



Park & Ride Strategy: Greater Dublin Area

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Authority

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Park & Ride Development Office

EXECUTIVE SUMMARY

The Park and Ride Development Office was established in February 2020. The establishment of this office was recommended as one of 28 actions targeting transport related climate change set out in the Climate Action Plan 2019

The function of the Park and Ride Development Office is to enable delivery of key Park & Ride sites by the NTA in collaboration with Local Authorities and Irish Rail and transport agencies in the Greater Dublin Area and Regional Cities by providing full time specialist resources on these projects.

This report sets out the strategy for providing Park & Ride for the Greater Dublin Area and will feed into the overall Transport Strategy for the Greater Dublin Area currently being updated. Reports are also being developed for the regional cities of Cork, Limerick, Galway and Waterford and will be completed within the next 12 months.

This strategy brings together the various elements of existing plans and strategies to ensure an integrated approach to the development of Park and Ride facilities across the public transport network.

Why Park & Ride?

There is a substantial number of people in regional towns, rural hinterland and to a lesser extent in the metropolitan area, who do not have ease of access to high quality public transport by walking or cycling. This can be due to their distance to high-quality public transport, limited pedestrian, and cyclist facilities particularly in rural areas and in the case of the elderly or mobility impaired.

Appropriately located and designed Park & Ride can enable these people to use public transport and enhance their transport options to a wide range of destinations in a sustainable manner.

The provision of quality Park & Ride options will enhance the accessibility of public transport to a wider catchment of people. This will increase the usage of public transport into the future in line with the GDA Transport Strategy objectives and protect the investment in existing and new public transport schemes.

Park & Ride can intercept car trips where people are reliant on private car at an early viable point in their journey thereby reducing the distances travelled by private car with a corresponding reduction in carbon emissions and congestion.

A range of trip origins and characteristics must be considered to identify appropriate Park & Ride interventions:

The Strategy

Through the development of corridor studies and looking at the demand, solutions are being proposed for each corridor. The Strategy Map shows the locations of both the new Strategic Park & Ride sites alongside the existing Park & Ride sites.

The Strategy Identifies three categories of Park & Ride

- 13 new Strategic Park & Ride sites are proposed across 6 corridors.
- Local Park & Ride sites are also considered including upgrade of facilities at various existing Rail Stations.
- Mobility Hub Park & Ride sites are also proposed to be implemented.

Implementation

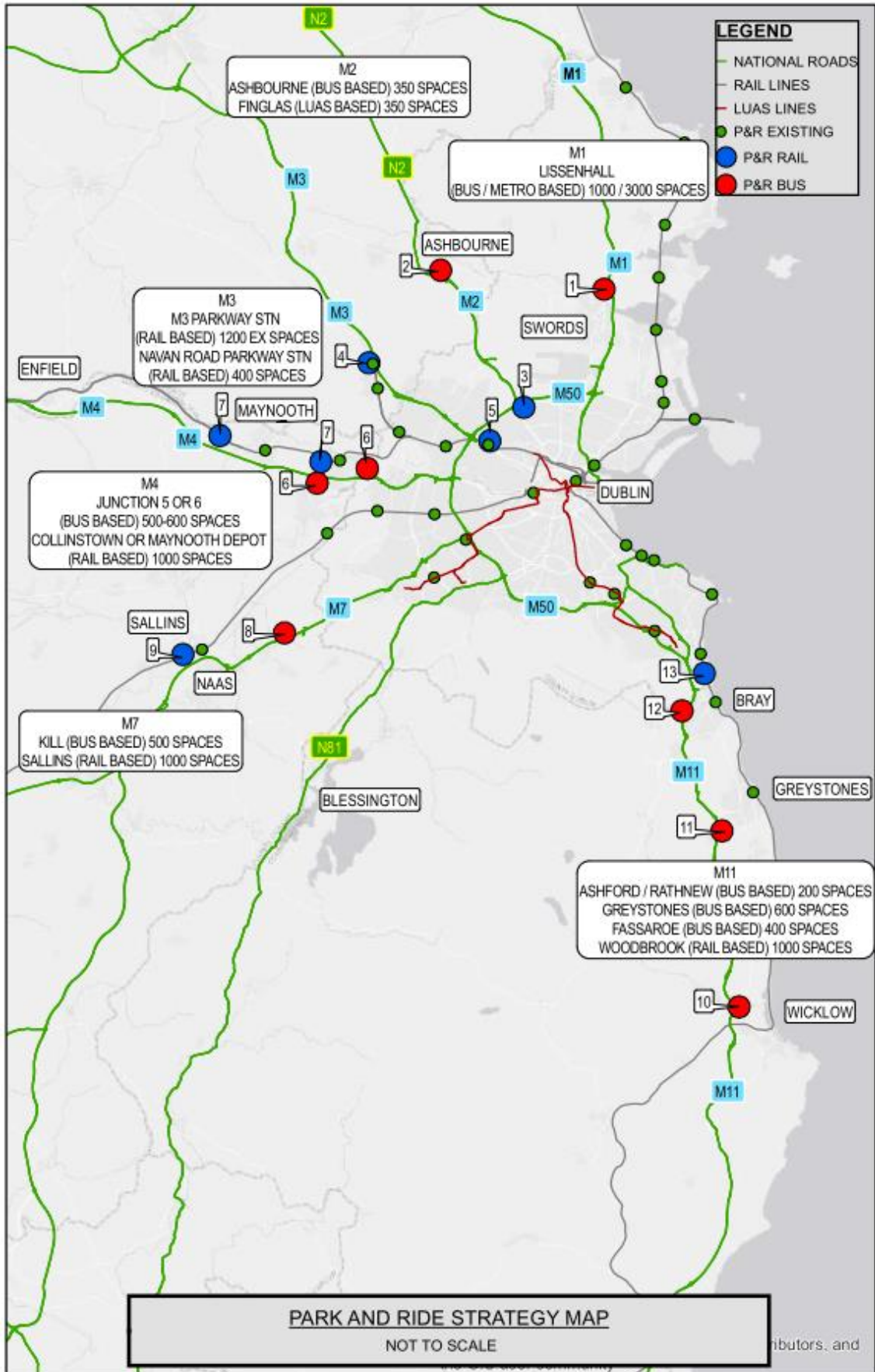
The strategy sets out timelines for implementation of strategic sites over the next 5 years. The NTA will work with stakeholders including Irish Rail, TII, Local Authorities to plan and deliver on Park & Ride proposals.

Vision

To support sustainable growth in the regions, urban areas, and rural settlements through enhancing connectivity to high quality, accessible, low emission, and sustainable transport; empowering modal shift and increasing the catchment areas of existing and future public transport by delivering a network of appropriate Park and Ride facilities.

Objectives for Park & Ride

1. To maximise the opportunities provided by on-going investment in public transport infrastructure and services, particularly in relation to the commencement of service of new public transport projects.
2. To provide the appropriate type and scale of Park and Ride at the right locations, with connectivity to the road and public transport networks and design that supports integration with the surrounding walking and cycling network.
3. Reduce reliance on the private car, reduce distances travelled by car and ensure Park and Ride facilitates greater use of sustainable modes.
4. Deliver an enhanced customer experience through safe, secure, and user-friendly facilities that considers opportunities for interchange and to address barriers to public transport use.
5. To set the standard for the design and layout of P&R sites.



1 POLICY CONTEXT

The Park and Ride Development Office's function is to be a centre of excellence for the development and delivery of Park & Ride facilities nationally. The Park & Ride Development Office will administer NTA funding to all local authorities and transport agencies and support them in the delivery of Park & Ride nationally.

This strategy brings together the various elements of existing plans and strategies to ensure an integrated approach to the development of Park and Ride facilities across the national public transport network. These policies are discussed briefly in this section.

1.1 National Policies

Climate Action Plan 2019 – Government of Ireland

The purpose of the Climate Action Plan is to target climate change through the introduction of a series of measures to reduce greenhouse gas emissions, as the population of Ireland is expected to grow by over a million people by 2040.

The Climate Action Plan puts in place a decarbonisation pathway to 2030 which would be consistent with the adoption of a net zero greenhouse gas target in Ireland by 2050. 183 actions to target climate change are outlined in the 'Climate Action Plan 2019, Annex of Actions', with 28 being transport related. Action 89 refers to Park and Ride '... develop overall Park and Ride Implementation Plan, including the provision of multimodal facilities.'

Project Ireland 2040: National Planning Framework

The National Planning Framework (NPF) is the Government's high-level strategic plan for shaping the future growth and development of Ireland to the year 2040. It details 10 National Strategic Outcomes (NSOs). NSO No. 4 is 'Sustainable Mobility'.

In order to help achieve the 'Sustainable Mobility' NSO, the NPF sets a goal of expanding attractive

public transport alternatives to car transport to reduce congestion and emissions and enable the transport sector to cater for the demands associated with longer term population and employment growth in a sustainable manner through the following measures:

- Deliver the key public transport objectives of the Transport Strategy for the Greater Dublin Area 2016-2035 by investing in projects such as New MetroLink, DART Expansion Programme, BusConnects in Dublin and key bus-based projects in the other cities and towns.
- Provide public transport infrastructure and services to meet the needs of smaller towns, villages, and rural areas; and
- Develop a comprehensive network of safe cycling routes in metropolitan areas to address travel needs and to provide similar facilities in towns and villages where appropriate.

