggestions:

- Loss of service on Dalysfort Road, which currently has one-way service from Route 401.
- Loss of service at the Mervue shopping centre, where the stops on Parnell Avenue and Clarke Avenue are currently served by a deviation of Route 401.

Comments received in relation to changes to the bus route in Parkmore are presented in the Route 9 section.

In relation to the feedback, all suggestions and issues were reviewed, possible amendments were developed,



and the amendments were assessed against costs, reliable operations, the number of potential beneficiaries and the needs of potential beneficiaries.

The following points outline the NTA planning team's responses to the feedback on Route 1 and nearby areas.

Dalysfort Road

A number of submissions objected to the removal of a bus service on Dalysfort Road, with reference to the elderly and people with disabilities being particularly negatively affected. Other submissions however, welcomed the removal of the "bottleneck" on Dalysfort Road.

At present the existing 401 bus serves Dalysfort Road in one direction, so passengers either board early and remain on board as the bus completes its loop, or walk to Upper Salthill Road

to board a bus heading into the city centre. In addition, on match days at Pearse Stadium the Gardaí close Dalysfort Road due to pressure on

parking in the area meaning buses and other vehicles cannot get through.

To reliably operate the network, bus access to Dalysfort Road would need to be unobstructed all day of every day. Due to on-street parking restricting the road width it is not possible to operate a two-way bus service on Dalysfort Road. Whilst some residents on Dalysfort will have a longer walk (and uphill) than previously, there are several bus services in the area. On Upper Salthill

"The loss of the Dalysfort stop will be a huge loss to the older generation."

"I am relieved to see that the difficult bottleneck of Dalysfort Road has been removed."

Road, Route 1 provides a 15-minute frequency, Route 7 provides a 20-minute frequency, and the revised Route 10A provides a 30-minute frequency. On Doctor Mannix Road, Route 10B provides a 30-minute frequency. These walks are similar in distance to the distances people are expected to walk to service elsewhere in the city.

Overall, removing the one direction of service currently provided on Dalysfort Road will make the whole of Route 1 more reliable, improve the quality of service through Salthill to Gateway, and have impacts on nearby residents which are fair in comparison to the impacts on other residents of the city.

Action: No changes to the network.

Mervue Shopping Centre

Many submissions, including 109 individual submissions, were received

“You are disconnecting those who need it most.”

“The Monivea road stop is too far to walk especially for our elderly.”

about the removal of bus service on Parnell Avenue and Clarke Avenue to the Mervue shopping centre. The main concern was that the removal of a service would affect the elderly residents in the area.

Currently service to the Mervue shopping centre is accomplished by a deviation on Route 401, which adds time to the journeys of all through-passengers on Route 401.

A much smaller number of submissions welcomed the improvement to the linearity and speed of Route 1, connecting passengers to Parkmore more directly without the deviation into Mervue.

The planning team reviewed the network in this area in light of the comments made in submissions. Street connections into and through Mervue are lacking, which makes it difficult to serve without making bus routes circuitous and slow. Ideally, the area would be served by a through route rather than the existing diversion off a main route. Circuitous routing or deviations cause delays for passengers who are passing through the area.

Recognising the feedback, the shopping centre can be served at

the same bus stop as in the existing network, but by a different route: Route 3 is revised to provide a bus service on Parnell Avenue and Clarke Avenue in Mervue.

However, a condition of this service is that the City Council re-organise car parking on certain streets (so that all cars are parked on the same side of the road, rather than one-half on either side) to allow for reliable passage of the bus. In addition, a small number of spaces near sharp corners may need to be protected from car parking. With these changes and with enforcement of the new rules, a route to and through the area can be made reliably operable by bus.

On this new route, from Tuam Road, the Route 3 bus would serve Monivea Road, then McDonagh Avenue, Parnell Avenue, and McDermott Avenue, before resuming the original path on Michael Collins Road.

On journeys towards the city centre, from Michael Collins Road the Route 3 bus would be routed via Barry Avenue, Tone Avenue, Parnell Avenue, Clarke Avenue, and onto Monivea Road. This rerouting of Route 3 allows Mervue to be served by a bus service of an

appropriate frequency.

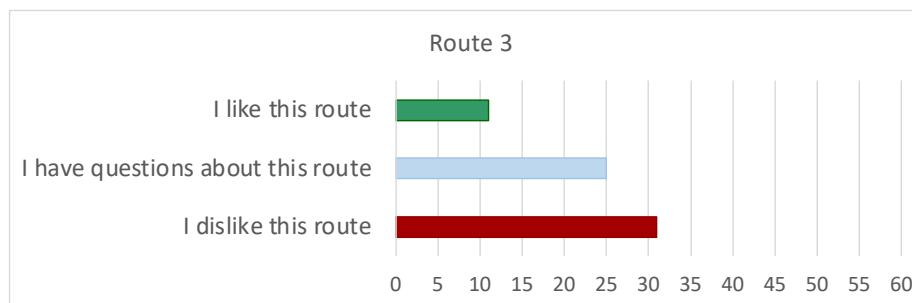
Action: Route 3 will be planned to serve the existing bus stop at Mervue shopping centre, if car parking regulations and enforcement can make the necessary nearby streets reliably passable for the bus.

Route 3

As shown in the chart at right, the response to Route 3 was mostly negative, making Route 3 the most disliked route in the Draft New Network. Many of the objections to the route were due to its service to the housing estate between Ragoon and Letteragh Roads, via Bun A Chnoic and Cnoc an Óir where at present vehicular access is blocked by concrete planters. There was a wariness among respondents about how and whether a bus-only connection would work and whether private car traffic would use it as well as the bus.

The consultation feedback for Route 3 primarily relates to the following main issues and suggestions:

- Routing buses via Bun A Chnoic and Cnoc an Óir



- A request to increase the frequency from every 20 minutes to every 15 minutes

The following points outline the NTA planning team's responses to the feedback on Route 3 and nearby areas.

Bun A Chnoic and Cnoc an Óir

There were a small number of submissions that welcomed the proposed route through Bun a Chnoic and Cnoc an Óir, people stating that they would really like or need a bus that serves the estate.

However many respondents objected to the proposal. Some people referenced plans for further development to the north and proposed a bus connection through that part of the future estate instead of their part.

Many objected to buses operating within the estate, and raised concerns

over the width of the road to accommodate buses and the perceived negative impacts on children's safety as they play in the estate.

Some queried whether a re-opened vehicular street through the estate would be for buses only or for all vehicles, with concerns about traffic if the connection was for all vehicles. There were questions about whether there would be an opportunity to make comments on

"Will offer me an alternative to getting to Quirke without driving."

"Reducing car dependency and increasing independence for younger people."

"The buses run the risks of injuring children or adults, and the possibility of damaging cars."

"This road itself is also quite narrow."

or raise objections to any change in traffic management in Bun a Chnoic or Cnoc an Óir.

This residential area is between Letteragh and Ragoon Roads. If it were not possible to drive a bus on a local street between these two roads, then there would be no urban bus service out Letteragh Road at all, and there might not be a service on Ragoon Road either. Bus service is only available if and when street connectivity allows it to service multiple areas and many different people. This means buses passing through residential areas.

The NTA will work with the Galway City Council to develop a bus-only street connection in Bun an Chnoic, or north of Bun an Chnoic, to allow service on Letteragh and Ragoon Roads.

Action: No changes to the network.

Better Frequency

There were requests for the frequency of Route 3 to be increased from every 20 minutes to every 15 minutes.

On the east side of Galway, the proposed Route 3 is similar to the existing Route 405. Route 3 will have

“It warrants a 15 minute frequency.”

“It’s always crowded, I feel every 15 or even 10 mins would be more beneficial.”

a similar frequency as Route 405 does today during weekday daytimes, but a better frequency during evenings and on Sundays.

The frequency improvements to nearby Routes 1 and 9 may slightly reduce pressure on Route 3, as some people will have a choice between more than one nearby route will choose the one that is coming soonest, which is likely to be Routes 1 or 9.

On the west side of the city, there is no existing route similar to Route 3 and so crowding on existing west side routes is not necessarily a good guide to potential for crowding on this proposed new route.

As for all routes, patronage and crowding will be monitored on these future routes, and increases to the frequency of buses will be considered if they become crowded.

Action: No changes to the network proposed.

Route 4

As illustrated in the chart at right, the response to Route 4 tended to be more positive than negative.

The consultation feedback for Route 4 primarily relates to the following main issues and suggestions:

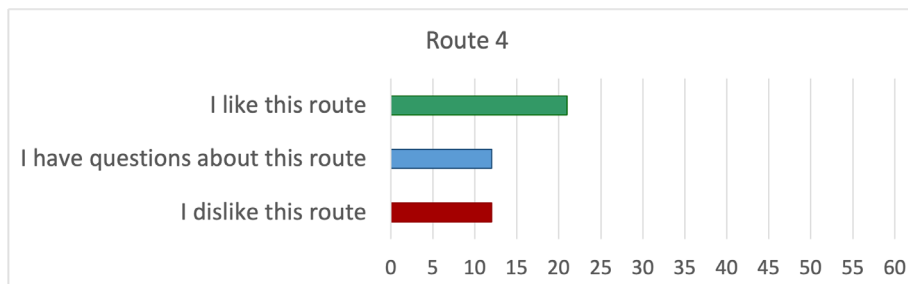
- Requests for a bus service on Circular Road
- Requests for greater coverage of Dangan
- The lack of a bus service in Murrough
- Frequency of the service, especially to Merlin Park Hospital

Circular Road

There were many requests for a bus service on Circular Road, with 70 submissions from individuals received. Some respondents noted that small buses serving the local schools do travel on Circular Road.

Planning for a new secondary school on the N59, just east of the junction with Circular Road, raised further interest in having a bus route in the area.

The team examined closely whether



it would be possible at this time to operate a regular bus route on Circular Road. Whilst there are examples of similarly sized vehicles travelling on Circular Road intermittently, a public bus route would need to be able to operate at all hours of the day, in both directions, with buses passing one another and other large vehicles reliably.

Circular Road is currently too narrow, presenting a risk that service interruptions would arise affecting passengers on Circular Road and the sections of the route before and after. In addition, turns by buses onto and

“Should serve the whole of Circular Road, it is very dangerous for people to walk.”

“There are at least 4 housing complexes with aging residents.”

off of Circular Road from the N59 would need to be studied and made safe.

However, there is also a need for additional buses on Route 4 on Upper Newcastle Road,

at peak times, to handle demand from university students. Adding frequency on the Upper Newcastle segment of Route 4 means that some buses will need to turn around during peak times, near the junction of Upper Newcastle and Thomas Hynes Roads.

The new secondary school is planned just west of that junction. If the new school can provide a turn-around, then the half-hourly peak-only service could be extended that far. With the addition of a crossing at the new school on Circular Road, this could bring half-hourly service within walking distance of the north end of Circular Road.

Action:

- No major changes to the network.
- NTA will work with Galway City Council to explore the possibility of a bus stop and turnaround for peak-only Route 4 buses at the new secondary school just west of the

Upper Newcastle Road/Thomas Hynes Road junction.

Dangan

Some people requested that more of Dangan to be served by bus.

Urban development drops off quickly as you travel away from the city and into Dangan along the N59. At present, there is only low-density development, without comfortable pedestrian crossings of the road (to allow people to use the bus for a return journey) and with no suitable location to turn around a bus beyond the planned secondary school referenced above.

The area is served by the Bus Éireann regional Route 419 which operates between Galway and Oughterard / Clifden. Improvements to services like the Route 419 are being considered through Connecting Ireland.

Action: No changes to the network.

Murrough

There were requests for a bus to serve the Murrough area, south of the Dublin Road.

The street network in Murrough is very disconnected, consisting mostly of

cul-de-sacs, so it is not possible to run a bus through the area without a very large deviation. Route 4 is already very deviating on the east side of the city, and adding an additional deviation into and out of the Murrough would further discourage through-passengers.

With improvements to street connectivity between Murrough and Renmore, or even someday between Murrough and Roscam, it is possible to imagine an additional route connecting areas on the east side of the city which would pass through Murrough.

Action: No changes to the network.

Frequency and Merlin Park

There were requests for an increase in the frequency of Route 4, in particular to serve Newcastle and Dangan, as well as Renmore and Merlin Park Hospital.

For Newcastle and Dangan, many comments about frequency referenced the large population in Newcastle and the need for students and staff to access the University of Galway north campus.

Comments about Merlin Park Hospital related to Route 4 being the only bus

“There is a large population in Newcastle. ... I know several people who would take the 404 if it was more frequent.”

“Is there an option to increase frequency at rush hours?”

to directly serve the site, with the Route 9 and 10 on Dublin Road a long walk away. Suggestions were made to deviate another bus route, such as the 10B, to also serve the hospital to provide additional service.

Relative to the rest of the city, and compared to areas with comparable public transport demand and need, a 30-minute frequency is appropriate for Renmore and Merlin Park Hospital at this time. With Routes 9 and 10 operating nearby, there are many buses per hour already planned to operate in this part of the city, within walking distance of many residents and destinations.

If future development increases the density of residents, workers or visitors in either place, or if crowding on Route 4 through either place becomes an issue, then NTA will consider funding a

“Although the proposed 10A and 10B routes pass the front entrance of Merlin Park, the distance from the front entrance to the existing bus stop on the campus is 750m.”

“Merlin Park Hospital which has ... buildings with long distances between them.”

higher frequency.

Because Merlin Park Hospital has only one entrance and exit, it must justify all by itself the level of service on the bus route serving it. (It would be too big of a deviation to add to a through-route, as it would make the journeys of all through-passengers much longer and more circuitous.)

Merlin Park is spread across a large area, with ample car parking for workers and visitors, and therefore it does not justify the same level of service that is provided in denser areas of the city where there are many workers and destinations within a short walk of each bus stop.

If in the future Merlin Park Hospital can be served by a bus route on the way to

other places (such as Doughiska) then it will be easier to justify a higher level of service because a larger number of people will make use of the service.

Alternately, if pedestrian walkways to bus stops due south of the hospital, on the Dublin Road, can be added, then many people will have very high frequency service to the hospital. This walk would be 200-400m rather than the 600-1000m walks necessary to reach Dublin Road via the main drive today.

Examining Route 4 on the other side of the city, the team reviewed the level of bus service in Newcastle in light of comments about crowding on the existing service. Given the high and growing demand from dense student housing, the network has been revised to add additional buses during weekday peaks, in school and university terms. These additional buses, increasing the provision from two to four buses per hour, will be on the route between Eyre Square and the junction of Upper Newcastle Road/ Thomas Hynes Road.

Actions:

- *In Newcastle, additional buses will run during the busiest weekday peak times.*
- *Route 4 will travel further east into the Merlin Park Hospital site, serving one additional stop on or near Merlin Park Lane, pending HSE approval.*
- *Potential to improve pedestrian links between Merlin Park and frequent routes on the Dublin Road should be reviewed at implementation stage.*

Route 7

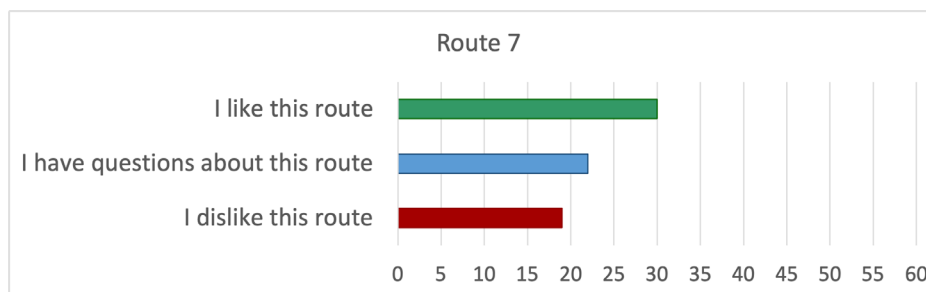
As illustrated in the chart at right, the response to Route 7 tended to be more positive than negative.

The feedback on Route 7 primarily relates to the following issues and suggestions:

- Buses no longer serving Upper Salthill Road between Kingston Road and Knocknacarra Road
- Bus stop on Lower Ballymoneen Road to no longer be served
- Existing 402 service not being replicated
- Route 7 deviating from Headford Road to serve Coolough Road and Crestwood
- The lack of a bus service on School Road in Castlegar
- Requests for a higher frequency service

Upper Salthill Road

There was dislike of the removal of the bus service on a section of Upper Salthill Road about 540m long, between Kingston Road and Knocknacarra Road, which is currently served by Routes 402 and 424.



Respondents mentioned people who live in the area as well as visitors travelling to and from the caravan parks. In the case of the caravan parks, the walking distance to stops would change only modestly. However for residents north of Upper Salthill Road, due to a severe lack of street connections in the area, some residents who are walking distance to a bus stop today would have a much longer walk to a stop on nearby Kingston or Knocknacarra Roads.

The team reviewed this feedback, weighed it in proportion to the effects

“It services dozens of houses and caravan parks.”

“It’s pivotal to my business of hikers coming to camp and tourists going to the city.”

on other people across the city, and revised the routes in the area to address multiple concerns. Specific to Upper Salthill Road, Route 7 would serve Upper Salthill Road all the

way from Salthill to Barna Road and then Cappagh Road, including this specific segment.

In a closely-related change, Knocknacarra Road (today served by Routes 402 and 410) would be served not by Route 7, as proposed in the Draft New Network, but by Route 10A (following a circuitous path between Taylor’s Hill Road and Salthill). The changes to these two routes are closely related, meaning that only in combination do they resolve the major concerns in the area whilst still offering services that are useful for large numbers of people and that operate efficiently.