Project Ireland 2040: National Development Plan 2018-2027

The National Development Plan (NDP) has committed €500 million in funding over the next 10 years with a focus on realising the 10 NSOs presented in the National Planning Framework. In relation to the Sustainable Mobility NSO, 11 programmes and underlying projects are proposed for delivery during the period to 2027, including the Park and Ride Programme for rail, Luas, and bus locations.

Investment in the BusConnects programme also refers to investment in park and ride facilities.

Draft Integrated Implementation Plan 2019-2024, NTA

With respect to Light Rail Investment, The Draft Integrated Implementation Plan refers to Park and Ride as follows: '*other smaller interventions will be undertaken during the period of the Plan, including the potential conversion of the Luas stop at Connolly to other transport uses, the enlargement of the Luas Park & Ride site at Red Cow and other park and ride enhancements associated with the Luas network*'.

The proposed MetroLink project, with reference to Park & Ride, is discussed under Light Rail projects. With respect to Heavy Rail Investment, the Plan refers to Park and Ride in terms of Network Development as follows: *'It is also proposed to deliver a car park expansion programme, including a number of large new strategic park and ride sites at key locations.'*

With respect to Bus Investment, the Plan refers to Park and Ride in terms the BusConnects Dublin Programme.

1.2 Policies Specific to the GDA

EMRA Regional Spatial & Economic Strategy, 2019-2031

The RSES identifies the region's key strategic assets, opportunities and challenged and set out policy responses to ensure that people's needs are met (including ease of travel). This report refers to the provision of Park & Ride facilities in particular locations serving the City and regional centres in the region. The locations identified are based on the transport strategies which are already in place.

Transport Strategy for the Greater Dublin Area 2016-2035, NTA

The Transport Strategy for the Greater Dublin Area (GDA) commits to providing Park and Ride facilities to accommodate those living beyond the local walking catchment of rail, or alternative suitable public transport) to access destinations through the public transport network. An update to the Transport Strategy for the Greater Dublin Area document is in its initial stages, which will replace the 2016-2035 version.

The Transport Strategy sets out to develop Park and Ride as follows:

- Develop a network of strategic rail-based park and ride facilities at appropriate points where rail services intersect with the national road network, adjacent to, or outside of, the M50. These facilities are, or would be, located at Swords, Finglas, Dunboyne, Liffey Valley, Naas Road, Carrickmines, Woodbrook and Greystones

- Further develop the provision of local Park and Ride facilities at appropriate locations on the rail network in the outer parts of the Metropolitan Area and in the Hinterland area
- Assess and determine the potential for bus-based park and ride, in particular, close to high quality road corridors leading from Hinterland towns, with good bus priority to commuter destinations in the Metropolitan area
- Implement suitable charging structures for Park and Ride facilities to make it more likely that those who most need the service (i.e. those outside walking distance and where alternative public transport options are not available), will obtain parking. In addition, implement, where appropriate, a suitable charging structure on local roads adjacent to park and ride facilities to discourage commuters from parking on such roads.

The Transport Strategy also identifies a number of Radial and Central Transport Corridors (see Figure 1.2) as follows:

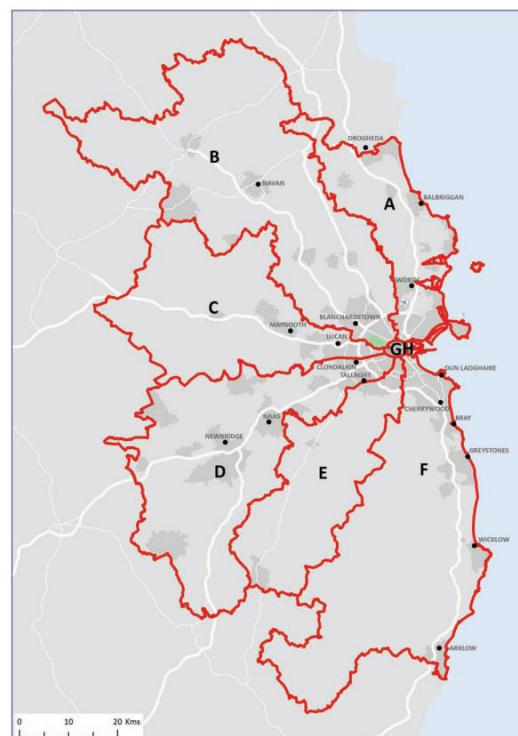
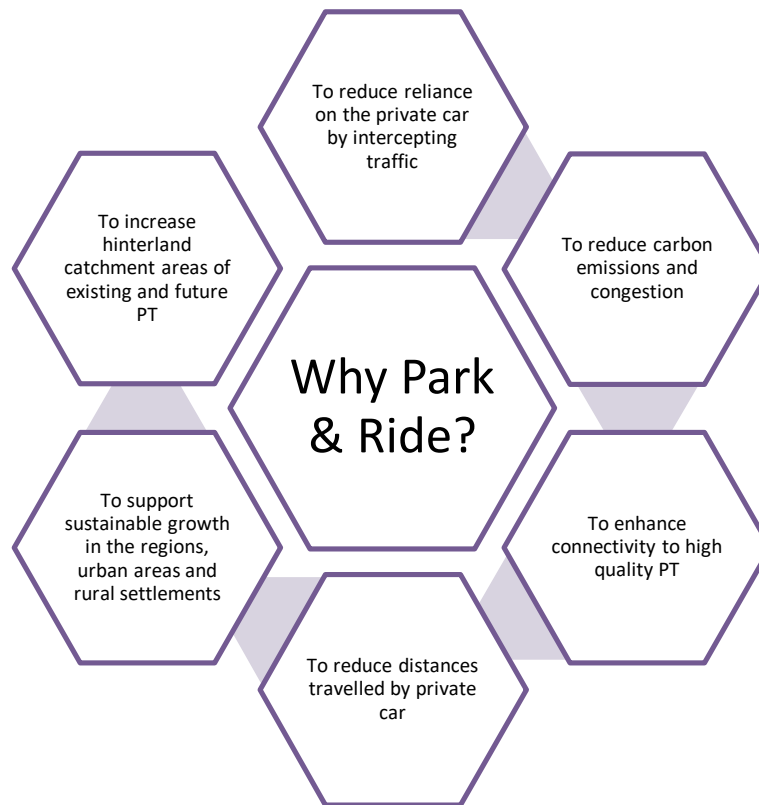


Figure 1.2: Action 89 of Climate Action Plan 2019, Annex of Actions

2 WHY PARK & RIDE?



There is a substantial number of people in regional towns, rural hinterland and to a lesser extent in the metropolitan area, who do not have ease of access to high quality public transport by walking or cycling. This can be due to the distance to the high-quality public transport, limited pedestrian, and cyclist facilities particularly in rural areas and in the case of the elderly or mobility impaired.

Appropriately located and designed Park & Ride can enable these people to use public transport and enhance their transport options to a wide range of destinations in a sustainable manner.

The provision of quality Park & Ride options will enhance the accessibility of public transport to a wider catchment of people. This will increase the usage of public transport into the future in line with

the GDA Transport Strategy objectives and protect the investment in existing and new public transport schemes.

Park & Ride can intercept car trips where people are reliant on private car at an early viable point in their journey thereby reducing the distances travelled by private car with a corresponding reduction in carbon emissions and congestion.

A range of trip origins and characteristics must be considered to identify appropriate Park & Ride interventions:

Trip Origin - Type of Settlement	Appropriate Intervention
Rural Small Population Areas where PT options are limited	Provide access to convenient Park & Ride locations at high quality public transport nodes without adding to congestion in Regional Towns
Small Urban Settlements and Small Towns where PT options are limited	Provide access to convenient Park & Ride locations at high quality public transport nodes without adding to congestion in Regional Towns.
Larger Regional Towns where PT connections exist	Provision/Enhancement of Park & Ride options adjacent to the public transport at rail stations or Bus Interchange within the town. This will improve access to public transport for those within the town who do not currently use public transport due to walking distance or poor cycle access and facilitate the elderly and mobility impaired and should unnecessarily add to congestion.
Larger Settlements and suburbs within the Metropolitan Area where generally good quality PT options exist within walking and cycling distances	Provide appropriate Park & Ride facilities at key transport nodes to enhance access for elderly and mobility impaired and provide for interchange between public transport bicycle and car share facilities.

Table 2.1: Trip Origin and appropriate intervention

Table 2.2 below looks at the three categories of Park & Ride Strategic Park & Ride, Local Park & Ride and Local Mobility Hubs, in relation to the function of each type, their key characteristics and

the key factors that dictate the success of individual sites. This report mainly focuses on developing the strategy for the Strategic Park & Ride sites.

Type	Strategic Park and Ride	Local Park & Ride	Local Mobility Hubs
Function	<p>To facilitate the modal shift of long-distance car trips to public transport, at an early opportunity.</p> <p>To serve a wide hinterland of a strategic corridor to an urban centre.</p>	<p>To provide parking facilities at transport nodes such as railway stations and bus stations serving smaller towns and villages on the regional public transport network</p>	<p>To serve urban and suburban areas. They seek to expand the local catchment of public transport services by catering for access to stops / stations for a range of mobility options.</p> <p>To provide the opportunity to interchange between the car and public transport modes as well as between sustainable transport modes</p>
Key Characteristics	<p>Located on an interchange between the National Roads Network and high-quality high capacity public transport. Where appropriate, to provide links to good quality cycling networks.</p> <p>Large in scale (500 car parking spaces +).</p>	<p>Small in scale. Local Park & Ride should also tie into the local walking and cycling networks.</p>	<p>Include car parking, high quality bicycle parking, walking, and cycling links to good quality walking and cycling networks and dedicated car club and car sharing facilities.</p>
Things to avoid	<p>Should not encourage people who would otherwise access public transport locally, to drive further to access a site, thus adding to congestion.</p> <p>Existing users of the public transport should not be unduly affected by increased patronage associated with Park and Ride usage.</p>	<p>Should not become destination parking for the town or village.</p>	<p>While mobility hubs include car parking, the site should not be dominated by it.</p> <p>Should not encourage people who would otherwise access public transport locally, to drive further to access a site, thus adding to congestion.</p>

Table 2.2: Park & Ride categories

Distribution of population by distance to closest Public Transport node for the GDA:

Information provided from the ERM shows that 1.6 million people outside the Metropolitan area are currently on average 2.3km from a public transport node, with 750,000 people more than 1km from any public transport node with a greater number still a significant distance from *high quality public transport*.

Figure 2.1 below shows the Public Transport Accessibility Level (PTAL) numbers for the Dublin Metropolitan Area (DMA). Large areas outside the Metropolitan Area and some within it are in the 0-2 range and therefore do not have good access to high-quality public transport. Park & Ride aims to improve access to this high-quality public transport to a cohort of people who currently cannot easily avail of this service.

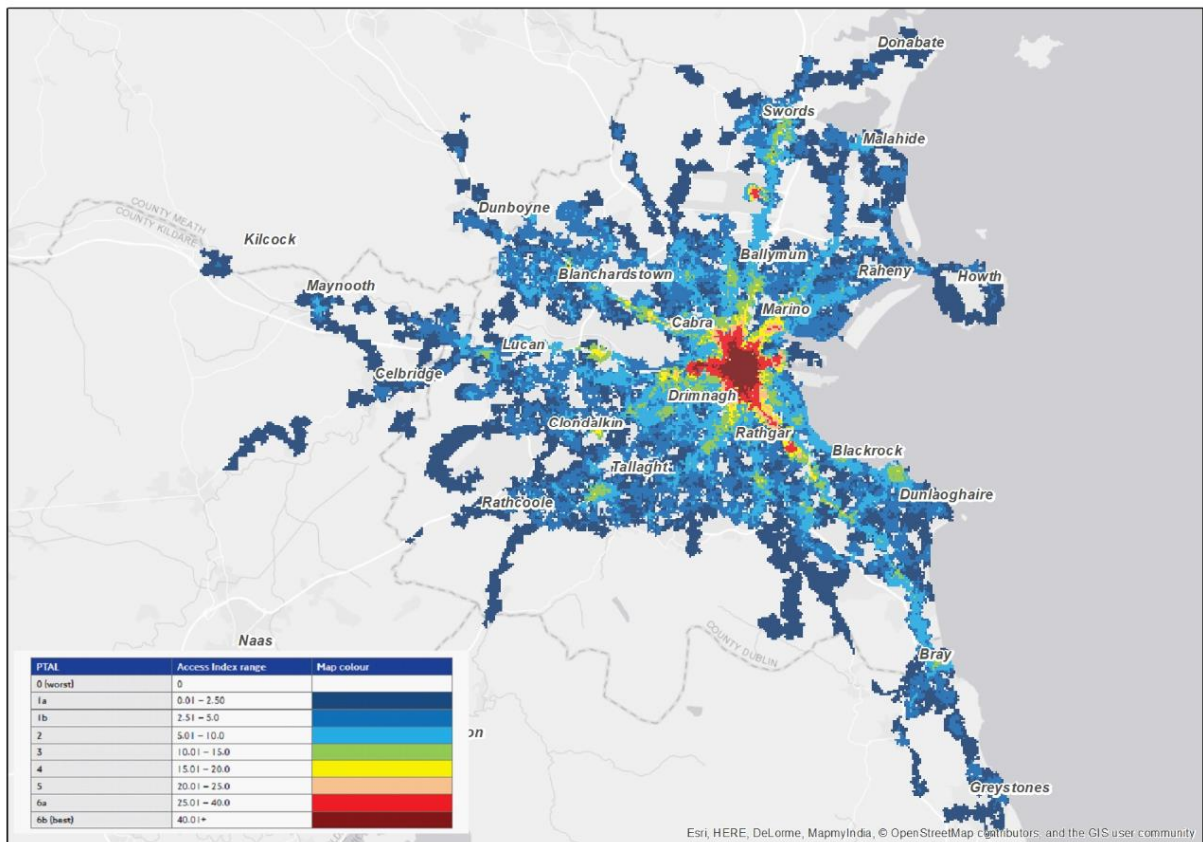


Figure 2.3: Public Transport Accessibility Level (PTAL) numbers for the DMA

3 DEVELOPING THE STRATEGY

3.1 Corridor Studies

NTA’s Transport Strategy for the Greater Dublin Area 2016-2035 identifies 6 radial transport corridors into Dublin City Centre. The Park and Ride Development Office is investigating the potential to provide Strategic Park and Ride facilities along 5 of these corridors (i.e., Corridors A, B, C, D and F with corridor B broken into B(i) and B(ii) (i.e., the N2 and N3 looked at separately). Corridor Studies are being prepared for these radial routes which include a review of the characteristics of each corridor in terms of-

- Travel Demand and range of destinations.
- Potential for intercepting car trips to Public Transport by appropriately located Park & Ride sites both currently and in 2043.
- Public Transport provisions, capacity, travel times both currently and when

planned new Public Transport services are implemented up to 2043.

- Land use planning and consideration of effect of new developments on demand and available site for Park & Ride.
- Identifying appropriate sites for strategic Park & Ride, that can be easily accessed from the strategic road network.
- Identifying appropriate sites for local Park & Rides, that can be easily accessed by the local community by cars and walking/cycling.
- Considering opportunities for additional Public Transport infrastructure and services, to improve the attractiveness to a wider catchment of population through Park & Ride.



Figure 3.1: GDA Corridors

3.2 Demand Analysis

The demand analysis has been carried out using a first principal approach. It considers the spatial distribution of population that could potentially be intercepted from car onto Public Transport if an attractive Park and Ride alternative is available. The analysis of potential users has been developed considering the population distribution outside the metropolitan area and their accessibility to Public Transport.

The analysis is focused on current and expected travel trends and trip demand from the Eastern Regional Model till 2043, when various public transportation improvements are introduced. The model has been utilised to better understand the number of people currently using private car to access Dublin City Centre and other important destinations on each corridor.

A range of potential capture rates for Park & Ride has been estimated dependent on trip destinations, quality of Public Transport services and potential travel time savings. The analysis considers both peak commuter demand and potential off-peak usage based on an empirical data from existing Park & Ride sites.

Park & Ride has potential to attract additional trips as it will enable people who currently have poor Public Transport access, to access Public Transport service in an efficient manner, widening their range of potential destinations.

The following steps were used to conduct the analysis for each corridor-

- 1) Overall travel demand on each corridor has been established by analysing the trip demand across various screen lines on each corridor. This gives an understanding of the spatial distribution of the overall trip demand on

each corridor, in addition to the Public Transport and private car mode split both currently and as forecast for 2043. Figure 3.2 below shows some example of private car trip (morning peak 2020) demand on the motorways from various corridors.