Actions:

- *Route 7 is revised to serve Upper Salthill Road, between Kingston Road and old Knocknacarra Road.*

- *Knocknacarra Road is served by a changed Route 10A (between the city and Salthill) instead of Route 7.*

Lower Ballymoneen Road

There was a concern over loss of coverage on Lower Ballymoneen Road, with a bus stop that will no longer be served.

This relates to one bus stop on Lower Ballymoneen Road, located between Shangort Road and Barna Road, which is today on Route 402 but will no longer be served. Routes 7, 9B and 424 will be just to the north or south of this stop and will provide improved service in terms of frequency and destinations (reaching Gateway and Salthill as well as the city centre). Adequate coverage in the network.

The bus stop in question is just 50m north of Barna Road, and therefore likely ~100m walk from the stops that will be placed for Routes 9B and 424, depending on the precise location of those stops.

Action: No changes to the network.

Existing Route 402 and Schools on Taylor's Hill Road

A number of respondents were unhappy that the existing Route 402 pattern, which connects Knocknacarra and Shangort Roads to Taylor's Hill Road, is not replicated in the New Network. Reference was made to children living in Knocknacarra and traveling to St. Endas, Salerno and Taylor's Hill schools.

The residential area in question was well covered by service in the Draft New Network, in many places with better frequency than the existing routes offer. However, this specific journey to schools would become more difficult as it would no longer be possible to travel directly east on Kingston Road, and instead pupils would have to travel north and interchange at Gateway, or travel towards Salthill and interchange there. These interchanges would not always be made to a frequent route on which a bus is coming soon.

To address these many disrupted school journeys, as well as other concerns about the structure of the network on the west side of the city, a set of interrelated changes were made.

"Users of the existing 402 service in the west of the city will be disadvantaged."

"Not only do we lose bus (402) but the nearest replacements ... are still at 20 min intervals."

Most relevant for these particular concerns, Route 10A would follow a circuitous path between the city centre and Salthill, going via Taylor's Hill Road, Kingston Road, all the way to Knocknacarra Road, then Upper Salthill Road to end in Salthill. This will put many (though by no means all) of the households near Knocknacarra, Barna and Shangort Roads within walking distance of bus stops with service directly to Taylor's Hill Road schools.

The change to Route 7, described in the previous section, is closely-related with this change to Route 10A.

Action: Change Route 10A to connect Knocknacarra and Kingston Roads to Taylor's Hill Road and Salthill.

Coolough Road and Crestwood

To the north of the city centre on Headford Road, Route 7 follows the path of the existing Route 407, deviating from Headford Road to serve Coolough Road, Crestwood and Tirellan Heights, before re-joining Headford Road. Some respondents were pleased that these smaller roads would continue to be served, whilst some respondents were unhappy that the circuitousness of the route would be maintained.

This area is developed with many houses, though at low densities which results in a smaller number of potential bus passengers near each bus stop. Because of a lack of street connections, and the serpentine road patterns, walking distances to the Headford Road can be much longer than as-the-crow-flies distance. The number of boardings on the smaller roads is modest but high enough to maintain some service there, and there is not currently a better option than deviating service off the main road.

In the future, if additional vehicles and service area available to be added to Route 7, it may be possible to split Route 7 into two branches, one branch

every 30 minutes circulating on the smaller roads of Tirellan Heights whilst another branch every 30 minutes goes straight out the Headford Road to Castlegar.

Action: No changes to the network.

School Road in Castlegar

Requests were received for a bus to serve School Road in Castlegar. The development along School Road is rural in form, with very low numbers of residents per kilometre and therefore too low of demand to justify a regular bus service. The road itself is not capable of handling a two-way regular bus service.

If in the future a road built to urban standards connects the Tuam Road to Castlegar, or Ballybrit to Castlegar, that would be a promising route for a bus service. It is unknown whether in that future scenario the connecting road would be the existing School Road or some other road between the two areas.

“Why School Road ... is not proposed as a connecting route? It is the link road between Tuam Road and Headford Road.”

Action: No changes to the network.

Frequency

Based on the existing reliability problems on Route 407 on Headford Road (which are not unique to Route 407) there were requests to increase the typical frequency over the every 20 minutes given in the Draft New Network. Residents were concerned that their actual maximum wait time would exceed 20 minutes because of late-arriving buses.

At present the scheduled bus service on Headford Road runs every 30 minutes. In the Draft New Network Route 7 will run every 20 minutes. We expect that bus reliability will improve with the implementation of Cross City Links, Sustainable Transport Corridors and other BusConnects strategies in Galway. For the time being, the improvement of the frequency from every 30 to every 20 minutes is appropriate in comparison with service levels in other comparable parts of the city.

Action: No changes to the network.

Routes 9, 9A and 9B

As illustrated in the chart at right, the response to Route 9 (and its branches, 9A and 9B) was mostly positive.

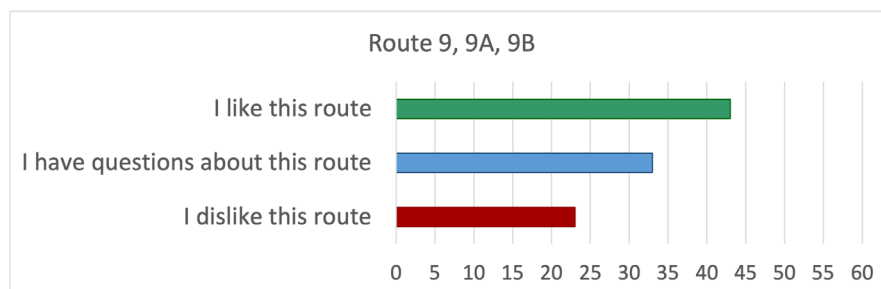
People were pleased at the high, 10-minute, daytime frequency of Route 9, and that it will be a 24-hour service. This was especially welcomed by those who work shifts early morning, late evening and weekend shifts.

The feedback on the proposed Route 9 primarily relates to the following issues and suggestions:

- Running the bus through Parkmore Industrial Estate, rather than stopping near the entrance
- The 9B taking a circuitous route through Knocknacarra to reach Upper Ballymoneen Road.
- Extending more service from Gateway Retail Park towards Cappagh Road to provide a greater frequency on Western Distributor Road.

Parkmore Circulation

In Parkmore, regarding both proposed Routes 1 and 9, some people said that it would be useful to have the buses serve the roads inside of the industrial



estate, rather than just the entrance.

The road network in Parkmore is not well suited to through bus movements at present, due to most roads being cul de sacs. However the City Council is soon to implement new road connections that will allow buses to drive in a one-way loop in Parkmore. This will bring bus stops slightly closer to some employers, though it will also increase time on the bus for passengers, and passengers may need to walk farther (to the other side of the loop) in order to catch the soonest-departing bus.

To incorporate this planned one-way loop route, Routes 1 and 9 have been modified in the Final New Network.

As a note of caution to the public about the addition of this one-way loop at the ends of Routes 1 and 9, the loop cannot be extended or lengthened by much to cover future

development in the area. If Parkmore grows northwards or outwards, making the one-way loop larger and more circuitous would add more time on the bus, traveling in a circle, for everyone commuting to and from

Parkmore. It would also lengthen walking distances to the soonest-departing bus, by requiring passengers to walk to another side of the loop (or, if they board the bus where they alighted, to sit on the bus during the driver break at the terminus). Therefore in the long term the routes will have to return to linear, two-way service in order to be lengthened to reach new development whilst still offering workers in the older sections of Parkmore a good service.

Actions:

- *For the short term, Routes 1 and 9 are revised to make one-way loops in Parkmore in the infrastructure currently planned.*
- *In the long term, further growth at the edges of Parkmore may require Route 1 or 9 to return to two-way linear service, so that one or both*

routes can be lengthened to reach the additional development.

Route to Upper Ballymoneen Road

Among responses, there was a lot of positive feedback regarding the provision of a bus service on Upper Ballymoneen Road with requests that its implementation be as soon as possible. There were also concerns that routing the bus through Knocknacarra, via Clybaun Lower and Shangort Road, to reach Upper Ballymoneen Road may make the service unattractive.

(We should note that to serve Upper Ballymoneen Road, a turnaround and small driver rest facility will need to be provided. Provision of the service is therefore contingent on the turnaround and rest facility.)

In Knocknacarra generally, there is so

“While frequency & access to buses is critical, so is trip duration.”

“People’s time is valuable to them, this route is just too long.”

much development on north-south roads, compared to the east-west roads that lead into the city, that it forces a choice in the design of the network:

- Either routes can divide into many branches to go down the north-south roads, but at poor frequencies;
- Or service can be concentrated into fewer routes to offer decent frequencies, but then some routes need to follow a circuitous pattern in order to cover the north-south roads.

For the New Network, the design team chose to offer good frequencies, with the consequence that Route 9B (and Route 3) are somewhat circuitous in Knocknacarra. This will result in faster overall journey times, because the circuitousness, while annoying, adds fewer minutes of journey time than would be added by longer waits for less frequent bus routes.

In addition, many people on the north-south roads want to be connected to local shopping areas (such as on Shangort Road and at Gateway). Achieving this requires some circuitousness within the area.

For these reasons, Route 9B (and 3) will be maintained with their 20-minute frequencies and their circuitous routes, in the Final New Network.

Action: No changes to the network.

Western Distributor Road

There were requests for an increase in bus frequencies along Western Distributor Road, from the junction with Clybaun Road towards Cappagh Road.

The team reviewed the network in this area and with the proposed frequency is considered adequate given the low density of development, the poor street connections, and the lack of mixed land uses along the Western Distributor Road. The level of service offered is consistent with what is offered in other comparable areas of the city.

Action: No changes to the network.

Route 10, 10A and 10B

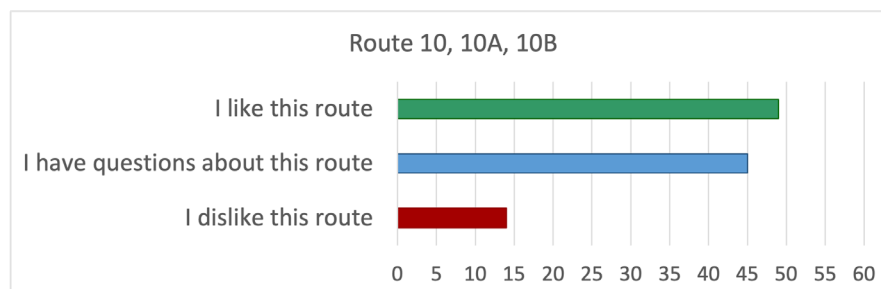
As illustrated in the chart at right, the response to Route 10 (and its branches, 10A and 10B) was mostly positive.

The feedback for Route 10 primarily relates to the following main issues and suggestions:

- A higher frequency of service to Galway Clinic
- Retaining a link from Dr. Mannix Road to Salthill
- Removal of bus service on Kingston Road, west of Threadneedle Road
- Service to Oranhill and the Lidl supermarket
- Service to the Oranmore train station
- Service to Oranmore Business Park and Deerpark Industrial Estate
- Request for routes between Oranmore and the Parkmore and Ballybrit industrial estates.

Galway Clinic

Feedback on Route 10B serving Roscam and the Coast Road was positive. While it was noted that the level crossing of the railway may cause



some delays to services, a bus service on the Coast Road was very much welcomed.

Service improvements to Oranmore were also welcomed by respondents, in particular the higher frequency and extended coverage of the Draft New Network. There were some concerns that traffic on the Coast Road would cause delays for Route 10B buses.

Galway Clinic is to be served by the Route 10A on its way to Oranmore. Some respondents queried whether diverting Route 10A to serve the clinic was 'worth it'. Routes 9 and 10B will stop on Dublin Road, near Doughiska Road, from which passengers could walk to Galway Clinic, though it is a long walk of 800m. Some other respondents requested that more buses be deviated in order to go up and back on the Galway Clinic drive.

It's unfortunate that the diversion to

Galway Clinic is needed at all, as it consumes time for through-traveling passengers and expense for the operator. However Galway Clinic is an important destination for social reasons. Given that it is at the end of a cul de sac the best solution is to deviate a route to reach it. The Route 10A is best-suited to making this deviation.

Action: No changes to the network.

"... Could take passengers from ... Roscam ... for match days and leisure in Salthill."

"I like this route connectivity for the Coast Road."

"The Galway Clinic has been reliant on travel by private car ... with only one bus route (No. 404) directly serving the site."

"I hardly ever see anyone getting on or off the bus there and it adds a significant delay to the route"

Doctor Mannix Road

On Dr. Mannix Road today, service is offered in a one-way loop, every 20 minutes, to Threadneedle Road, then Salthill, then on to the city centre.

In the Draft New Network the service was proposed to be less frequent – every 30 minutes – but to operate in both directions. It would go to Gateway and the City Centre but not Salthill. (There would also be a frequent service on Threadneedle, to Salthill.)

Respondents expressed concerns about many of these changes, especially the reduction in frequency and the loss of service to and through Salthill.

A change to Route 10A can help to address some of these concerns. Route 10A on Taylor’s Hill Road was changed in the Final New Network to end in Salthill (via Kingston Road). Some residents north of Dr. Mannix Road can therefore reach a bus that will take them to Salthill (without an

“This is important to the elderly and those with mobility problems who use the bus.”

interchange) by walking northwards instead of southwards, to get the 10A on Taylor’s Hill Road instead of the 10B on Dr. Mannix Road. Residents towards the western part of this area can walk a short distance west to Threadneedle Road to catch a frequent bus service to Salthill (or Gateway).

The residents for whom the journey to Salthill would be worse-served in the future are those in a small area around the junction of Dr. Mannix Road and Dalysfort Road, for whom reaching Salthill would either require a longer walk down the hill or an interchange between Routes 10B and Route 1. The team tested multiple changes to the network to try and improve this journey for this group of people, but every possible alternative would worsen journeys for a much larger group of people. Route 10B was left unchanged as it seems to offer the best overall outcomes for most people.

Action: Route 10A (on Taylor’s Hill Road) changed to end in Salthill. No changes to Route 10B.

Kingston Road

Negative feedback was received regarding the proposed removal

of a bus service on Kingston Road, between Threadneedle Road and Knocknacarra Road. Kingston Road is currently served by Route 402.

Galway City Council has recently built pedestrian connections between Kingston Road and the Western Distributor Road, and we expect that most people will choose to walk northwards rather than southwards to reach the very frequent service on Western Distributor Road. However the small number of people who live closer to Kingston Road than to Western Distributor Road may prefer a bus stop a short distance away, even if it is a worse frequency.

Taking on board these comments as well as other concerns with other routes in Knocknacarra, the team made a set of interrelated changes to address many of the concerns. As part of this interlinked package of changes, Kingston Road can be served with a Route 10A bus every 30-minutes, which is on a circuitous path between Taylor’s Hill Road and Salthill. This

“This adds a significant distance and subsequent hardship for elderly citizens.”

adds one bus and operating cost but, together with the changes to Route 7, keeps service close to more existing passengers than what was previously proposed.

The Salthill location of the Route 10A turnaround and driver break facility will need to be established for this change to be implemented.

Action: Route 10A has been adjusted to serve Kingston Road, connecting it to Salthill.

Oranhill

Requests were received to extend Route 10 further into Oranmore so as to serve new residential development in Oranhill as well as the Lidl supermarket on Main Street.

The routing of buses in Oranmore was re-examined and changes decided in order to extend it to the Lidl, which is a valuable destination for bus travel within Oranmore.

“A new bus stop installed on Main Street ... would allow bus users to visit the shopping centre more easily.”

This revised pattern and the higher frequency in Oranhill adds one bus and additional expense for operation of the route. It is dependent on two changes to local streets:

- The completion of the street connection between Oranhill Drive and Coill Clocha, and
- Establishment of a layover space for northbound buses near the Lidl, at Main Street, where the bus can go out of service and the driver can take a break.

Action: Route 10 extended to the Lidl in Oranmore.

Oranmore Train Station

The Draft New Network included Route 10B on the Coast Road, running past Oranmore Train Station. Some respondents have requested that the buses divert off the Coast Road to stop directly outside the station, rather than having passengers board/alight further away on the Coast Road.

Diverting the bus from the Coast Road into the station would extend journey times for through-passengers, of whom we expect there to be many.

Galway County Council are planning

“I would like to see a stop added at the Oranmore train station so I do not need to drive from Oranmore to the train station each day and struggle to find parking at the station.”

“Why doesn’t the bus go into the Oranmore train station?”

improvements to the Oranmore Station, including a footpath that will offer a direct walk of 200m through a greenspace between bus stops on the Coast Road and the train platform. This will maintain the Route 10B as a direct and fast option for people traveling between Oranmore and the city, while asking only a short walk for those reaching the train station. In the short term, the bus will need to stop near the existing roadway, and the walk to the train platform will be about 370m, but in the long term the County Council is planning for the shorter and more direct footpath.

Action: No changes to the network.

Oranmore Business Park and Deerpark Industrial Estate

At present, people using the bus to access Oranmore Business Park and Deerpark Industrial estate have to board and alight at the bus stop on Station Road, 1 km or more from their destination. Requests were received for a bus stop located closer to these destinations or within the industrial estates themselves.

A bus stop will be provided closer to Oranmore Business Park and Deerhill Industrial Park, likely at the roundabout just south of the entrances, on the R446. The exact location of the stop is to be determined and will require further planning by Galway County Council and NTA.