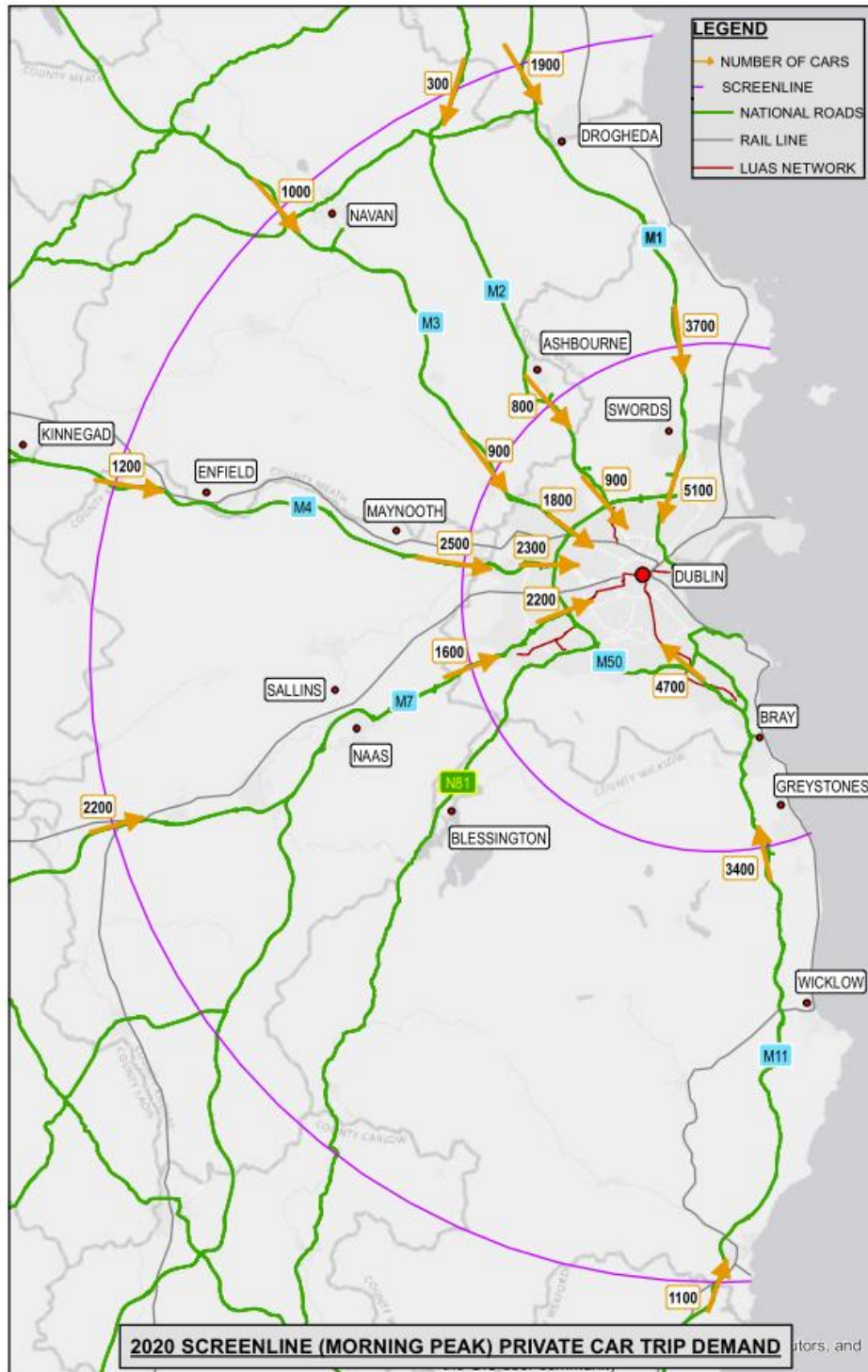


Figure 3.2: 2020 screenline (morning peak) car trip demand

2) Origin and Destination analysis using Select Links (traffic survey locations) from the Eastern Regional Model at 33 locations have been used to establish the potential demand for both 2020 base and 2043 forecast year. The potential demand for Park & Ride along each corridor is based on the number of private car trips

passing these points that could be intercepted by Park & Ride to use a Public Transport alternative to reach their destination.

Figure 3.3 below shows some examples of private car numbers (morning peak 2020) heading into key destination zones in Dublin captured at various interception points.



Figure 3.3: Traffic survey locations & recorded car numbers

- 3) Trips destined for Dublin City Centre including the canal cordon and docklands area have been considered for each corridor. Park & Ride to transfer to public transport would be most appealing for destinations within the Canal Cordon due to the limited availability of commuter parking, high levels of congestion.
- 4) Additional key destinations, such as the suburban area along the corridors within the M50 and key employment zones like Sandyford, Tallaght etc. have also been explored for Park and Ride potential.



Figure 3.4: Estimated daily car trips to be intercepted by strategic Park & Rides by 2043

- 5) Each corridor's Public Transport characteristics (capacity, efficiency, and frequency) have been examined in light of any potential national infrastructure expansion plans, in order to determine the most appropriate mode of public transportation for strategic Park & Ride proposals.
- 6) Using the results from Select Link Analysis and Public Transport evaluation, several potential strategic Park & Ride sites have been identified and examined for land use patterns and availability for development. Figure 3.5 and 3.6 depict the demand analysis workflow as well as a flowchart showing the different elements and measures involved in the analysis.

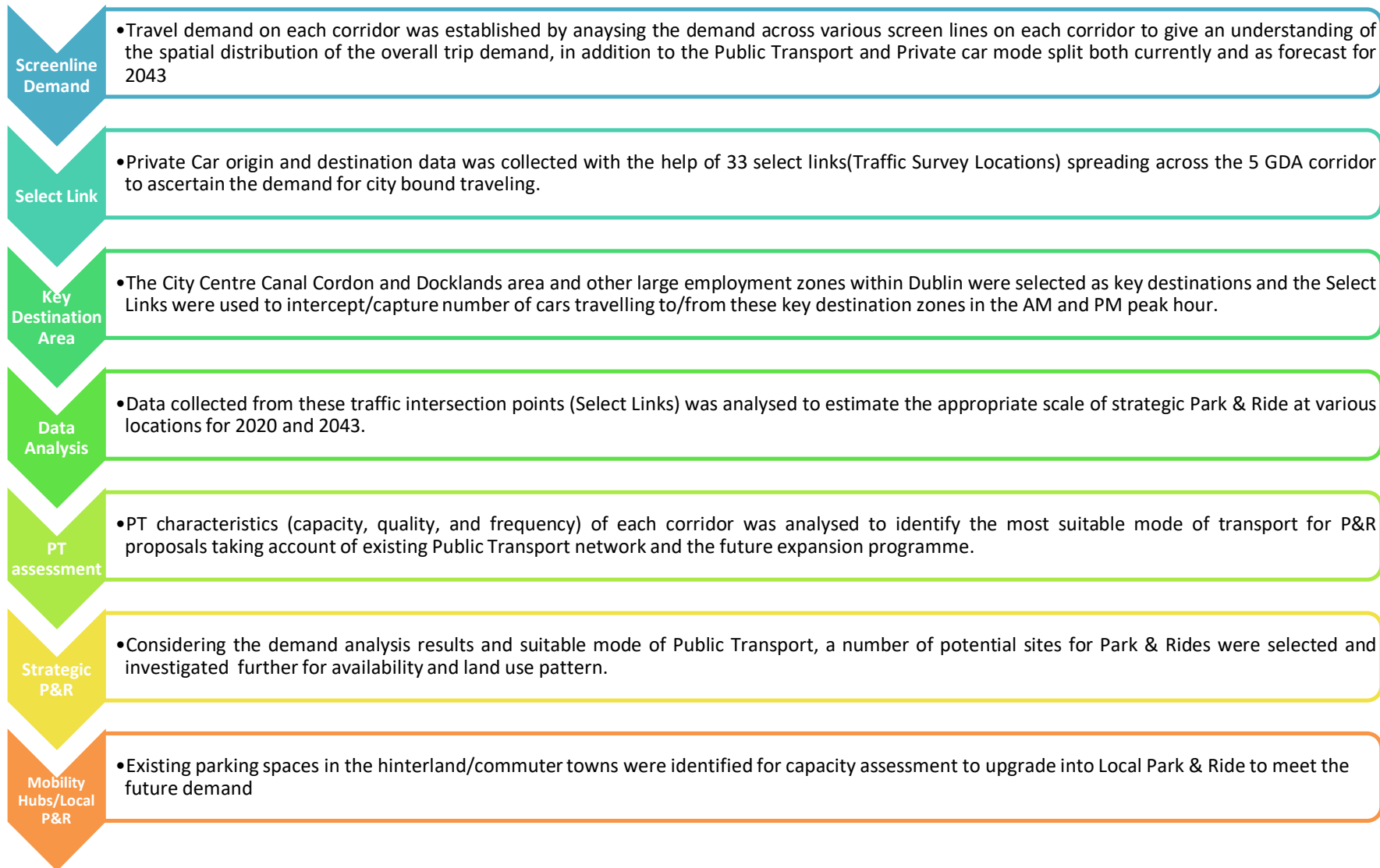


Figure 3.5: Workflow- Demand Analysis

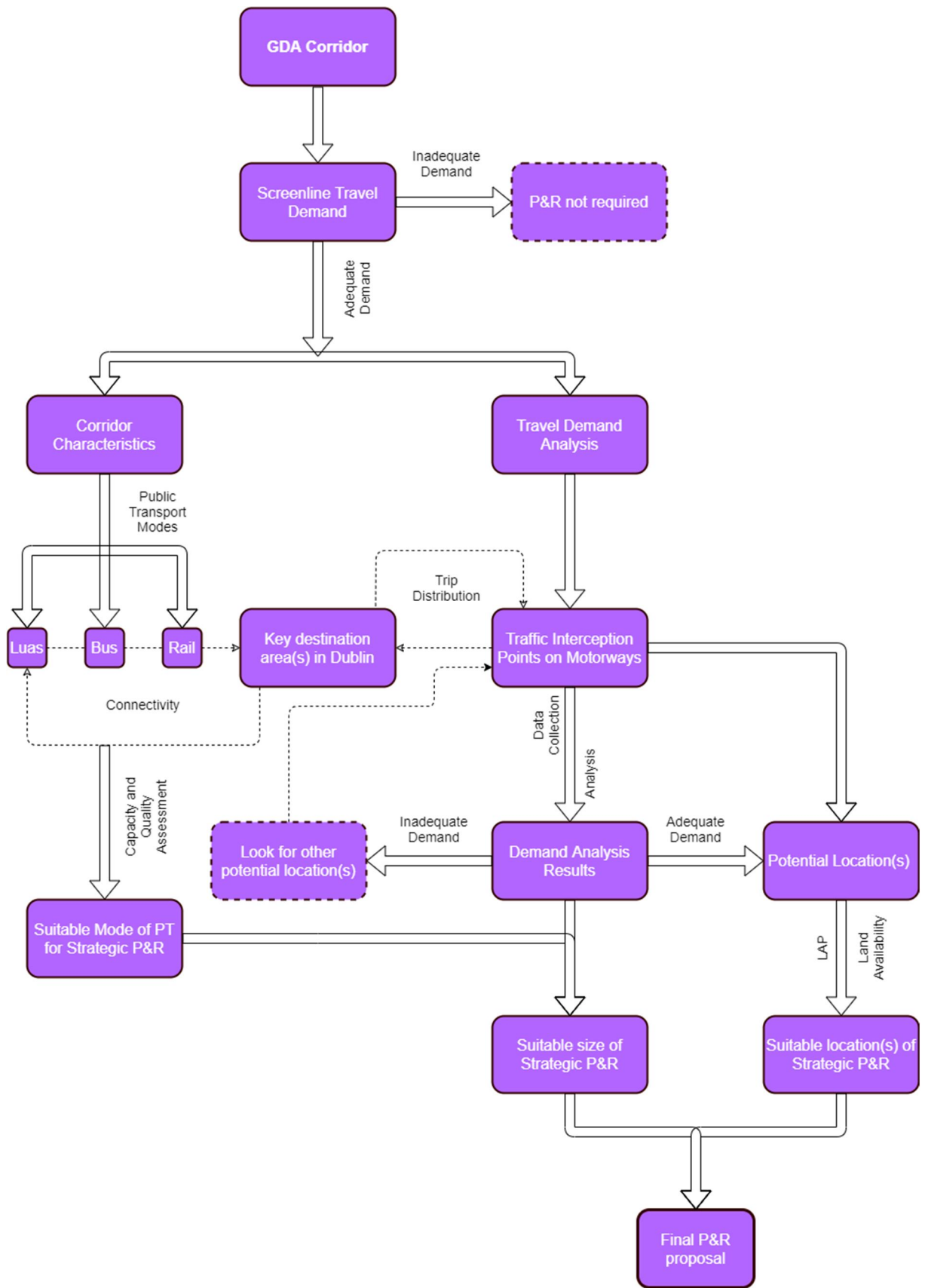


Figure 3.6: Flowchart- Demand Analysis

3.3 Local Park & Ride

Local Park & Ride sites provide parking facilities at transport nodes such as railway stations and bus stations serving smaller towns and villages on the regional public transport network. They expand the local catchment of these stations to a wider hinterland of these towns where public transport cannot replace the private car in the initial portion of the journey.

In May 2016, the National Transport Authority provided funding for a feasibility study into the expansion of car parking capacity at different railway stations shown to be operating at or near their parking capacities. The objective of the project was to identify and evaluate opportunities

to improve park & ride parking provision at these locations, thus improving public transport accessibility. Potential opportunities to improve demand management are also explored.

The Car Park Strategy report by Irish Rail (completed in August 2020) identified 24 (Figure 3.7) stations for car park expansion schemes. Funding was approved to progress the phased rollout of the strategy with an initial group of 12 stations. The NTA Park & Ride development office have been involved in developing the design and planning application for additional parking spaces at two stations. Consultants have been appointed to develop preliminary design works and statutory approvals for the next 8 priority stations.

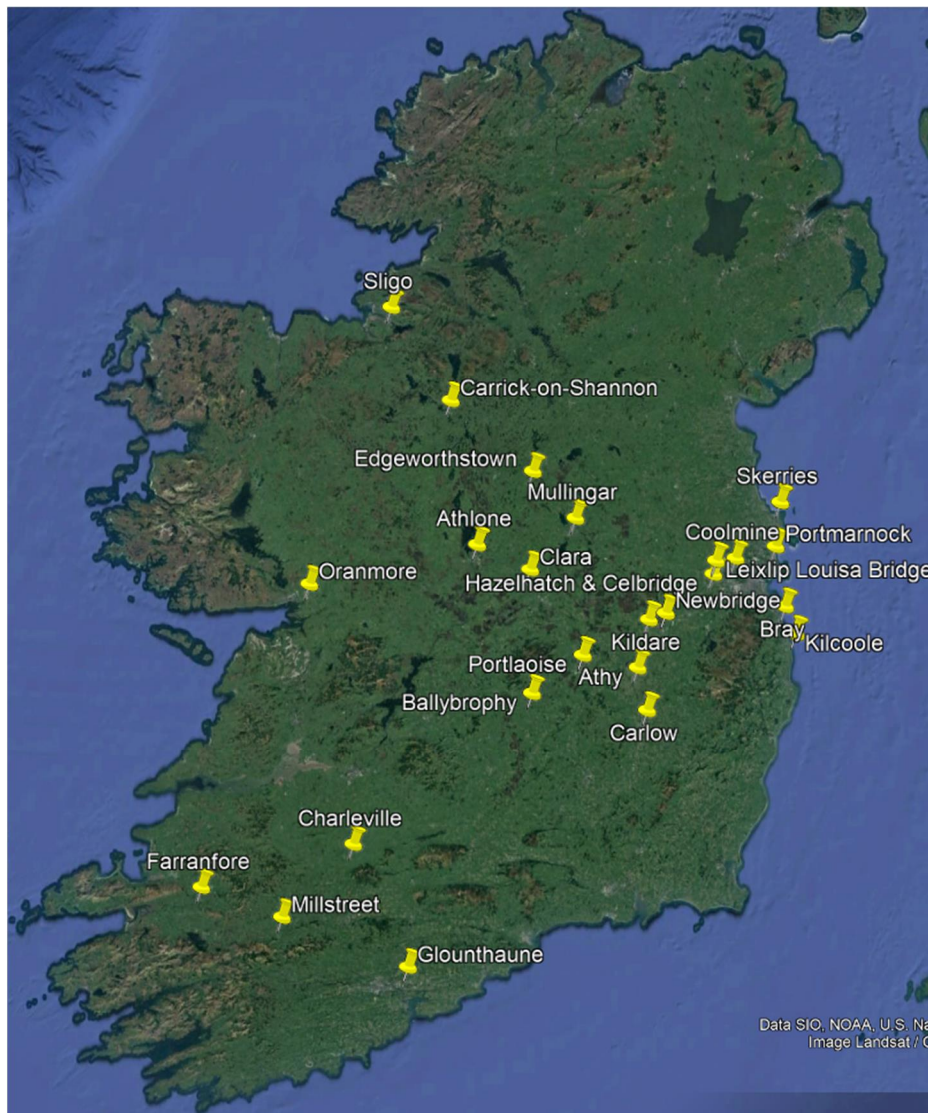


Figure 3.7: Carparks identified for expansion under the 2020 Irish Rail Car Park Strategy

CASE STUDY: NAVAN

Also, the example of Navan Town Centre Integrated Public Realm and Movement Plan / Navan Town Scheme (Navan 2030) programme exhibits how Local Park & Ride will help intercept car trips and persuade people to switch to public transportation, cycling and walking.

The Navan Park & Ride site is located on the outskirts of the town. It will be served by the Navan to Dublin City Centre Bus service. The Park & Ride will have numerous functions

- Provide Parking at the high-quality bus service node providing access for people in the hinterland of Navan to access Public

Transport to Dublin, other Regional Towns, and the local bus service.

- Provide for Park and Stride or Cycle to Navan Town Centre
- Reduce car travel into the Centre of Navan to access bus services.
- Reduce car travel into Navan Town Centre by providing a walking alternative for people living beyond walking or cycling distance from the Town.

The Park & Ride development office will continue to work with Local Authorities and Irish Rail to identify and provide Local park and ride sites or enhancement to existing facilities.



Figure 3.8: Overview location map of the potential Park & Ride site at Navan

3.4 Local Mobility Hubs

Local Mobility Hubs are multi-modal transportation hubs that provide high-frequency and high-capacity Public Transportation. They provide car parking, but they also focus on providing for interchange between public transportation and sustainable transportation modes by the provisions for cycle parking, bike rental, share cars and enhanced pedestrian and cyclist network links. These facilities will be integrated into existing urban or suburban areas through high quality walking and cycling facilities and wayfinding.

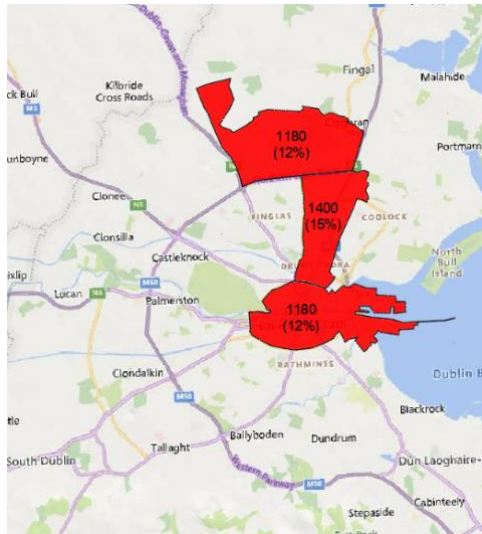
They aim to increase the number of people who use public transportation in their community by providing connections to stops and stations with a variety of accessibility options. They will also provide the opportunity to interchange between the car and high walking and cycling routes to key destinations. As a result, while a local mobility hub may be used for Park and Ride, it may also enable a person to park and then cycle to a city centre or main destination on a high-quality route. They could also allow cyclists to use high-quality public transportation or bus passengers to switch modes.