It is not advisable to send the Route 10A into the estates themselves because they offer no through roads. The result would be additional detours on Route 10A, threading its way into and out of the estates, discouraging through-passengers who are travelling

“Currently Cisco staff that use the bus service have a 1km walk to the stop.”

between Oranmore and the city. Therefore Route 10A buses will stop as close as possible to the estates whilst still providing a direct route to Oranmore, and improving pedestrian access those bus stops will be a priority.

Action: A bus stop is planned in the area of the roundabout, possibly on R446 just west of the roundabout. The exact location and infrastructure changes will be defined during implementation.

Routes to Business Parks

There were requests for buses to link Oranmore directly to Parkmore and Ballybrit industrial estates.

The major challenge for planning an efficient and useful bus network for Galway is the lack of road connections not only *to* but also *through* developments, especially the industrial estates named. If in the future it is possible to send buses through these estates and on to other places, without major deviations or loops, that will make new routes possible.

For the short term, the New Network will help people travel between these estates and residential areas

“I would like to see Oranmore to Parkmore served better.”

by offering good frequencies and opportunities for interchange. Specific to Oranmore residents, they will be able to interchange from Route 10 to frequent Route 9 buses at Doughiska Road to reach Parkmore. They will also be able to interchange from Route 10 to either Route 1 or Route 3 buses to Ballybrit, at Wellpark and Dublin Roads.

Action: No changes to the network.

Route 424

As illustrated in the chart at right, Route 424 raised many questions. The rest of the responses were mostly positive.

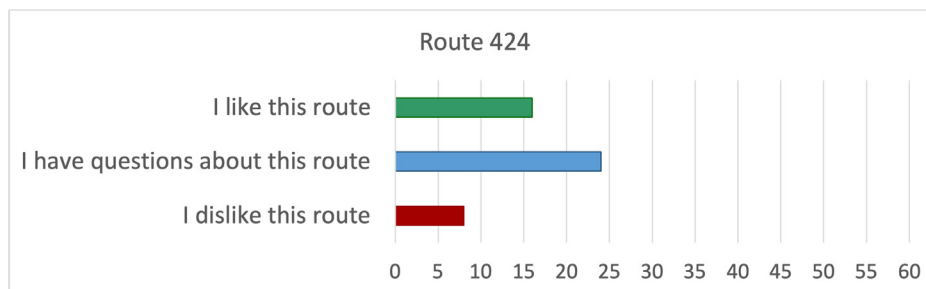
The feedback for Route 424 primarily relates to the following issues and suggestions:

- Route 424 no longer going via Salthill
- Overcrowding on the buses to/from Bearna

Salthill

Some respondents welcomed the routing of the 424 bus via Gateway Retail Park and the faster path into the city centre, whereas others requested that the link to Salthill be retained.

Residents of Bearna and towns further east are understandably interested in having routes both to the major destinations of Gateway, UHG, the University, and to Salthill. And one route that goes to the city centre the faster way (via Seamus Quirke and the future Cross City Link) while another goes the slow way (via Salthill and Father Griffin Road).



“It is recommended that every 424 ... goes through Salthill to cater for people who attend events in Salthill.”

“The proposed changes for the route 424 are an improvement from going via Salthill to Ceannt Station only.”

“The 424 is delayed in the morning because it is routed along Salthill Promenade. But it would be better if not every 424 service avoided Salthill Promenade.”

Unfortunately, offering two different routes that would take these two different paths would mean offering half as much frequency on each route. This would greatly increase people’s journey times. The best way

to improve journey times in this situation is to improve frequency on one single route; send it directly to the biggest destinations that attract the most people; and give it priority to make the

buses reliable and fast. This is the proposed Route 424.

People traveling from Bearna to Salthill will therefore interchange either to Route 7 on the Bearna Road or to Route 1 at Gateway. BusConnects Galway includes improvements to reliability, real-time information and passenger waiting facilities, which together should make these interchanges fairly fast and comfortable. The result will be a more frequent and simple overall network for Galway, and a more frequent and fast route from Bearna to the university, UHG, the city centre and Ceannt Station.

Action: No changes to the network.

Concerns About Crowding

Reference was made to overcrowding on the existing 424 service. The Route 424 in the New Network, however, is planned to have many more daily buses than the existing service, with consistent frequency of one bus per hour all day and week long, and two buses per hour during morning and afternoon peaks.

The increase in frequency on Route 424 is meant to alleviate existing crowding as well as to make the service more useful for people from Bearna and towns further east.

The Connecting Ireland Programme will be continually monitoring service provision beyond to Bearna to Carraroe, Lettermullen, Carna etc. At the implementation stage, the demand for these services will be observed, note taken of any crowding, and if additional capacity is needed it will be provided.

Related to these concerns, there will need to be special management of capacity on Route 424 buses, so that they are not over-used for short trips within Galway city thereby crowding-out passengers who would like to use them to go beyond the city.

On the existing Route 424, no stops are made between Bearna and Salthill. However, in the New Network, it will be valuable to permit interchanges between Routes 7 and 424 on Bearna Road (so that people arriving from the east can interchange to reach Salthill, if the timing of the interchange is better there than at Gateway). It will also be valuable to allow the few residents who are near Bearna Road but far from either Route 9A or 9B to use Route 424 to reach Gateway and the university area, and this is another reason for the 424 to make one or two local stops in both directions on Bearna Road. (People boarding Route 424 along Bearna Road may not always get a seat, but their journey will be fairly short.)

For Route 424 outbound buses, it will be important that they not fill up with passengers from the city centre who could instead use Routes 1, 3, 4 or 9 to reach their destinations on the east side of the city. For this reason, Route 424 may be “pick up only” between the city centre and Gateway, making it useful only for longer journeys out of the city centre. Alternately, it may stop at only a few widely-spaced bus stops.

NTA and Bus Éireann will work

together to develop the stopping pattern and boarding rules to manage capacity on the Route 424 so that capacity and seats are prioritized for customers making long journeys.

Actions:

- *No changes to the network.*
- *Some local stops by Route 424 will be planned on Bearna Road, for interchanges with Route 7.*
- *Special effort will be made by NTA and Bus Éireann to manage capacity on Route 424 so that capacity for longer journeys is the priority.*



5 Comparing the Existing and the New Network

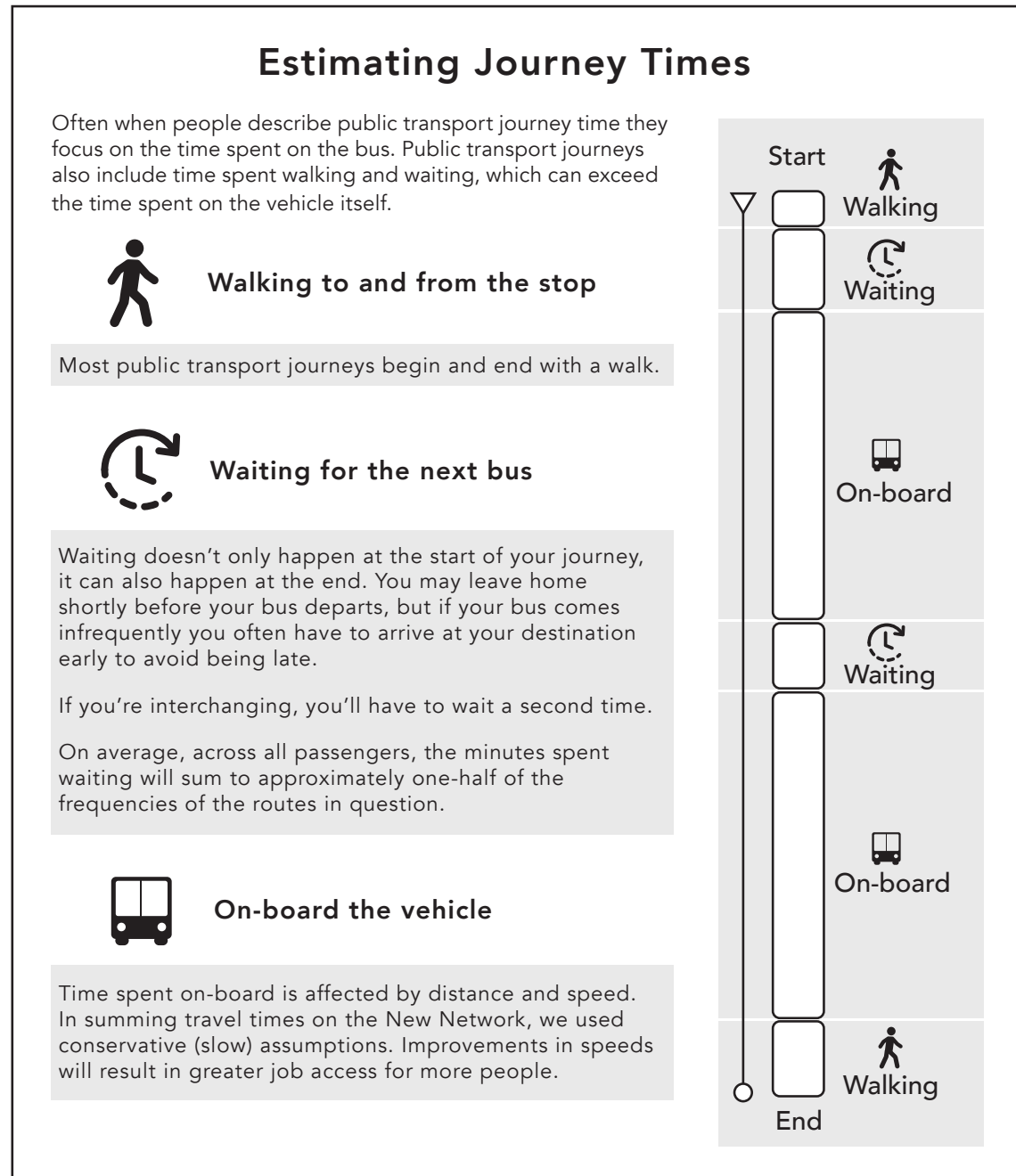
Changes in Access to Opportunity

As described in the first chapter, **access** measures the usefulness of a public transport network for any person who has a limited amount of time to spend traveling. Access via is affected by:

- **How many destinations are near public transport**
- **How long a person has to walk** to and from service
- **How long they have to wait** for the service
- **How far they have to travel** in the public transport vehicle
- The **speed** of the vehicle
- **How long they have to wait to interchange** between services

These elements of public transport journey time are summarised in the graphic on the right.

This access analysis uses job location data from the Census. Whilst jobs are important, other types of trips are important as well. Areas with jobs are often also areas with shopping, health services, social activities, restaurants, and other sources of opportunity. Access to jobs can therefore be used as an approximation of access to other types of services and activities.



Improved Access from Example Locations

Maps on the following pages show how access will change with the New Network, compared to the existing (2022) network, from six example locations. The maps are meant to answer the questions:

- *How many places could I reach from each place, in a reasonable amount of time?*
- *How will this be different from where I can go today?*

The reader is encouraged to make their own map for any place in Galway, Oranmore or Bearna, using the [online network map](#).

Assumptions

You're walking and using public transport. These maps illustrate improvement in the bus network, comparing the New Network to Existing. They are not comparing public transport to a car or bicycle.

You walk at a moderate speed. The maps assume a walking speed of 1 metre per second, which is a bit slow for an able-bodied and unencumbered adult. This reflects things that can slow people down, like street crossings.

You wouldn't walk for more than

30 minutes total, in any one-way journey. Walking trips are considered for all destinations which are within a 30-minute walk. Some of these destinations are faster to reach by bus, whilst others might be reached fastest by walking all the way. For destinations outside of this 30-minute "walkshed", we assume that you wouldn't walk all the way, and that a bus is definitely required.

Most bus stops will be located in the same places as they are now. In cases of new or different streets being served, we've made some assumptions about where stops will be located. Stop locations in the city centre and on nearby roads will also change as a result of Cross-City Link.

Aside from those cases, most stops have been kept the same between the two networks.

On average, your wait to use a bus will equal half its frequency, for the reasons explained on the previous page. For example, if the bus comes every 15 minutes, you'll wait 7.5 minutes on average. If it comes every 30 minutes, you'll wait 15 minutes on average.

Buses will travel at similar speeds

as they do now. Cross-City Link will increase bus speeds, but in all of the maps and analysis in this report today's speeds were assumed. Cross-City Link will result in even larger gains in access than reported here.

You will interchange if it makes your trip quicker overall. BusConnects Galway will include the elimination of interchange fares between urban buses.

If you do interchange, you will wait for the second bus as well. As with the first bus, the assumed wait time is one-half the frequency of the second bus route, reflecting the average time required to interchange.

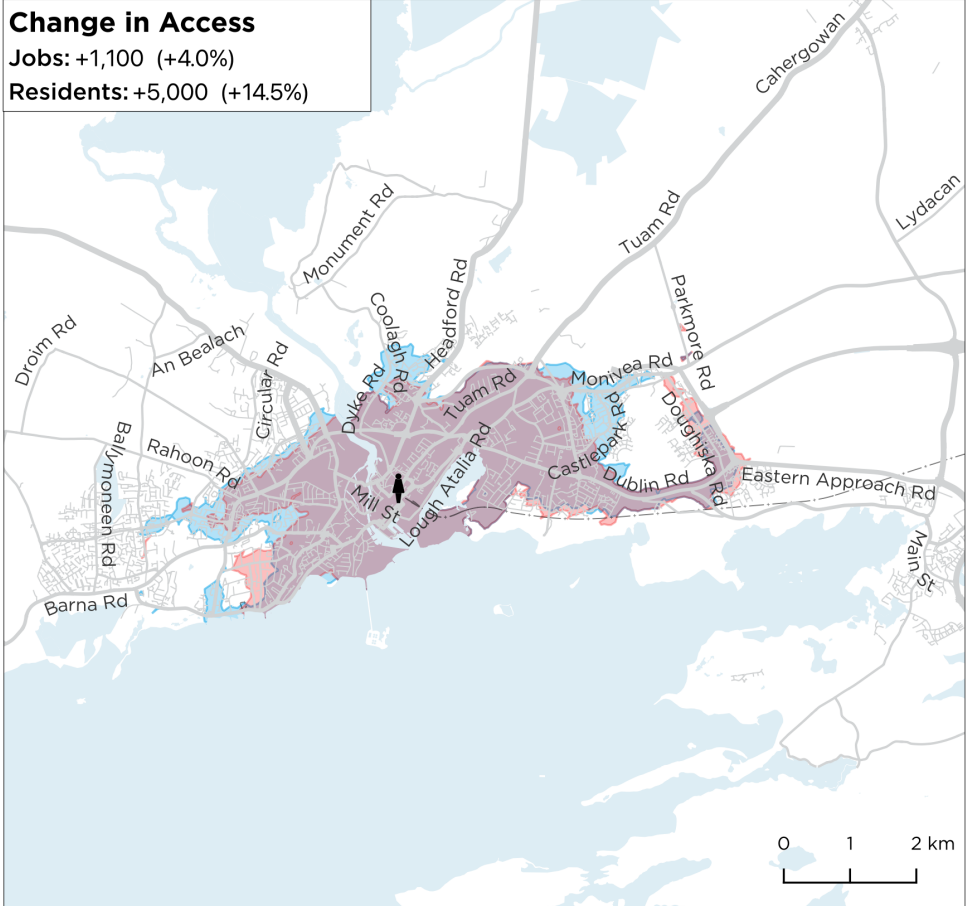
You're travelling on a weekday, in the daytime. Similar maps exist for Saturdays and Sundays, and they are provided in Appendix B. To control document size, this appendix is in a separate file.