The NTA Park & Ride Development office will work with Local Authorities and stakeholders within the planning process to identify suitable locations for Mobility Hubs within the Metropolitan Area. This consultation will include input into Area Based Transport Assessments being carried out in the context of key development zones and suburban centres. Suitable locations will include key transport nodes and interchanges particularly in areas of high-density residential development. The local mobility hub should provide for the transport needs of residents in these locations minimising the need for car ownership.

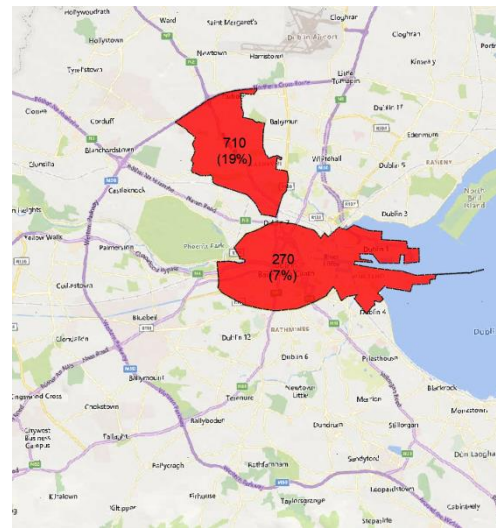
3.5 Key Observations

Data from traffic survey locations (select link) shows-

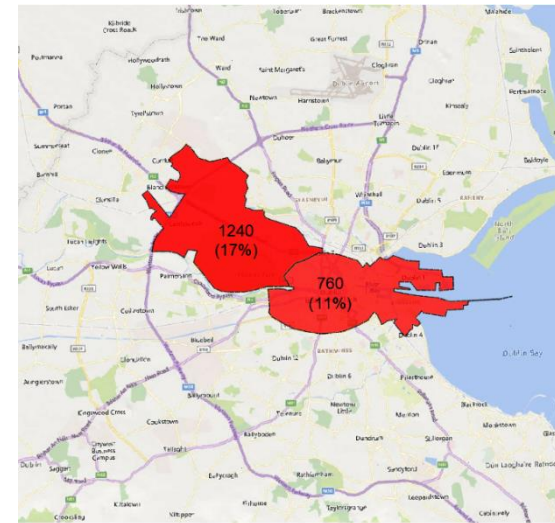
- Many of the GDA corridors have different commute patterns. The Canal Cordon and Docklands, as a major employment zone, draws car commuters from all the corridors; however, the data revealed that the number of trips to and from various other zones, such as Sandyford and Tallaght etc, is also important. For eg, on M4, 22% of total cars captured through the traffic interceptions point are alighting/departing from the canal cordon zone, whereas the volume on M11 is much lower at 4%. Figure 4.9 shows the origin/destination trip distributions of all the GDA corridor from the collected data.
- In all GDA corridors, the Canal Cordon and Docklands zone is well connected and served by various Public Transport modes from the hinterlands. However, few of Dublin's other employment zones and industrial areas, which have been observed to draw significant percentages/volumes of traffic, are not well connected/served by high-quality Public Transport service. A dedicated bus- service (e.g., Wicklow-Sandyford-UCD-City Centre, Sallins-City West-Tallaght) running from a Park & Ride site to these areas will provide public transport alternatives to commuters from the hinterland.
- A strategic Park & Ride has the potential to draw more trips because it will encourage people who currently have limited access to public transportation to use it more effectively, extending their choice of potential destinations.



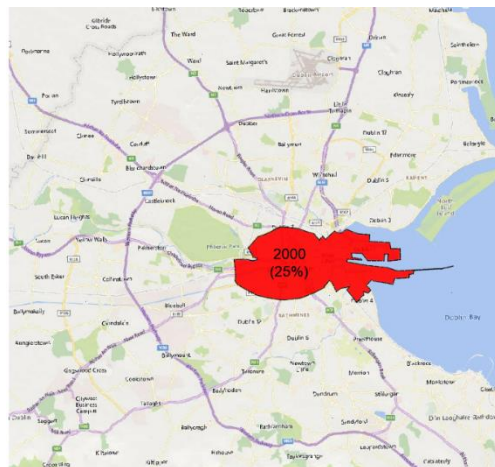
M1



M2



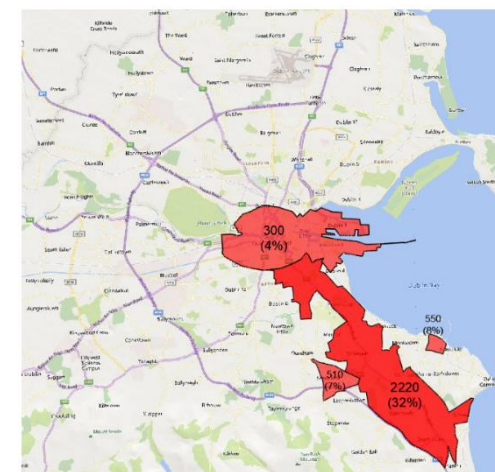
M3



M4



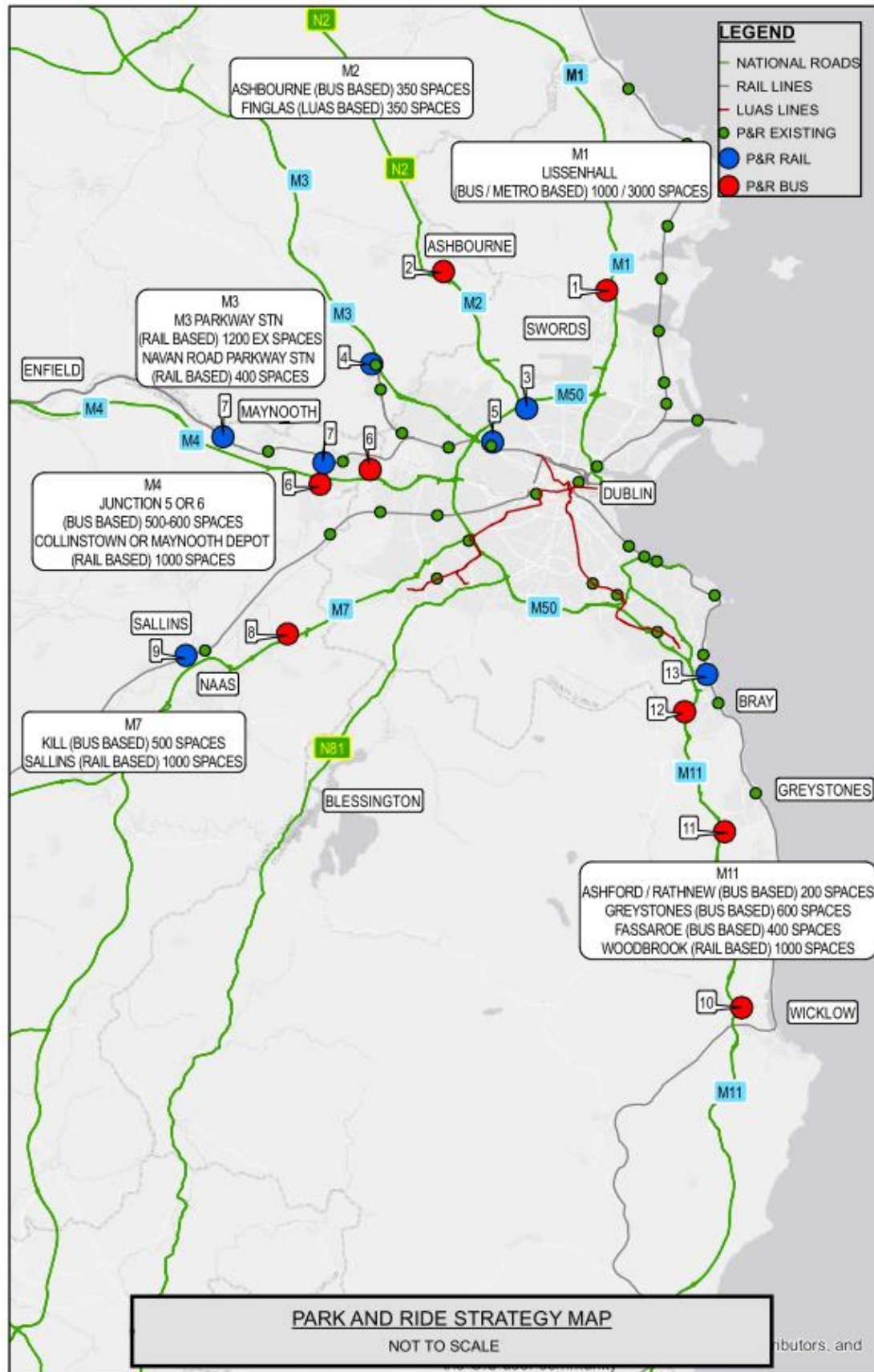
M7



M11

Figure 3.9: Distribution (Origin & Destination) of peak hour traffic volume from all GDA corridors