Eyre Square

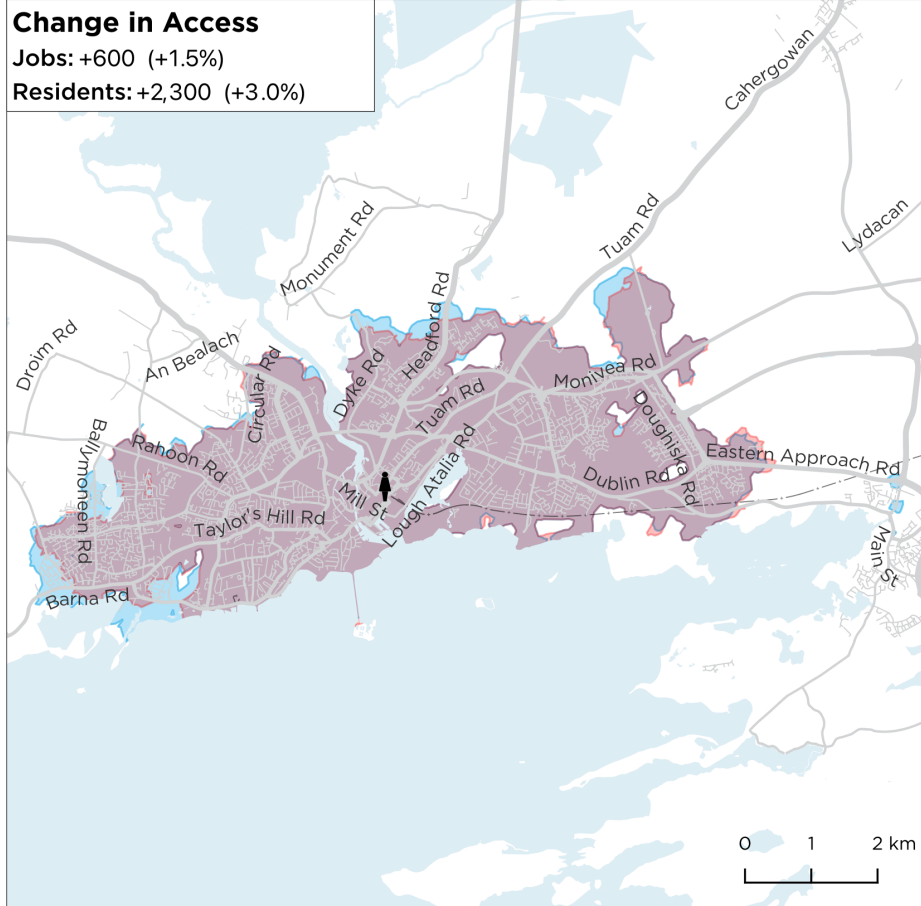
How far could I travel from
📍 Eyre Square
 in a reasonable amount of time?
Weekdays, in the Daytime



30 minutes



45 minutes



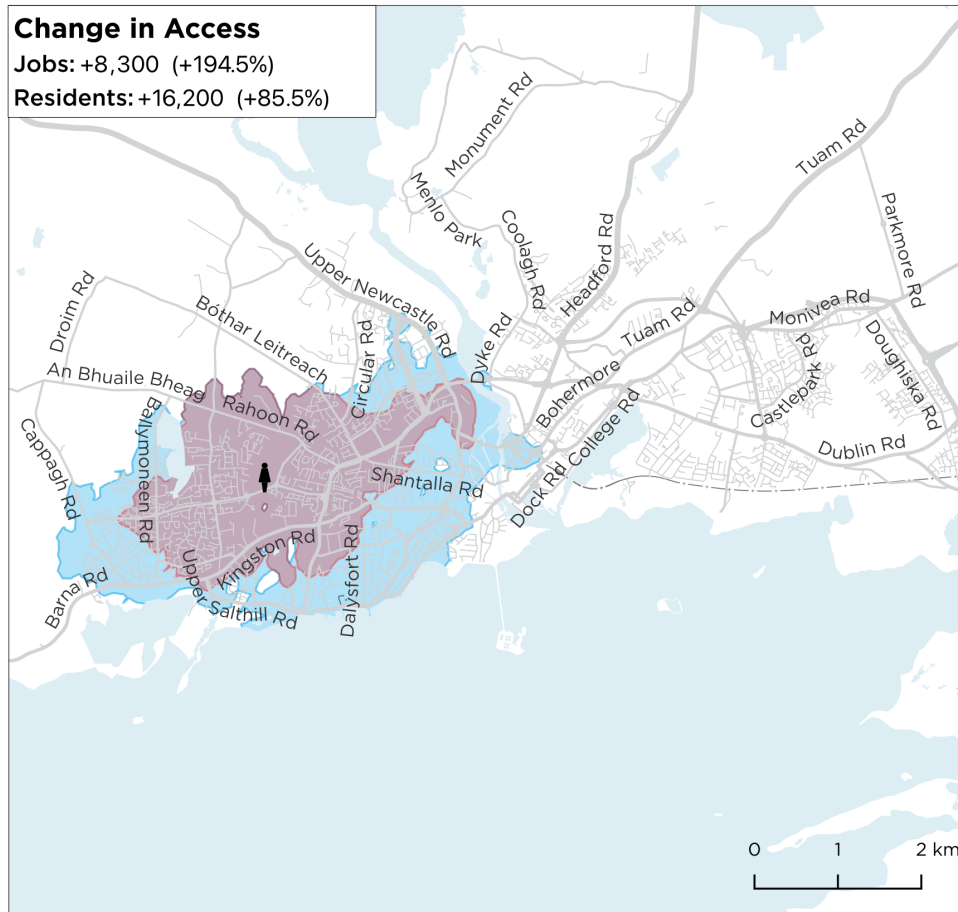
Gateway Shopping Centre

How far could I travel from
 📍 **Gateway Shopping Centre**
 in a reasonable amount of time?

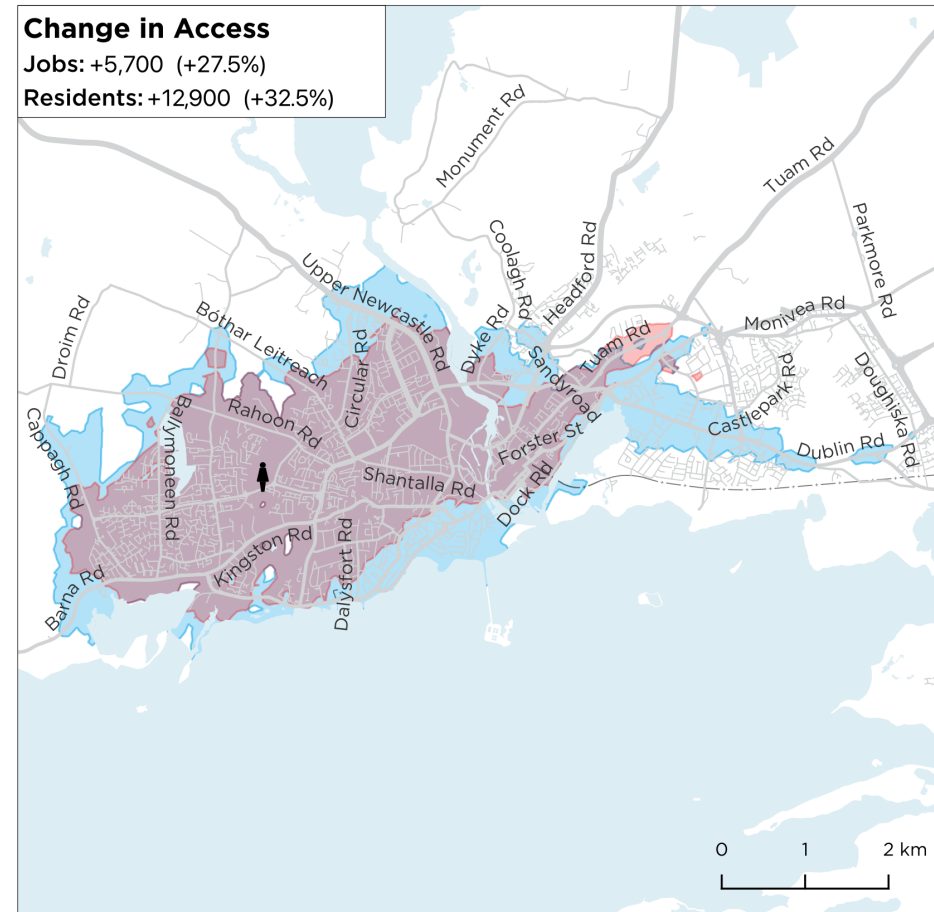
Weekdays, in the Daytime



30 minutes



45 minutes

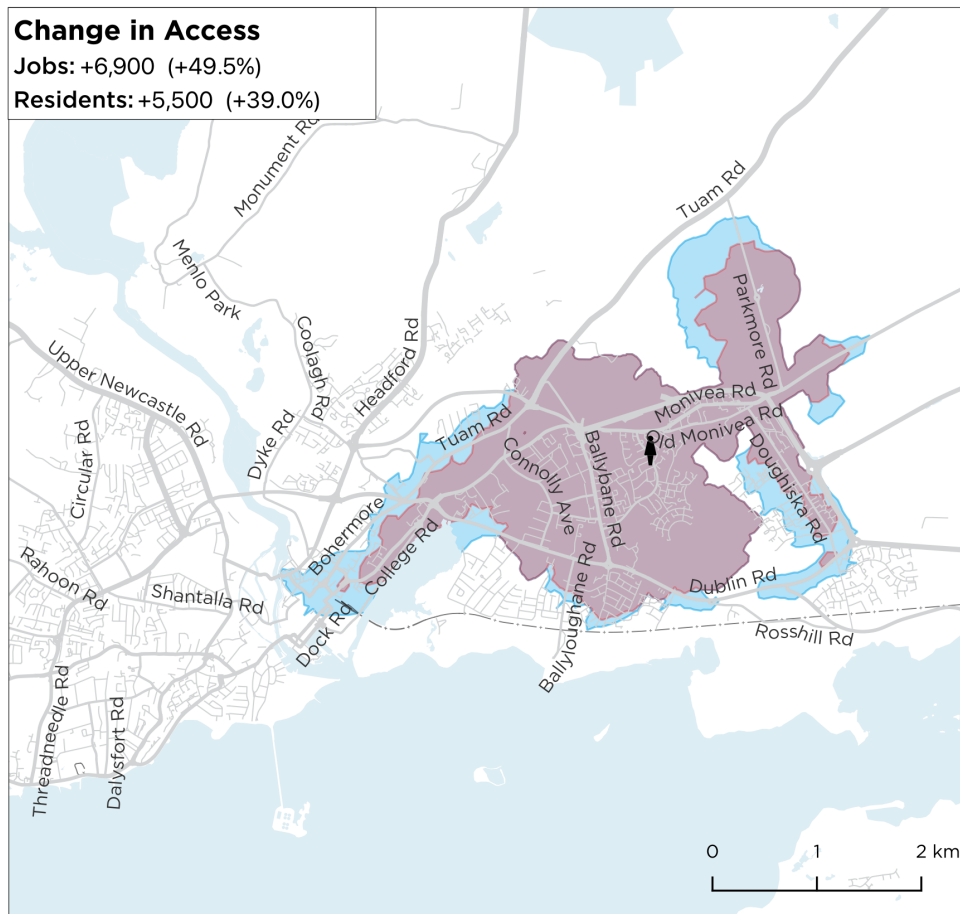


Castlepark

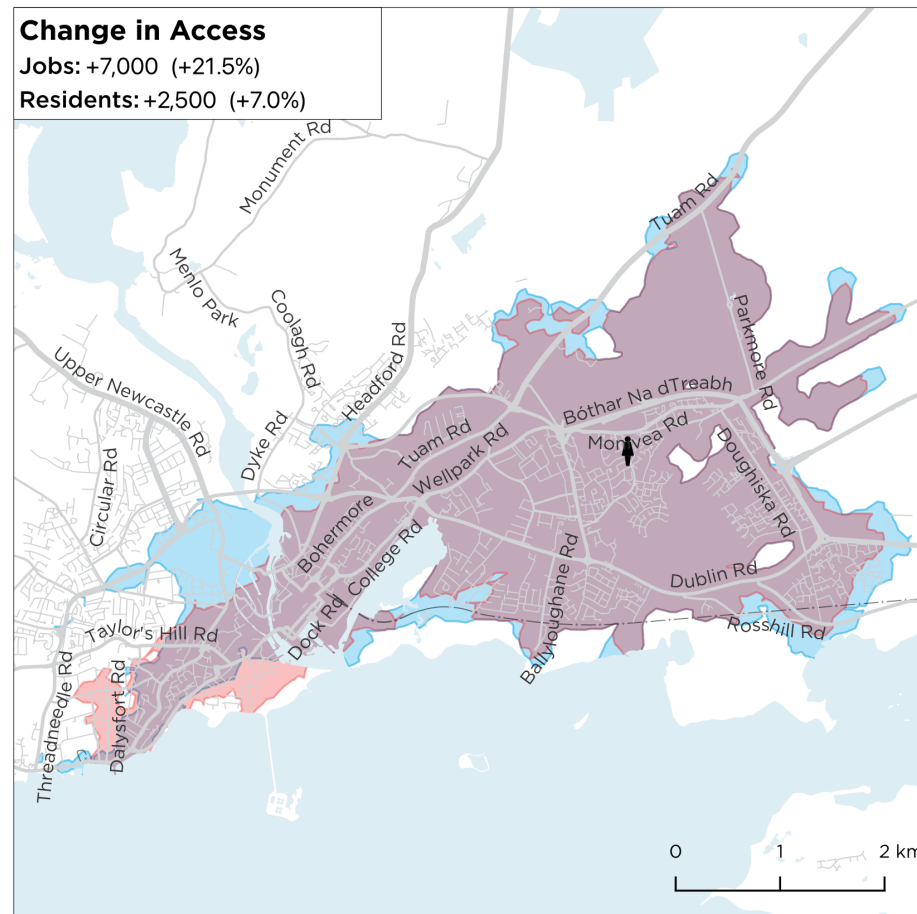
How far could I travel from
↑ Castlepark Road
 in a reasonable amount of time?
Weekdays, in the Daytime



30 minutes



45 minutes

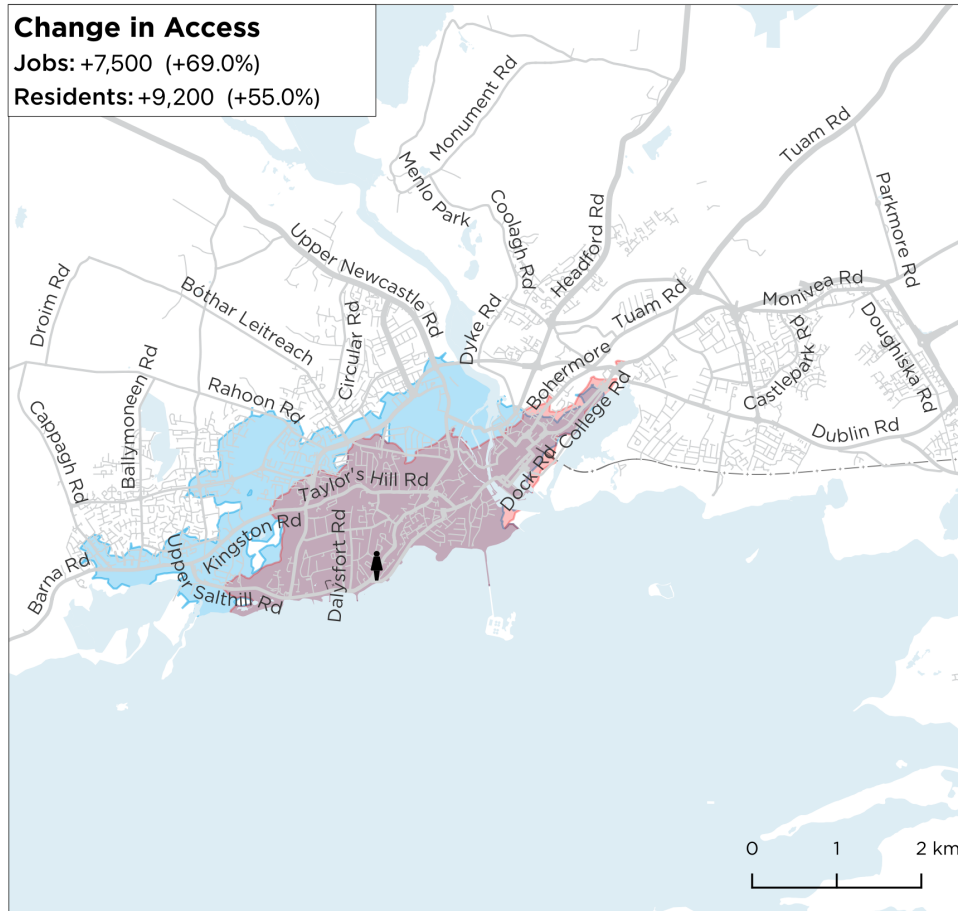


Salthill

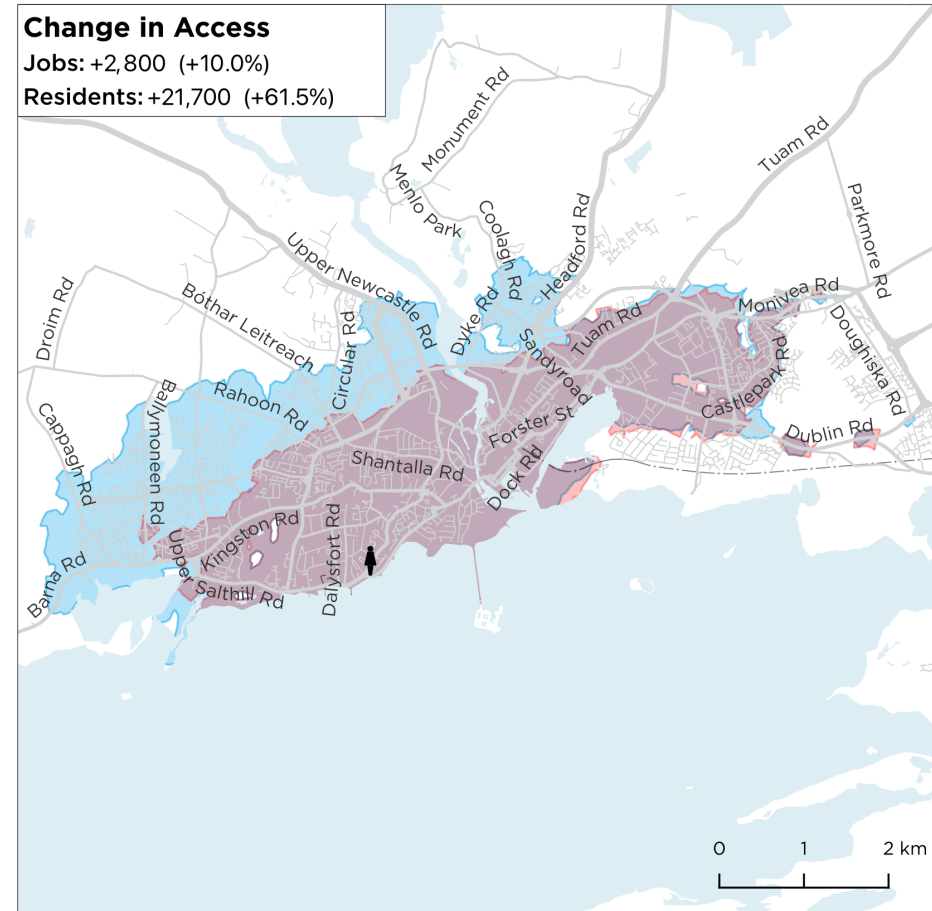
How far could I travel from
↑ Salthill
 in a reasonable amount of time?
Weekdays, in the Daytime



30 minutes



45 minutes



Increases in Access Citywide

As described in the first chapter, access improvements from the New Network have been analysed for:

- Door-to-door journeys of 30 minutes or less, and 45 minutes or less.
- Rush hours and midday.
- Weekdays, Saturdays and Sundays.
- All residents and all jobs.
- People living without a car; residents of areas with high social deprivation; and young, unemployed, and senior residents.