4 THE STRATEGY



Corridor	Number on Strategy Map	Type of P&R	Location	Nearest Junction	Indicative No. of Spaces	New bus service required	Considerations
A (M1/N1)	1	Bus/ Metro	Lissenhall	Junction 4	1000/ 3000	Yes	Bus Based P&R could potentially be superseded by Metrolink in the future.
B(i) (M2/N2)	2	Bus	Ashbourne	Junction 3	350	Yes	Bus Eireann route 103 potentially to be tendered out. Possibility to consider routing to the Park & Ride during this process.
	3	Luas	Luas Finlas	Junction 1	350	No	Part of the Luas Finlas Extension Plan. New bus terminus planned in the vicinity as part of the implementation of BusConnects
B(ii) (M3/N3)	4	Rail	M3 Parkway Station	Junction 5	1200	No	1200 currently existing. This is sufficient to meet current and future demand. Within the extents of DART+.
	5	Rail	Navan Road Parkway Station	Junction 1	400	No	102 spaces existing, to be increased to 400. Within the extents of DART+.
C (M4/N4)	6	Bus	Junction 5 OR Junction 6	Junction 5/6	500-600	No	Bus priority only provided to J5. BusConnects to be implemented in the vicinity of these junctions.
	7	Rail	Collinstown OR Maynooth Depot	Junction 6/7a	1000 (500 initially)	No	Within the extents of DART+.
D (M7/N7)	8	Bus	Kill	Junction 6	500	Yes	Can be provided in the shorter term until the rail option has been implemented.
	9	Rail	Sallins	Junction 9	1000	No	New station to be sited 1.1km west of the existing Sallins and Naas Station.
F (M11/N11)	10	Bus	Ashford/ Rathnew	Junction 16	200	Yes	All 3 can be delivered in the relatively short term.
	11	Bus	Greystones	Junction 11	600	Yes	
	12	Bus	Fassaroe	Junction 7	400	Yes	
	13	Rail	Woodbrook	Junction 5	1000	No	Longer term proposal once Dart+ has been implemented and in conjunction with the proposed M11 upgrades.

The NTA carried out detailed corridor studies for each of the corridors to investigate demand, existing and proposed public transport services and potential Park & Ride sites. Information was extracted from the Eastern Region Model, including select links (which detail how many cars pass a particular point along the corridor during the peak hour), screenlines (which detail how many cars cross a particular line and can cover multiple roads) and specific zone information which can detail population habits.

Through the development of the corridor studies and investigating the demand, solutions are being proposed for each corridor. 13 new Strategic Park & Ride sites are proposed across the 6 corridors. The Strategy Map above shows the locations of both the new Strategic Park & Ride sites alongside the existing Park & Ride sites.

4.1 Overview of the Strategic Park & Ride sites:

➤ Corridor A: M1/N1

A new bus-based Park & Ride site is proposed at Lissenhall off Junction 4. Demand analysis suggests 1000 spaces should be provided, with 500 spaces developed initially. It is proposed to provide a new direct bus service to the city centre.

The opportunity to provide a rail-based Park & Ride on this corridor is limited, due to the distance of the existing rail line from the M1. However, in the future, the implementation of Metrolink could provide a rail based option in a similar location, which could supersede the initial bus based Park & Ride site.

Key destination zones include: Airport zone (12%), suburban zone (15%), city centre zone (12%).

➤ Corridor B(i): M2/N2

A new bus-based Park & Ride with approx. 350 spaces is proposed south of Ashbourne off Junction 3. This site would be serviced by the existing Ashbourne and Rathoath bus services.

Also, a 350 space Luas based Park & Ride has been proposed as part of the Luas Finglas Extension

Plan. Once BusConnects has been implemented, a new bus terminus will be operational in the Finglas area potentially leading to a multi nodal transport hub.

Key destination zones include: Suburban zone (19%), city centre zone (7%).

➤ Corridor B(ii): M3/N3

2No rail based Park & Rides sites are proposed along this corridor. The existing Park & Ride at the M3 Parkway Station has 1200 spaces. The proposed DART+ scheme will substantially increase frequency and capacity of trains to this Park & Ride site, which is sufficient to meet current and future demand for city commuters. It is also recommended to expand the existing car park at Navan Road Parkway Station up to approx. 400 spaces to meet the demand.

Both stations are within the extents of the DART+ programme which will enhance the quality and frequency of the service once implemented.

Key destination zones include: Suburban zone (17%), city centre zone (11%).

➤ Corridor C: M4/N4

It is proposed to provide both a rail based and bus-based Park & Ride site along this corridor.

It is recommended to provide a new bus-based Park & Ride site in the vicinity of either Junction 5 or Junction 6 with approx. 500-600 spaces, with 500 to be implemented initially in the short term.

A rail-based Park & Ride is also recommended due to the implementation of DART+ and the future upgrade to the frequency and quality of services. In order to intercept a high number of commuters, it is recommended that a rail-based Park & Ride site be provided at either a new Collinstown Station or in the vicinity of the new Maynooth Depot at the future Junction 7a with approx 1000 spaces (500 initially).

Key destination zones include: City centre zone (25%).

➤ **Corridor D: M7/N7**

It is proposed to provide both a rail based and bus-based Park & Ride along this corridor.

A new rail-based Park & Ride is recommended on the west of the Sallins bypass, comprising approx. 1000 spaces (500 to be delivered initially) with a new railway station sited approx. 1.1km to the west of the existing Sallins and Naas station.

A bus-based Park & Ride site with approx. 500 spaces is also proposed in the vicinity of Junction 7 at Kill, which could be delivered in the shorter term in advance of the new station west of Sallins. This would require adjustment to existing bus services or provision of a new dedicated bus service to the city centre.

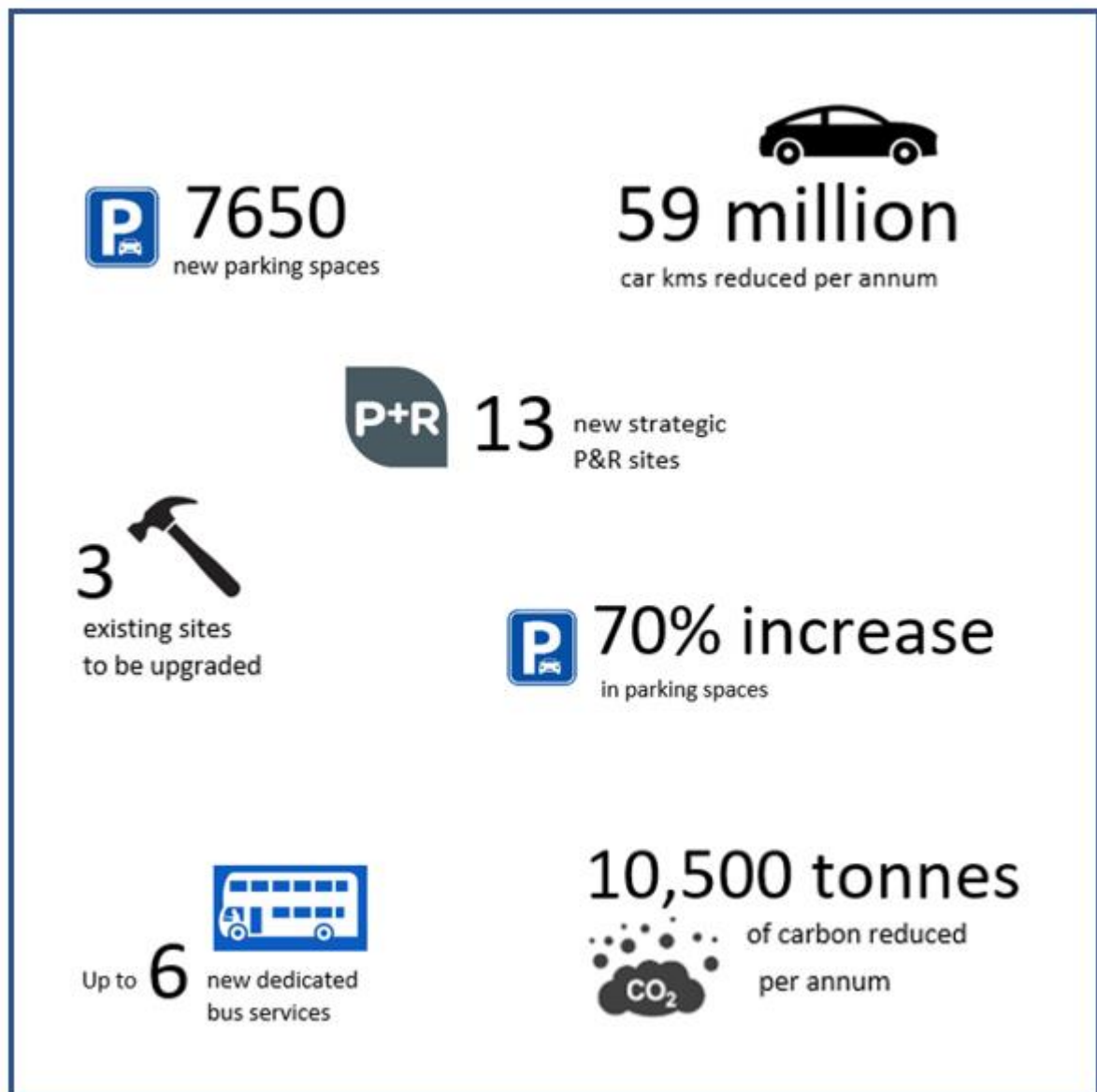
Key destination zones include: Suburban zone (7%), city centre zone (15%).