Analysing these variations and sub-populations are important to describe the way the network will serve the diversity of trips Galwegians take. However, all this variation generates myriad results, and only some of the resulting maps are presented in the body of this report.

Whilst jobs are important destinations on their own, they also correlate with the places people go to shop, socialise, access services and more. They therefore provide an approximation of access to many different kinds of opportunity.

Weekdays

As described in the first chapter, the New Network will improve access for residents in these ways:

- The average resident could access **46% more** jobs within 30 mins. or less, and **16% more** within 45 mins.
- 56% of residents will be able to reach **more** jobs within 30 mins. or less, and the other half of residents will experience **no change** in job access.
- 87% of residents will have access to **more** jobs within 45 mins. or less. 12% of residents will experience **no change**, and only 1% of residents will **lose** access to as many jobs within 45 minutes.

The New Network will be beneficial specifically for **residents in areas of social deprivation**:

- Residents in disadvantaged areas will have access to 59% **more** jobs within 30 mins. on weekdays, 72% more on Saturdays, and 46% more on Sundays.
- The number of disadvantaged residents who might lose access to jobs is too small to pinpoint.

Weekends

As described in the first chapter, access will be improved on **Saturdays and Sundays** as well:

- The average resident will have access to 49% **more** jobs within 30 mins., and 16% more jobs within 45 mins., on Saturdays.
- On Sundays, the average resident could reach 54% **more** jobs within 30 mins. and 30% **more** within 45 mins.

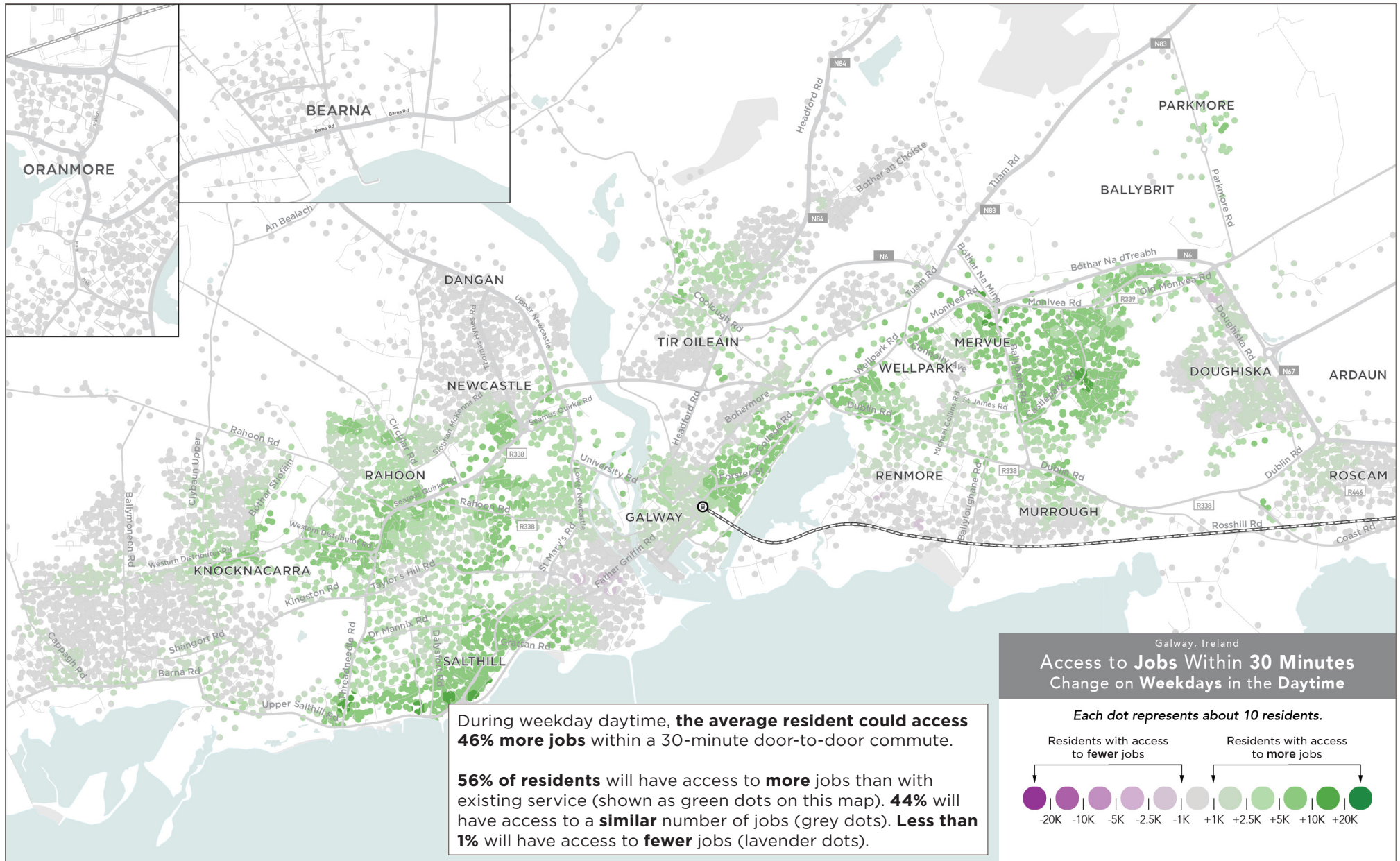
The maps on the following pages show changes in access on weekdays for each local area in Galway, Barna and Oranmore.

- The first map shows job access change based on where residents live.
- The second map shows the results of the same travel time analysis, but the change in access between residents and jobs is mapped based on where the jobs are located.

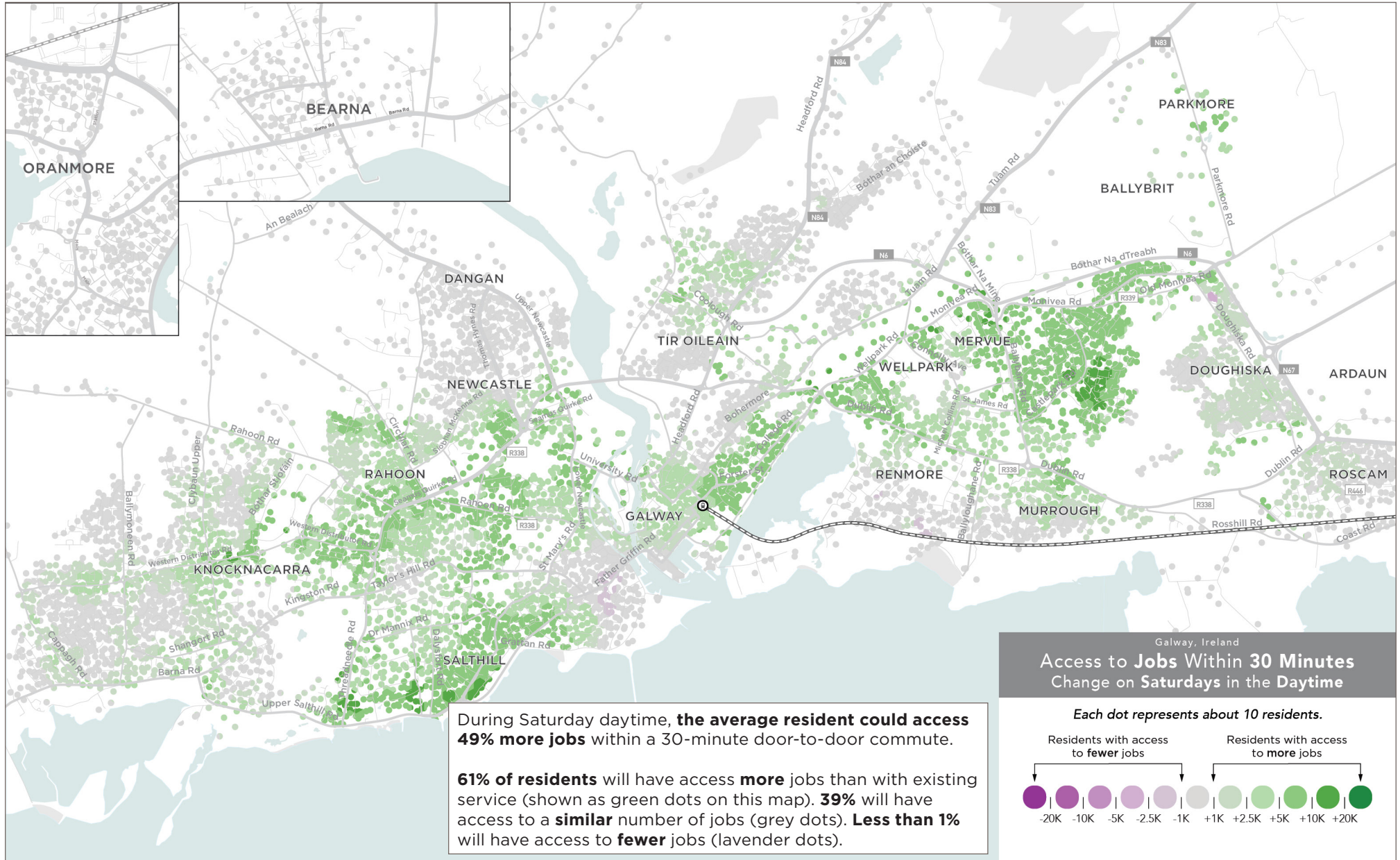
Additionally, maps showing changes in access on Saturdays and Sundays are in the section beginning on [page 79](#).

Maps showing changes in access within 30 or 45 minutes of travel, from any location in the city, can also be made using the interactive webmap linked from the [project webpage](#).

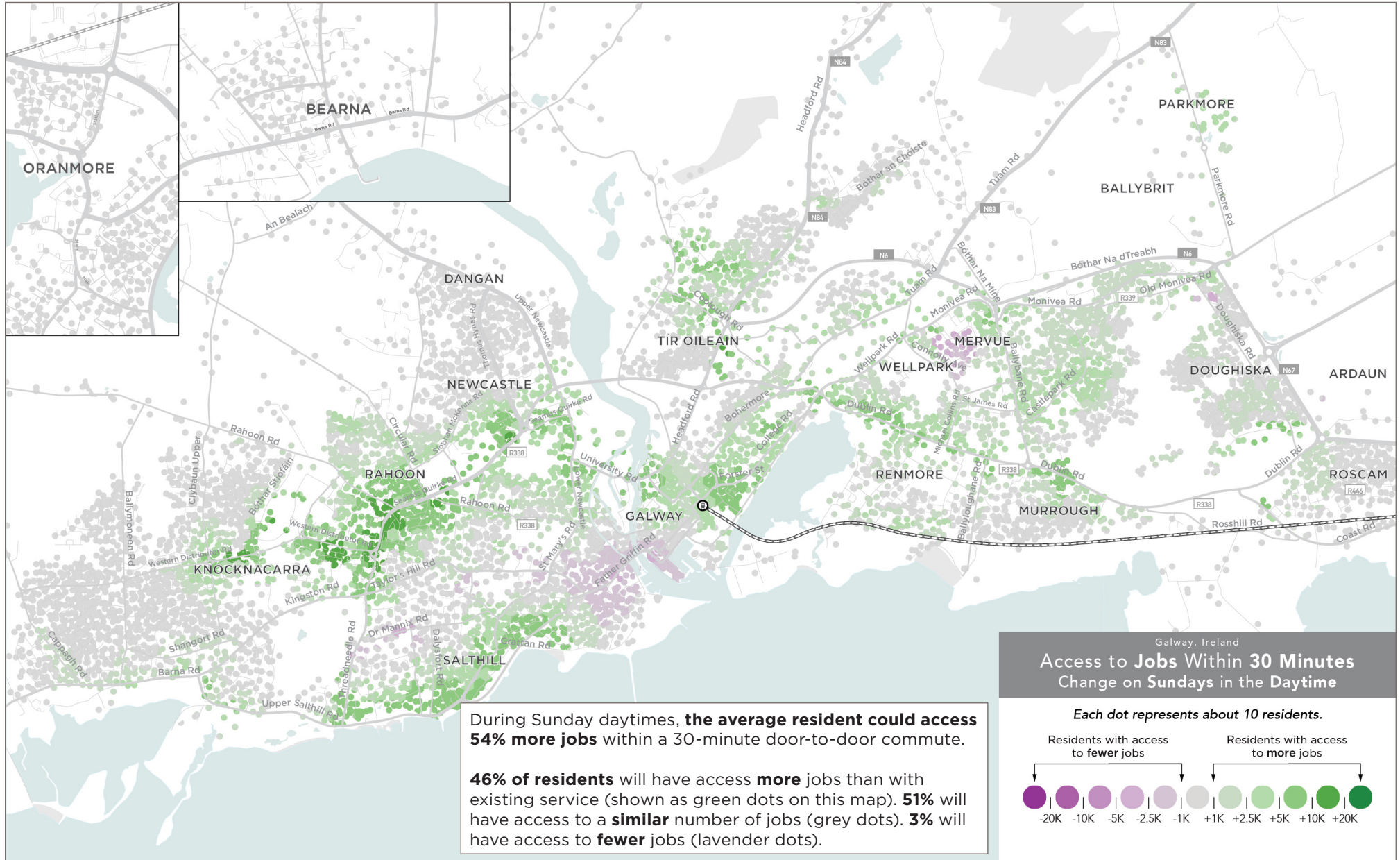
Change in Residents' Access to Jobs on Weekdays



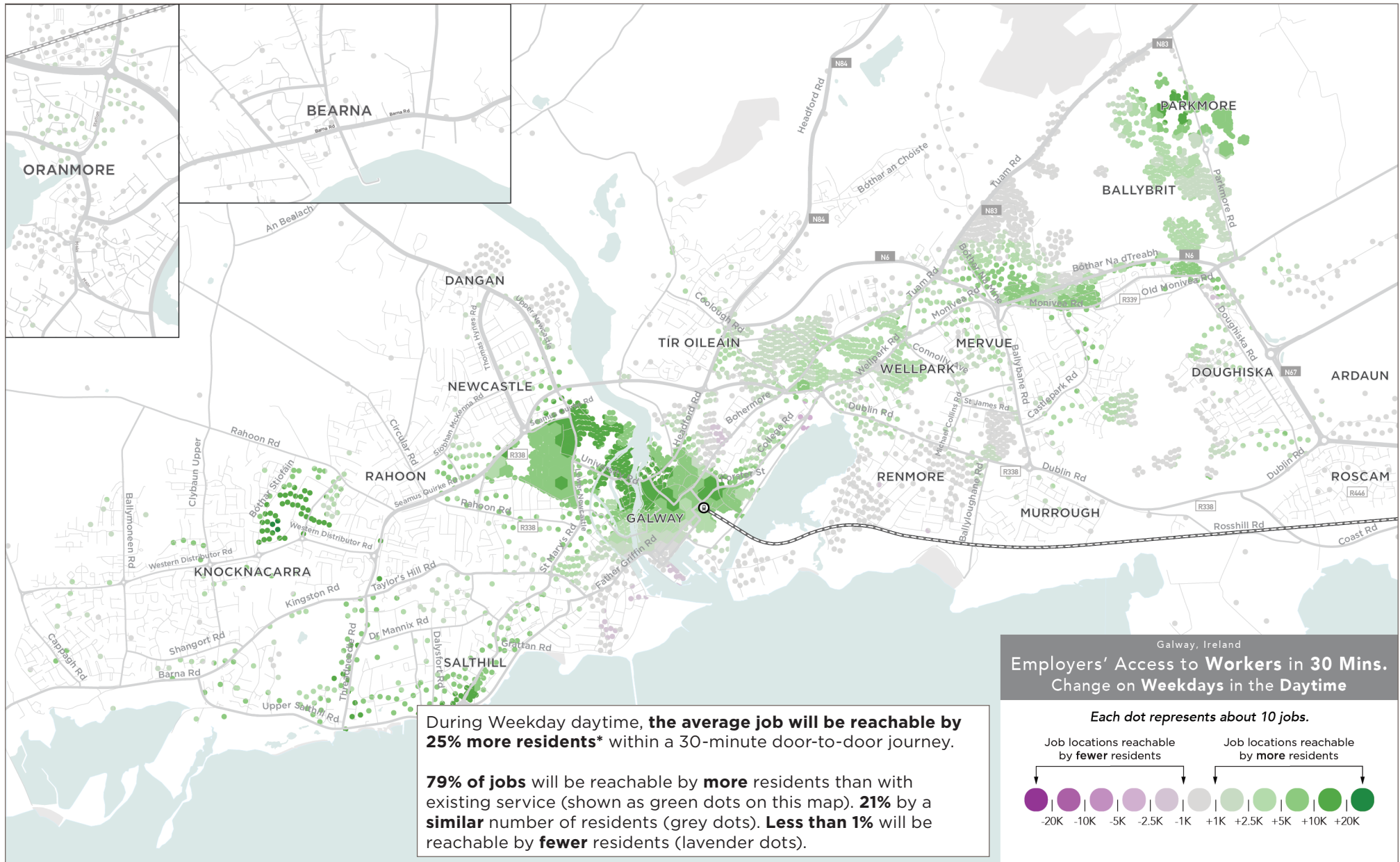
Change in Residents' Access to Jobs on Saturdays



Change in Residents' Access to Jobs on Sundays

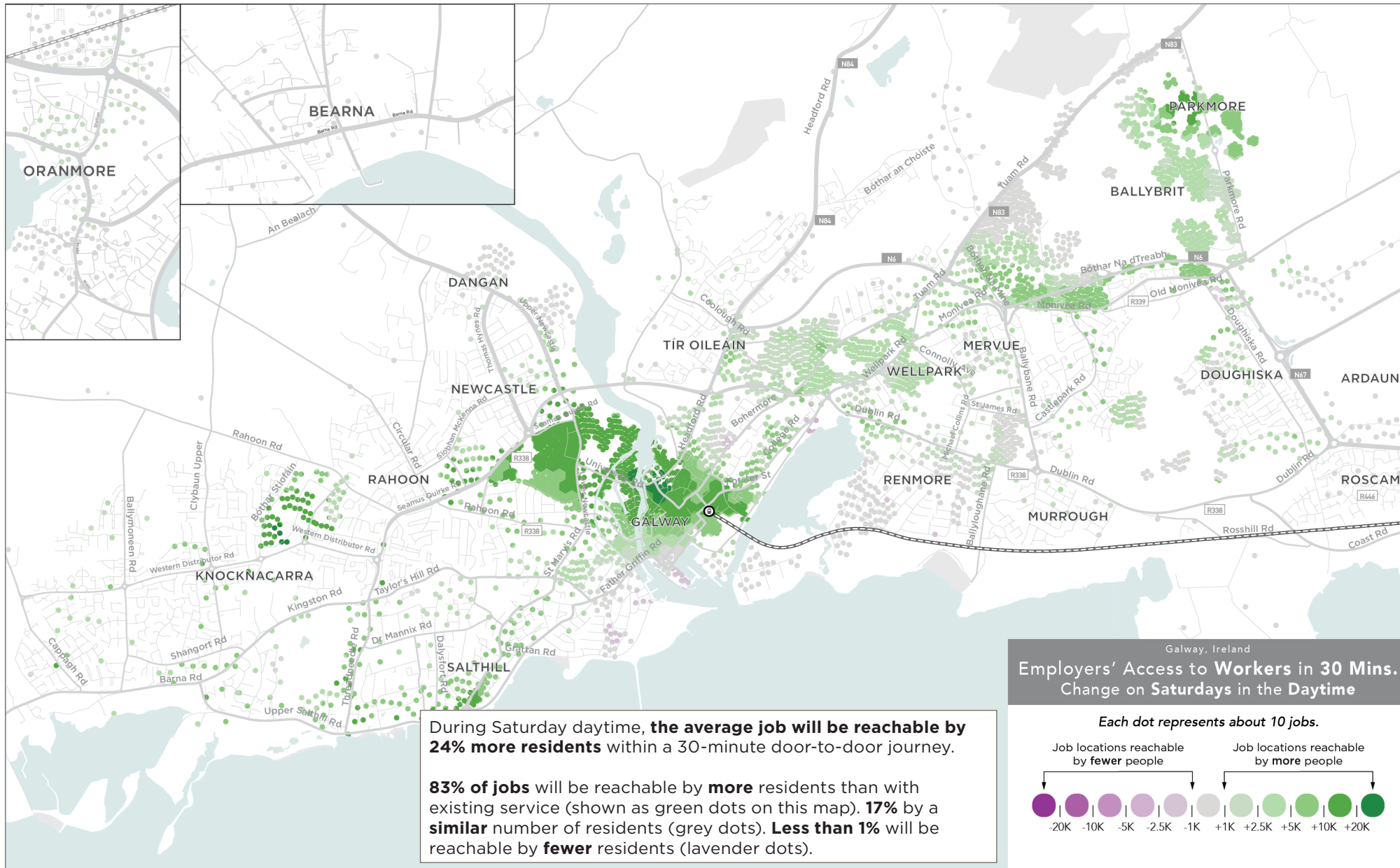


Change in Access to Workers on Weekdays

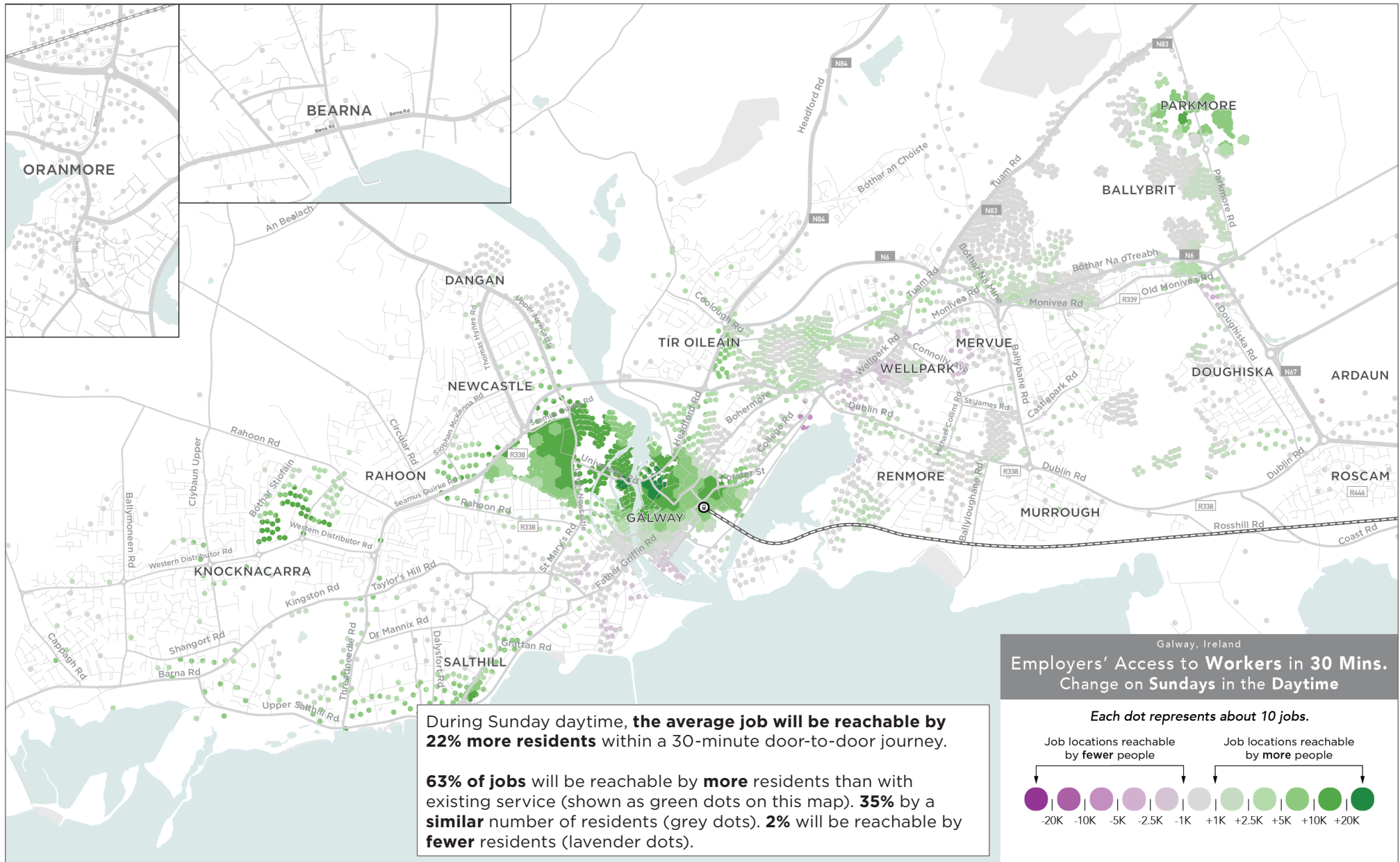


*The mathematically-inclined reader will recognise that the average increases in job access given for residents to jobs, and for jobs to residents, should be equal (Comparing the number given on this map to the number given on page 81). The discrepancy reveals that we are using the word "average" to describe the median change within the population. Median is more reflective of people's concerns and experiences about changes to public transport, but is hard to define the term to the lay-reader without getting overly-technical. It is the authors' opinion that most ordinary readers would themselves give a definition of the word "average" that is closer to the mathematical definition of "median," excusing our quiet substitution of one word for the other.

Change in Access to Workers on Saturdays



Change in Access to Workers on Sundays



Proximity to Service of Various Frequencies

On the next six pages, maps and graphics illustrate how people's proximity to bus service will change with the New Network.

This analysis has been performed for all residents, and for residents in specific situations: those living in areas of high deprivation, seniors, and households without cars. The same analysis has also been performed for jobs.

Walking Distance

Someone is considered "proximate" if they are within a 400m walk of a bus stop. This walk is measured along the pedestrian network, and is therefore sensitive to barriers such as motorways, cul de sacs, or walls.

Most people can walk 400m in about 5 minutes. Some people cannot walk that distance, either all the time or in certain situations (such as when carrying packages or wrangling small children). Other people regularly walk much longer than 5 mins. and would happily walk longer to reach public transport, especially if it is frequent, fast and reliable.

It is not possible to set one or even

multiple walking distance limits that reflect the great diversity of walking abilities and desires among Galwegians. For the purpose of analysing the New Network, a 400m walk requiring about 5 minutes has been assumed.

Frequencies by Time of Day and Week

The number of residents and jobs within 400m of service has been measured at these times:

- Weekdays at midday, reflecting the service offered between the AM and PM rush hours. For many routes this is also the same level of service offered in the early morning and evening.
- Weekdays at rush hour. Most existing routes offer the same frequencies at AM and PM rush hours, however there are small differences and to be precise we have taken the PM rush hour as the compared time.
- Saturdays at midday, reflecting the service offered during most of the day.

- Sundays at midday, reflecting the service offered during most of the day.

The charts on each page are accompanied by small maps. These maps use colour-coding of routes to give a visual impression of the frequency of the networks during each of these four days and times.

Coverage by Service of Any Frequency

The final two maps in this section show how coverage of buildings in the Galway area will change, by public transport of any frequency, in the New Network.

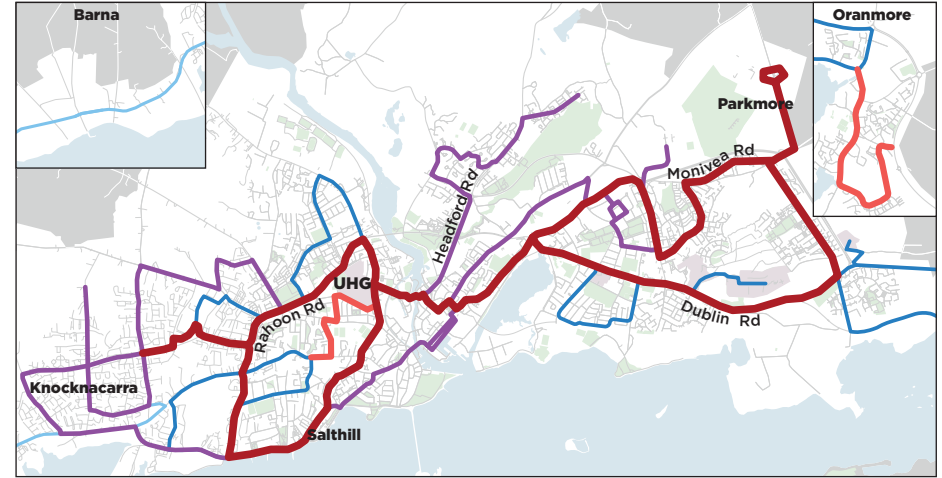
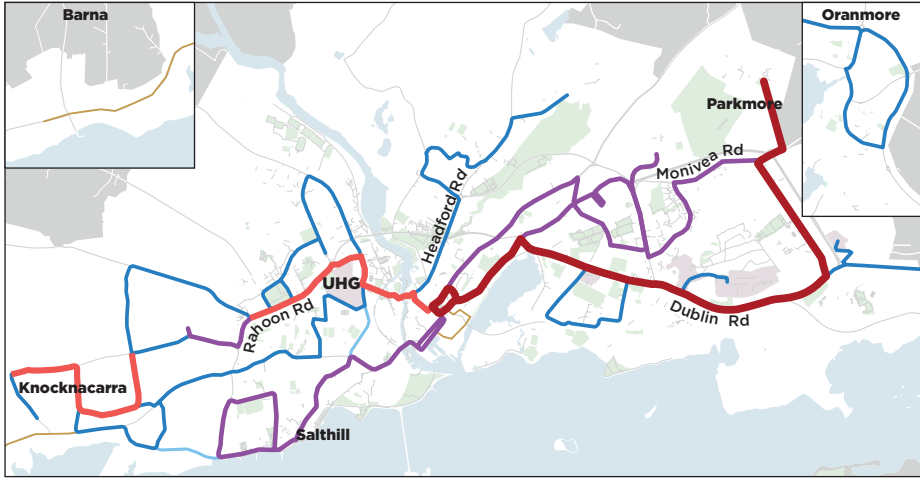
Buildings more than 400m walk from service are shown in orange, whilst those less than 400m from service are shown in green. In some areas, the lack of direct walking paths to the main street put some houses and workplaces far from a bus stop.

The areas where coverage increases for the most buildings are in Knocknacarra and in Roscam, where some main streets do not currently have bus service.

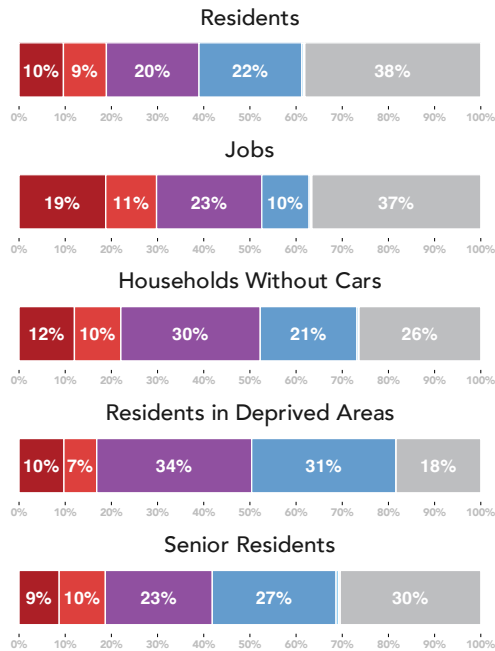
Weekdays, Daytime



Many people need to travel throughout the day, as well as during rush hours, whether to come home from an early work shift, leave work or school early, go to a meeting, or run errands.



Weekday, Daytime in the Existing Network

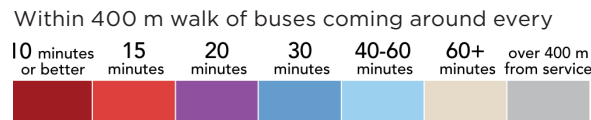


Map legend:

The bus comes about every...



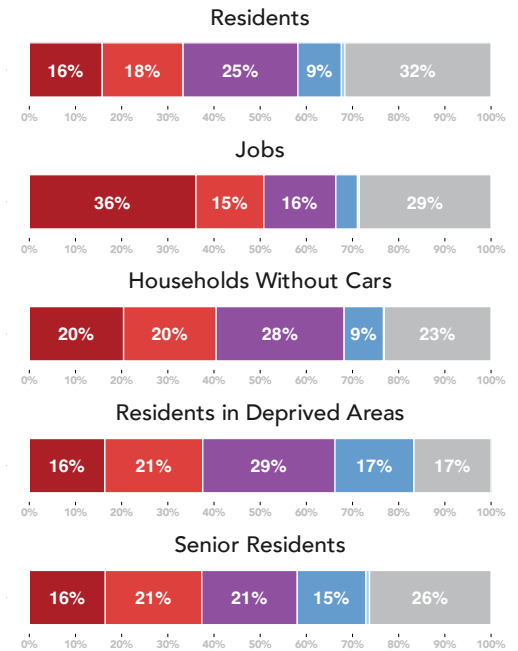
Graph legend:



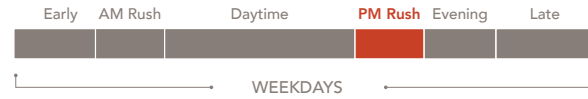
The graph on the left shows the portion of residents and jobs in the study area that are within a 400 metre walk of public transport, and at what frequency, in the daytime on weekdays.

The graph on the right shows the same measure for the New Network.

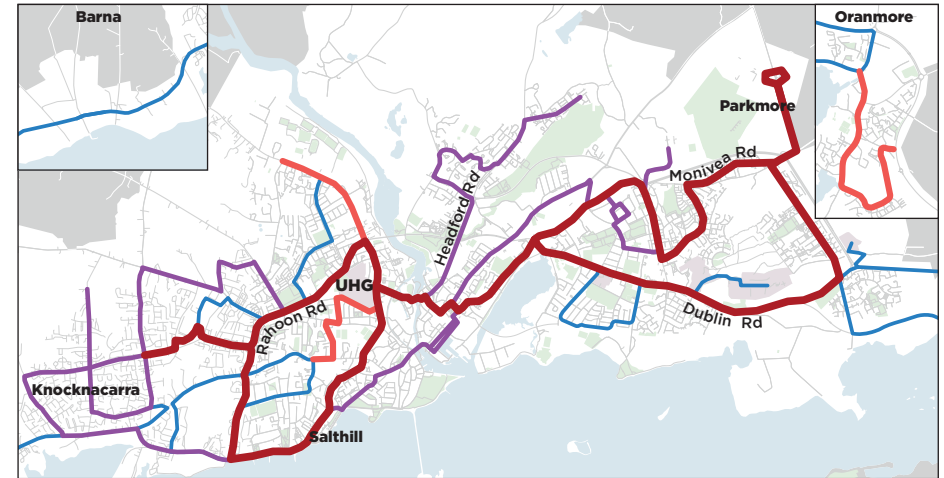
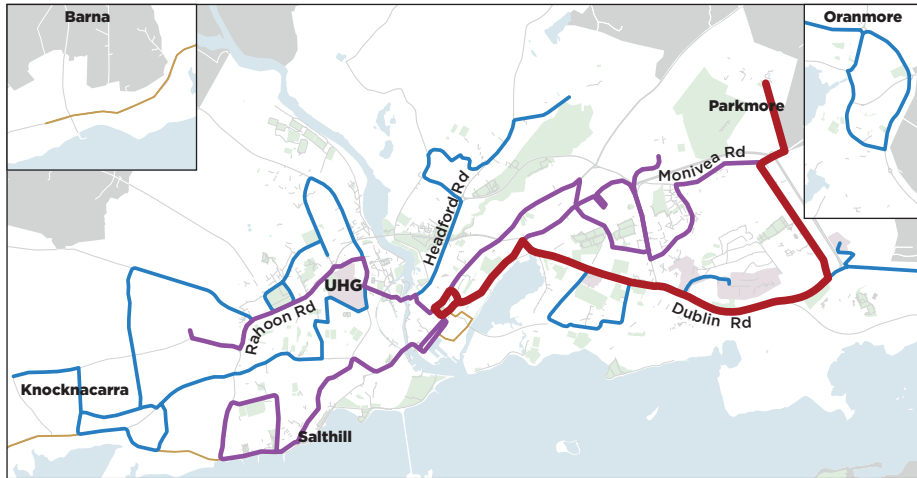
Weekday, Daytime in the New Network



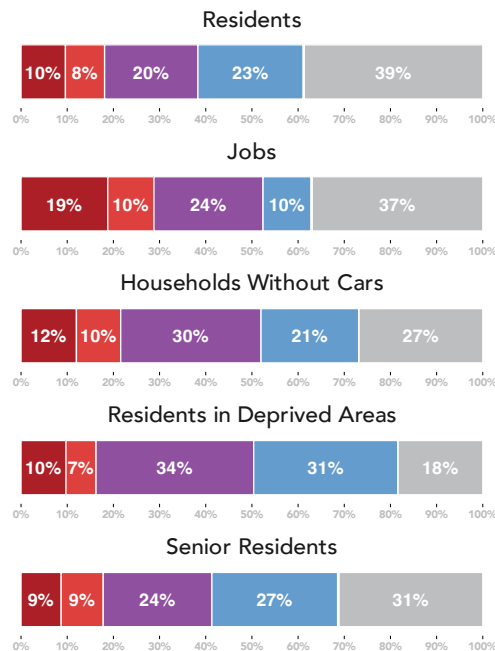
Weekdays, Rush Hour



Rush hours often correspond to peak travel, as many office workers commute to or from home. Many people also run errands on the way to or back from work or school.



Weekday, PM Rush Hour in the Existing Network

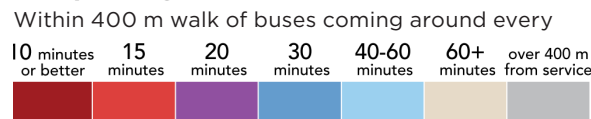


Map legend:

The bus comes about every...



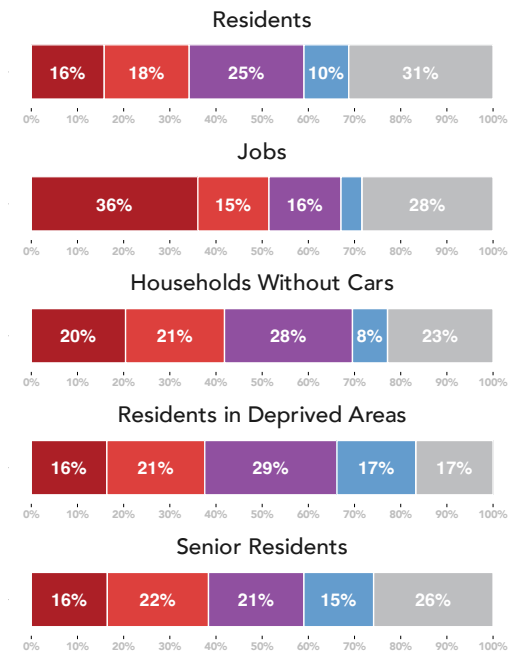
Graph legend:



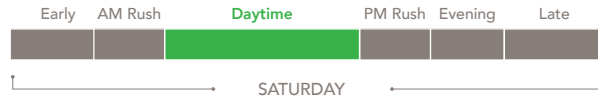
The graph on the left shows the portion of residents and jobs in the study area that are within a 400 metre walk of public transport, and at what frequency, during the PM Rush Hour on weekdays.

The graph on the right shows the same measure for the New Network.

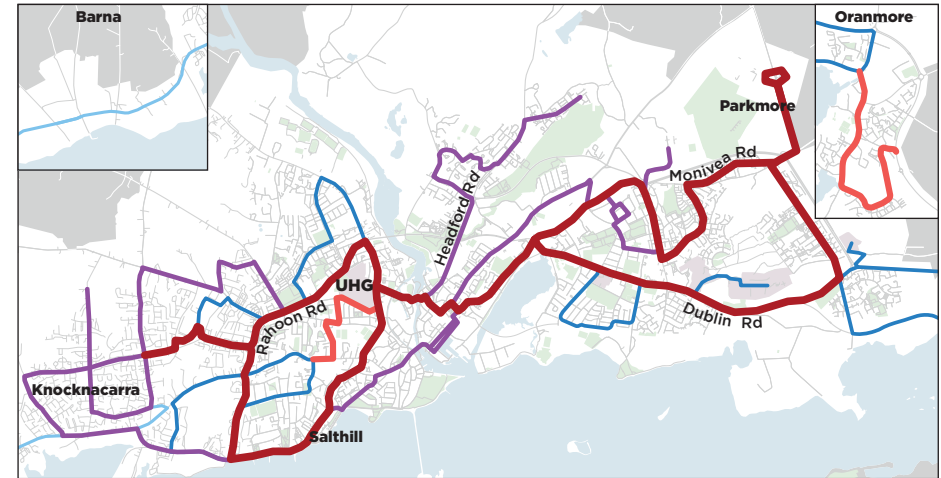
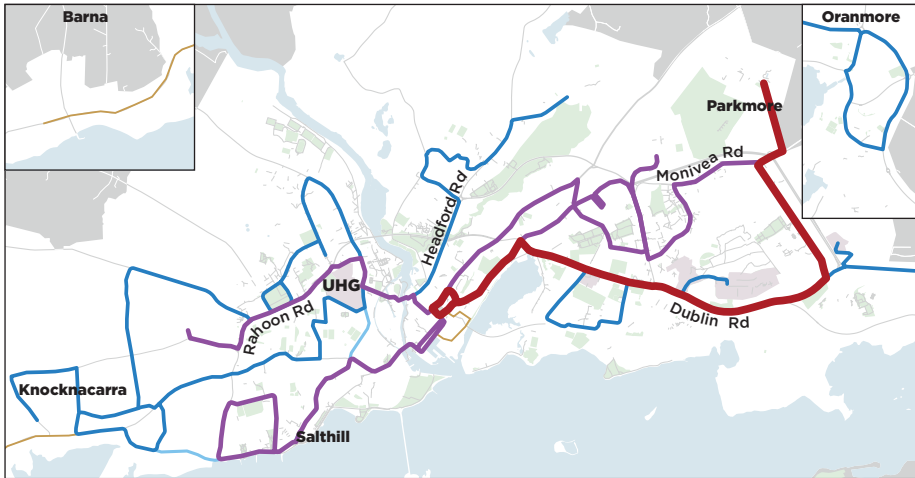
Weekday, PM Rush Hour in the New Network



Saturdays, Daytime

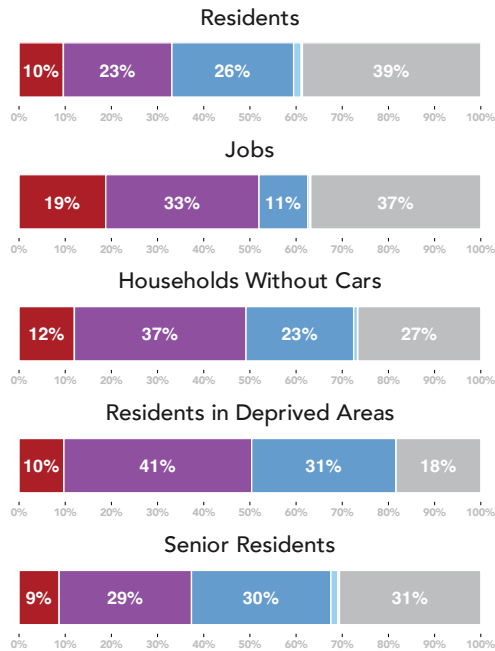


Weekend travel has grown over the last few decades. In addition to travel for errands and socialising, many retail, service, and hospitality workers commute on weekends.



Saturday, Daytime in the Existing Network

Saturday, Daytime in the New Network



Map legend:

The bus comes about every...

- 10 minutes
- 15 minutes
- 20 minutes
- 30 minutes
- 60 minutes
- over 60 minutes

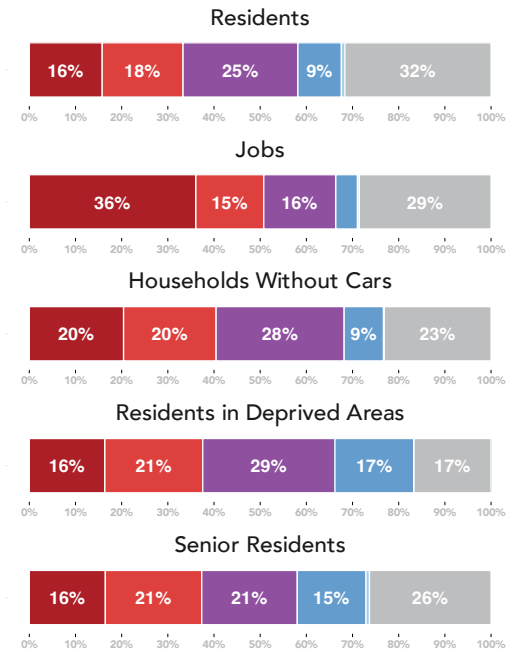
Graph legend:

Within 400 m walk of buses coming around every

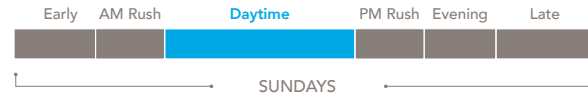
10 minutes or better	15 minutes	20 minutes	30 minutes	40-60 minutes	60+ minutes	over 400 m from service
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The graph on the left shows the portion of residents and jobs in the study area that are within a 400 metre walk of public transport, and at what frequency, in the daytime on Saturdays.

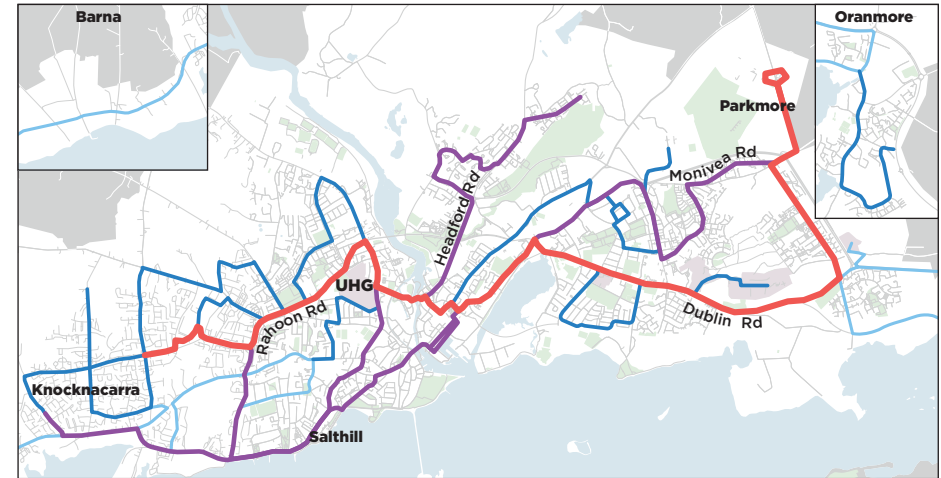
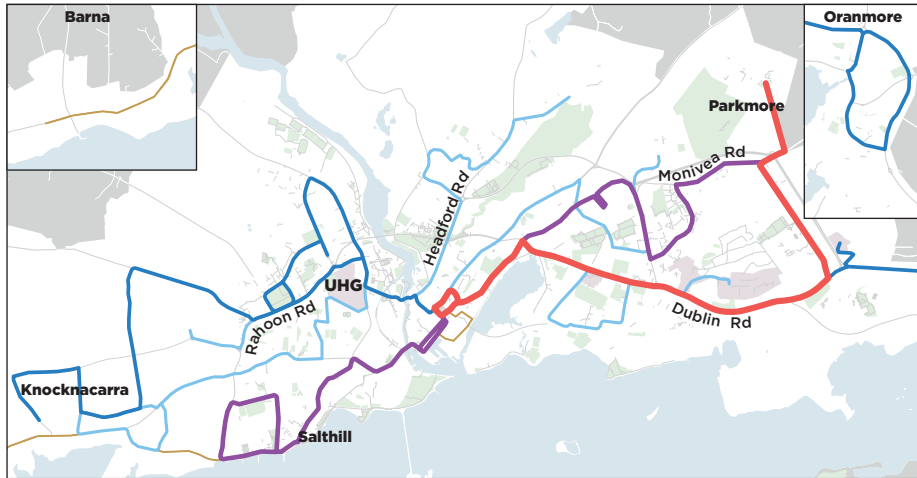
The graph on the right shows the same measure for the New Network.



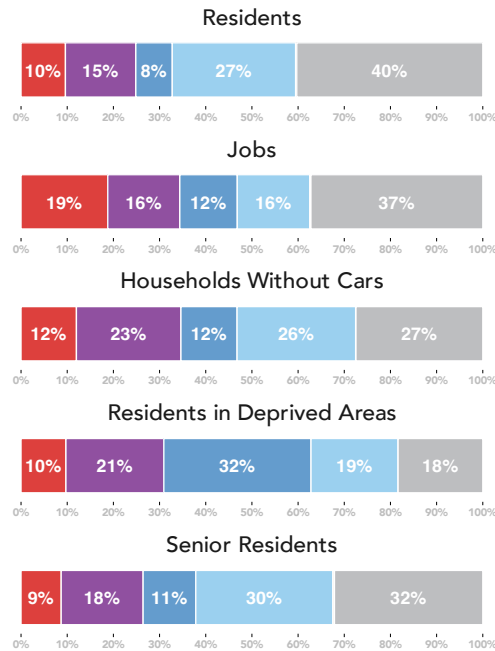
Sundays, Daytime



As traditions relating to Sundays change, more people want to travel for all purposes. Industrial jobs sometimes call for weekend shifts as well.



Sunday, Daytime in the Existing Network

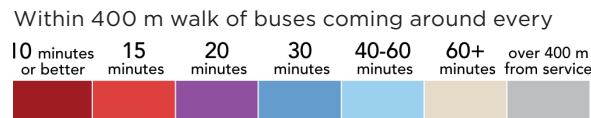


Map legend:

The bus comes about every...



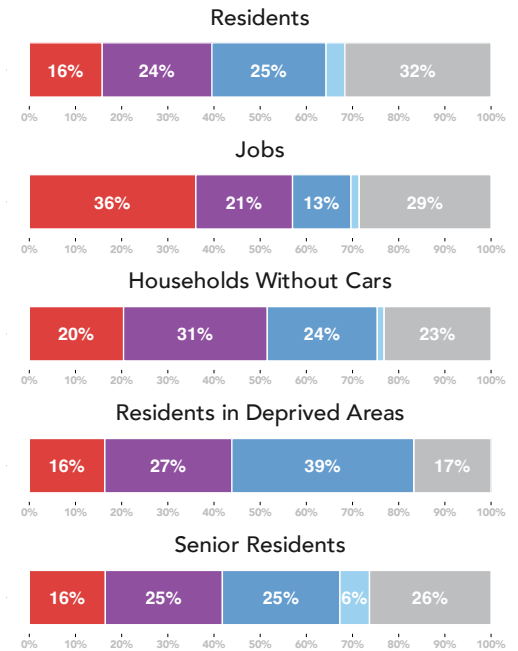
Graph legend:



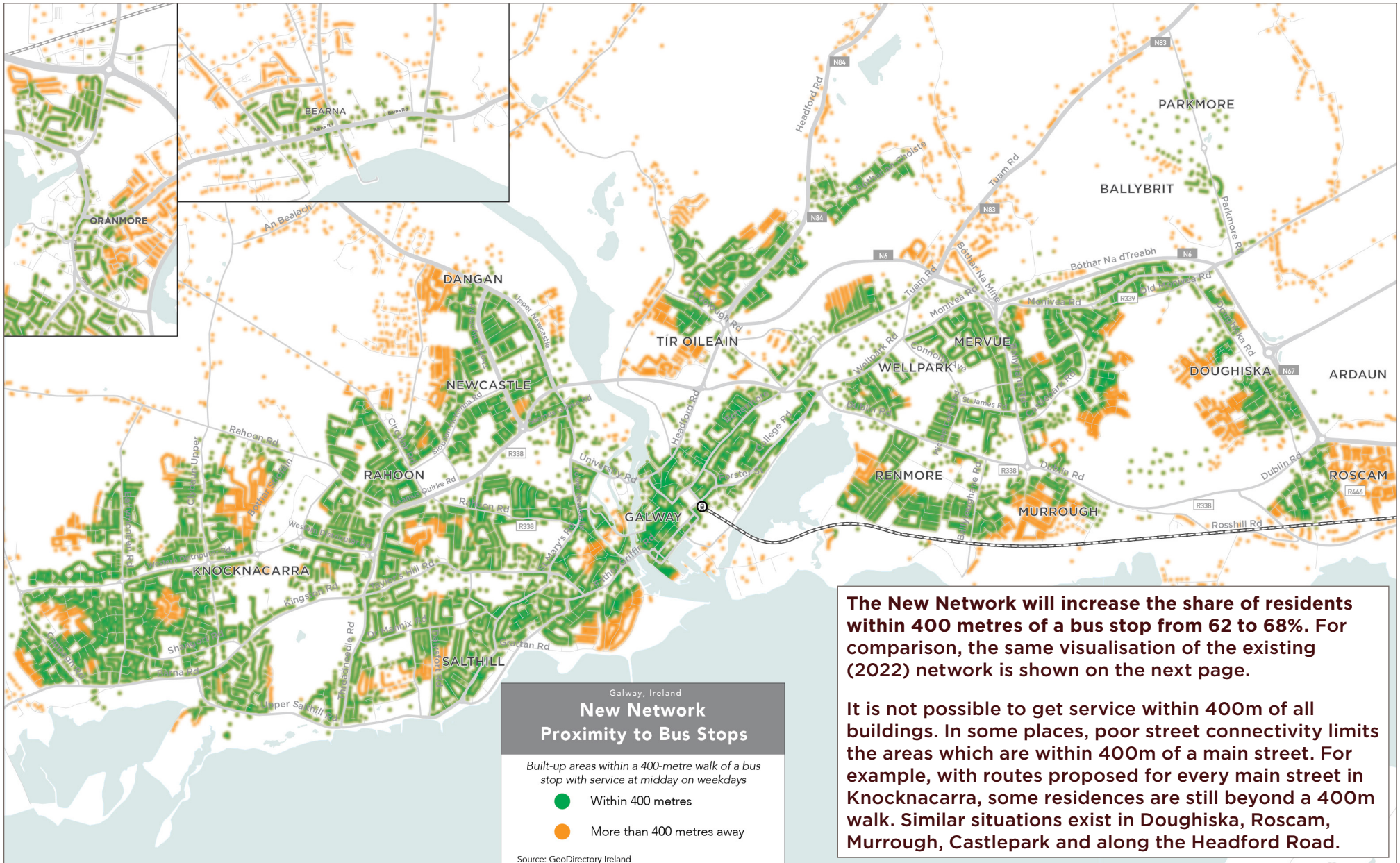
The graph on the left shows the portion of residents and jobs in the study area that are within a 400 metre walk of public transport, and at what frequency, in the daytime on Sundays.

The graph on the right shows the same measure for the New Network.

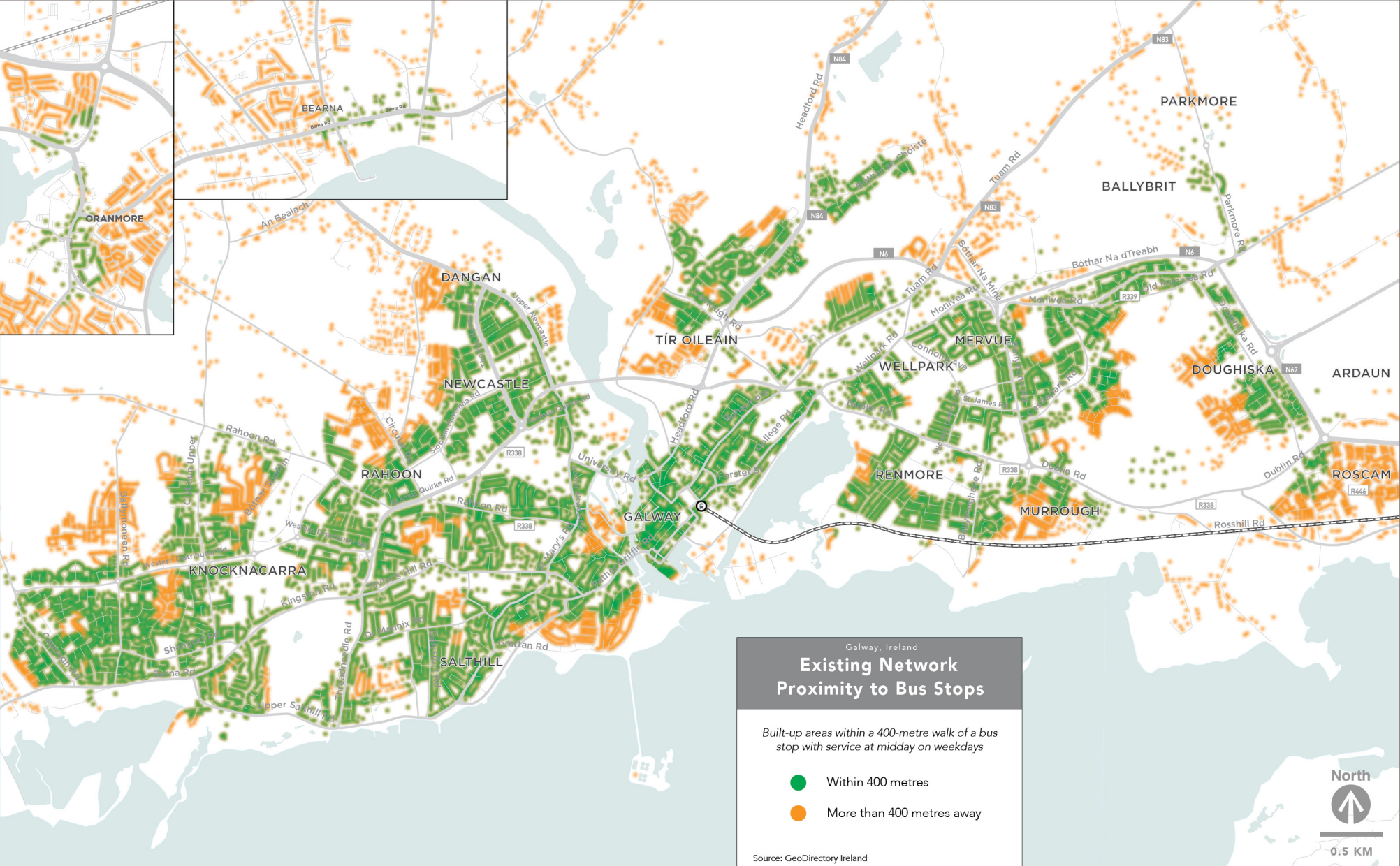
Sunday, Daytime in the New Network

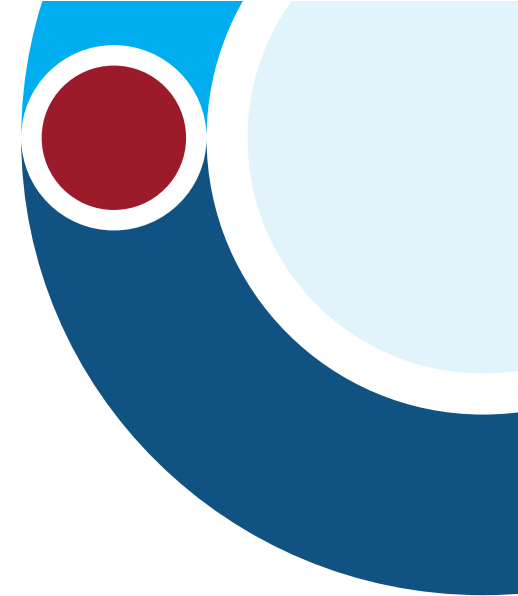


Map of Coverage by the New Network



Map of Coverage by the Existing (2022) Network





Appendix A

**Text-based Tables of Route Frequency by
Time of Day**

Existing Network Frequencies and Spans (Text)

Route	Weekdays and Saturdays from 5am to 8pm	Weekdays and Saturdays from 8pm to 5am	Sundays from 5am to 8pm	Sundays from 8pm to 5am	Notes
Route 401 between Salthill and Parkmore via Eyre Square	Every 20 minutes from 6am to 7pm	Every 20 minutes from 7pm to 12 midnight	Every 20 minutes from 7am to 7pm	Every 20 minutes from 7pm to 12 midnight	
Route 402 between Seacrest and Merlin Park via Eyre Square	Limited trips from 6am to 7am, then every 30 minutes from 7am to 7pm	Every 60 minutes from 7pm to 11pm	Every 60 minutes from 8am to 7pm	Every 60 minutes from 7pm to 11pm	
Route 404 between Newcastle and Oranmore via Eyre Square	Every 30 minutes from 6am to 7pm	Every 30 minutes from 7pm to 12 midnight	Every 30 minutes from 8am to 7pm	Every 30 minutes from 7pm to 12 midnight	
Route 405 between Ragoon and Ballybane via Eyre Square	Every 20 minutes from 6am to 7pm	Every 40 minutes from 7pm to 12 midnight	Every 40 minutes from 8am to 7pm	Every 40 minutes from 7pm to 11pm	
Route 407 between Eyre Square and Bóthar an Chóiste	Limited trips from 6am to 7am, then every 30 minutes from 7am to 7pm	Every 60 minutes from 7pm to 11pm	Limited trips from 8am to 9am, then every 60 minutes from 9am to 7pm	Every 60 minutes from 7pm to 11pm	
Route 409 between Eyre Square and Parkmore via GMIT	Every 15 minutes from 6am to 7am, then every 10 minutes from 7am to 7pm	Every 15 minutes from 7pm to 12 midnight	Every 30 minutes from 7am to 11am, then every 15 minutes from 11am to 7pm	Every 15 minutes from 7pm to 12 midnight	
Route 410 between Cappagh Road and Eyre Square via Salthill	Every 60 minutes from 8am to 5pm	No service at this time	No service at this time	No service at this time	

Route	Weekdays and Saturdays from 5am to 8pm	Weekdays and Saturdays from 8pm to 5am	Sundays from 5am to 8pm	Sundays from 8pm to 5am	Notes
Route 411 between Cappagh Road and Eyre Square via Westside	Every 30 minutes from 7am to 7pm	Every 30 minutes from 7pm to 11pm	Every 60 minutes from 11am to 12 noon, then every 30 minutes from 12 noon to 8pm	Every 60 minutes from 8pm to 9pm	
Route 412 between Cappagh Road and Eyre Square via Gateway Retail Park	Every 30 minutes from 7am to 5pm, then limited trips from 5pm to 6pm	No service at this time	No service at this time	No service at this time	
Route 424 between Bearna and Galway Ceannt	Approximately every 90 minutes from 7am to 7pm	Every 90 minutes from 7pm to 10pm	Limited trips from 7am to 7pm	No service at this time	Select trips in the peak direction are sometimes fewer minutes apart than 90 minutes. Route 424 continues beyond Barna to Carraroe, Lettermullen, and Carna.

New Network Frequencies and Spans (Text)

Proposed Route	Weekdays and Saturdays from 5am to 8pm	Weekdays and Saturdays from 8pm to 5am	Sundays from 5am to 8pm	Sundays from 8pm to 5am	Notes
Route 1 between Gateway and Parkmore via City Centre	Every 20 minutes from 6am to 7am, then every 15 minutes from 7am to 8pm	Every 20 minutes from 8pm to 12 midnight	Every 20 minutes from 6am to 8pm	Every 20 minutes from 8pm to 12 midnight	
Route 3 between Gateway and Ballybrit Industrial Estate via City Centre	Every 30 minutes from 6am to 7am, then every 20 minutes from 7am to 8pm	Every 20 minutes from 8pm to 10pm, then every 60 minutes from 10pm to 12 midnight	Every 60 minutes from 7am to 10am, then every 30 minutes from 10am to 8pm	Every 30 minutes from 8pm to 9pm, then every 60 minutes from 9pm to 11pm	
Route 4 between Gateway and Merlin Park via City Centre	Every 30 minutes from 6am to 8pm	Every 30 minutes from 8pm to 12 midnight	Every 30 minutes from 7am to 8pm	Every 30 minutes from 8pm to 12 midnight	
Route 4 additional rush hour trips between NUIG and City Centre	Weekdays during rush hours only: Every 30 minutes from 6am to 9am and from 3pm to 6pm buses will serve this shorter version of Route 4.	No extra trips on Route 4 at this time.	No extra trips on Route 4 at this time.	No extra trips on Route 4 at this time.	These extra trips on part of Route 4 will result in an effective frequency of every 15 minutes between Upper Newcastle Road and the City Centre, during rush hours.
Route 7 between Cappagh Road and Castlegar via City Centre	Every 30 minutes from 6am to 7am, then every 20 minutes from 7am to 8pm	Every 20 minutes from 8pm to 10pm, then every 60 minutes from 10pm to 12 midnight	Every 60 minutes from 7am to 10am, then every 20 minutes from 10am to 8pm	Every 20 minutes from 8pm to 9pm, then every 60 minutes from 9pm to 11pm	

Proposed Route	Weekdays and Saturdays from 5am to 8pm	Weekdays and Saturdays from 8pm to 5am	Sundays from 5am to 8pm	Sundays from 8pm to 5am	Notes
Route 9 between Knocknacarra and Parkmore via City Centre	Every 60 minutes from 5am to 6am. Then every 15 minutes from 6am to 7am (weekdays), or 6am to 10am (Saturdays). Then every 10 minutes until 8pm.	Every 15 minutes from 8pm to 12 midnight, then every 60 minutes from 12 midnight to 5am	Every 60 minutes from 5am to 6am, then every 30 minutes from 6am to 7am, then every 15 minutes from 7am to 8pm	Every 15 minutes from 8pm to 12 midnight, then every 60 minutes from 12 midnight to 5am	Route 9 provides 24-hour service following branch 9A
Route 9A between Cappagh Road and Parkmore via City Centre	Every 60 minutes from 5am to 6am. Then every 30 minutes from 6am to 7am (weekdays), or 6am to 10am (Saturdays). Then every 20 minutes until 8pm.	Every 30 minutes from 8pm to 12 midnight, then every 60 minutes from 12 midnight to 5am	Every 60 minutes from 5am to 7am, then every 30 minutes from 7am to 8pm	Every 30 minutes from 8pm to 12 midnight, then every 60 minutes from 12 midnight to 5am	Route 9A will operate 24 hours per day
Route 9B between Upper Ballymoneen Road and Parkmore via City Centre	Every 30 minutes from 6am to 7am (weekdays), or 6am to 10am (Saturdays). Then every 20 minutes until 8pm.	Every 30 minutes from 8pm to 12 midnight	Every 60 minutes from 6am to 7am, then every 30 minutes from 7am to 8pm	Every 30 minutes from 8pm to 12 midnight	
Route 10 between Taylor's Hill Road and Oranmore via City Centre	Every 30 minutes from 6am to 7am, then every 15 minutes from 7am to 8pm	Every 30 minutes from 8pm to 12 midnight	Every 30 minutes from 6am to 8pm	Every 30 minutes from 8pm to 12 midnight	Branches 10A and 10B combine to provide 15-minute frequencies between Galway and Oranmore
Route 10A between Salthill and Oranmore via the Eastern Approach Road	Every 60 minutes from 6am to 7am, then every 30 minutes from 7am to 8pm	Every 60 minutes from 8pm to 12 midnight	Every 60 minutes from 6am to 8pm	Every 60 minutes from 8pm to 12 midnight	Branches 10A and 10B combine to provide 15-minute frequencies between Galway and Oranmore

Proposed Route	Weekdays and Saturdays from 5am to 8pm	Weekdays and Saturdays from 8pm to 5am	Sundays from 5am to 8pm	Sundays from 8pm to 5am	Notes
Route 10B between Gateway and Oranmore via Roscam	Every 60 minutes from 6am to 7am, then every 30 minutes from 7am to 8pm	Every 60 minutes from 8pm to 12 midnight	Every 60 minutes from 6am to 8pm	Every 60 minutes from 8pm to 12 midnight	Branches 10A and 10B combine to provide 15-minute frequencies between Galway and Oranmore
Route 424 between Barna and Galway Ceannt	Weekdays: Every 30 minutes from 6am to 8am, then every 60 minutes from 8am to 3pm, then every 30 minutes from 3pm to 6pm, then every 60 minutes from 6pm to 8pm. Saturdays: every 60 minutes from 7am to 8pm.	Every 60 minutes from 8pm to 11pm	Every 60 minutes from 7am to 8pm	Every 60 minutes from 8pm to 11pm	Route 424 continues past Barna to Carraroe, Lettermullen, and Carna. Details of that longer service will be planned in Connecting Ireland.