➤ **Corridor F: M1/N11**

It is proposed to provide 3 bus-based Park & Ride sites along this corridor; a small scale site of 200 spaces at Junction 16 near Ashford/ Rathnew, a 600 space site at Junction 11 near Greystones and a 400 space Park & Ride at Junction 6 at Fassaroe. These sites can be delivered in the relatively short term and will require new dedicated bus services. New bus priority measures on the M11/N11 between Loughlinstown and Kilmacanogue will enhance the P & R offer.

Once the DART+ has been implemented, there will be an opportunity to provide a 1000 spaces rail based Park & Ride site at Woodbrook. This can be implemented in the longer term, and in conjunction with the proposed M11 upgrade of Junction 5.

Key destination zones include: Suburban zone (32%), city centre zone (4%), Sandyford 7%), Dun Laoghaire (8%).



4.2 Facts and Figures

There are currently 10,886 spaces for Park & Ride sites throughout the GDA. The majority are rail based, with the largest being at the M3 Parkway Station. The provision of these new Park & Ride facilities will add approximately 7650 new parking spaces in total across the 12 new Strategic sites. It is anticipated that up to 6 new dedicated bus services will be introduced at those sites where there is not a current high-quality service in the vicinity. It is also anticipated that at full capacity, the number of car kms per annum could be potentially reduced by over 59 million per year and

in turn could contribute to a reduction in carbon emissions by 10,500 tonnes per annum.

In addition to the Strategic Park & Ride sites, Irish Rail carried out a Car Park Strategy in August 2020 which identified necessary upgrades required to existing local Park & Ride sites. 3No of these sites are within these corridors; Greystones, Hazelhatch & Celbridge, and Portmarnock, with an addition of 280 spaces between the Hazelhatch & Celbridge, and Portmarnock sites.

Local Park & Ride sites should also be considered, in an attempt to reduce the unofficial Park & Ride that is currently occurring in the centre of Regional towns, e.g., Enfield.

5 DESIGNING FOR PARK & RIDE

5.1 Key Design Considerations

In the development of Park & Ride facilities, it is necessary to be cognisant of a variety of key design considerations. In developing the strategy and the prioritisation of sites for implementation, the following points should be considered:

➤ Capacity of the public transport services

In developing both strategic and local Park & Ride facilities, the capacity of the public transport services to accommodate Park & Ride users is a critical consideration. Existing users of the public transport should not be unduly affected by increased patronage associated with Park & Ride usage. Integration of the Park & Ride facilities with planned capacity upgrades or services enhancements is critical to ensure the success of Park & Ride.

Consideration should be given in relation to bus based Park & Ride sites, where a new dedicated service may need to be provided with direct links to the city centre.

➤ Interchange

The development of Park & Ride facilities should also consider the opportunities for provision of public transport interchange. Parking facilities should not be provided at the expense of bus set down or turning provision. It is also important to consider the potential for future public transport services.

➤ Walking and Cycling Networks

At those strategic Park & Ride sites located adjacent to the major interurban motorway network, the provision of safe cycle and walking routes may be challenging, and the provision of cycling and walking facilities will require consideration on a case-by-case basis.

➤ Cycling Facilities

High quality cycle parking facilities can encourage cycling to key public transport nodes and the cycle network should link into the Park & Ride network. The ongoing development of e-bikes further

increases the catchment of cycling to public transport. However, this also creates a greater expectation for safe and secure bicycle parking and cycle routes.

➤ Car Sharing Facilities

The provision of car sharing facilities should be considered, as outlined under Demand Management in the GDA Transport Strategy. In theory, car sharing spaces can replace up to 15 no. traditional car parking spaces and should be taken into consideration when implementing Park & Ride facilities.

➤ EV Charging and future proofing

Consideration should be given to appropriate level of EV charging point provision, in every Park & Ride site, and ensure that the site is future proofed to provide large number of EV charging points should they become necessary.

➤ Accessibility to the road network

For Park & Ride sites to be attractive to users, particularly at strategic Park & Ride locations, they should be located proximate to the major road network. While direct access may not always be possible or desirable, minimizing the length of diversion for car users to the interchange points is an important consideration.

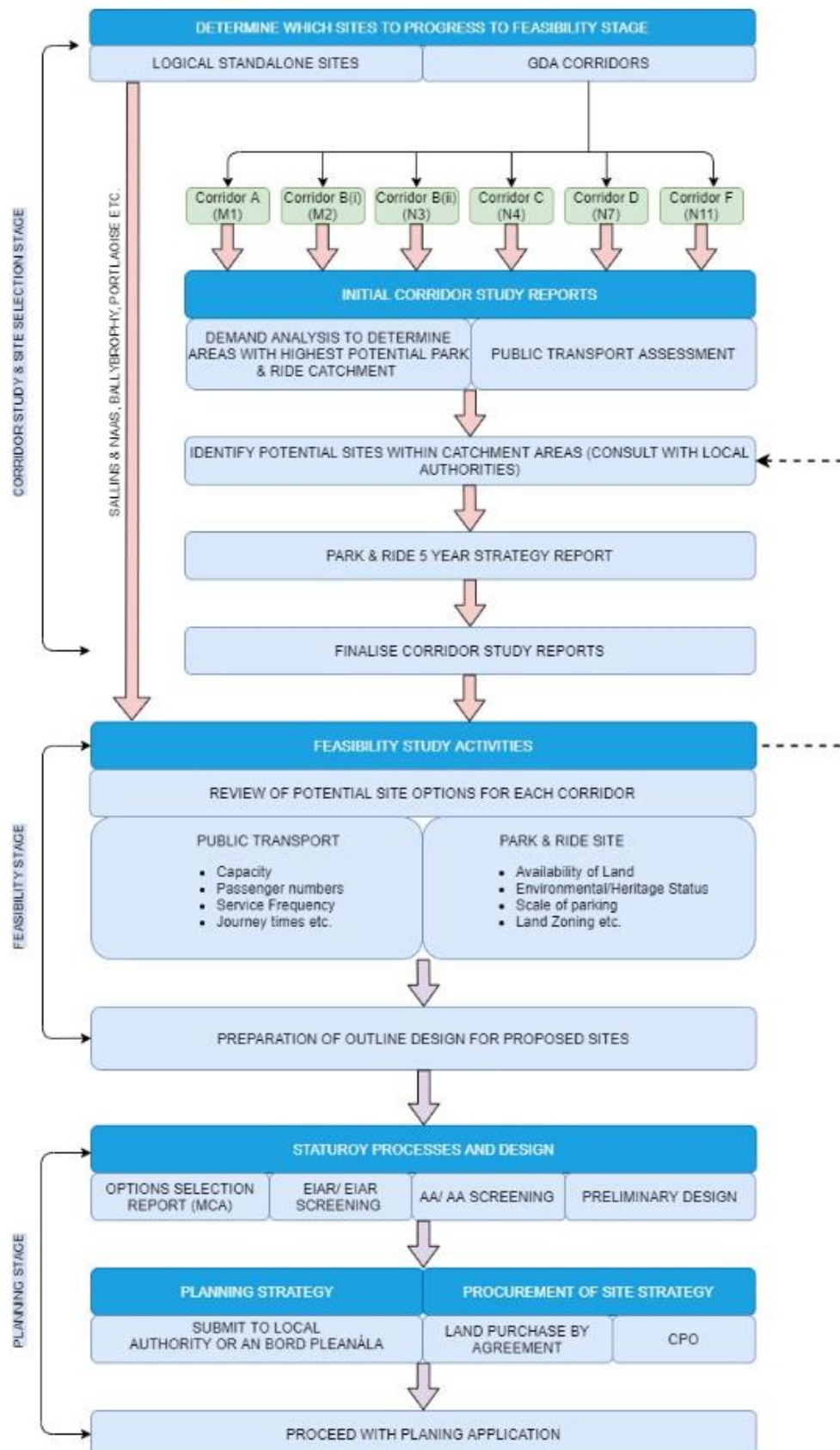
In addition, as noted in the Transport Strategy for the GDA, an essential prerequisite of Park & Ride provision is that such facilities improve public transport accessibility without unduly worsening road congestion, or increasing the total distance travelled by car. In practice, this means that Park & Ride car parks should be located in areas where the road network has the capacity to absorb the impact of car traffic and should not be located where they might encourage people who would otherwise access public transport locally, to drive further to access a site, thus adding to congestion.

➤ **Future development**

Key public transport nodes can represent desirable locations for high density development, particularly within the metropolitan areas. In the short term, the provision of Park & Ride adjacent to these key public transport nodes is important in reducing the potential for unsustainable travel patterns to develop. However, the provision of Park & Ride facilities should not preclude the future development of lands adjacent and opportunities to integrate facilities into future developments should be explored.

A range of Park & Ride interventions are proposed on the various GDA Corridors to achieve appropriate interception of car trips to high quality public transport.

6 IMPLEMENTATION OF THE STRATEGY



The Park & Ride Development Office will lead the implementation of the Park & Ride 5 Year Strategy and will work alongside all agencies involved in the delivery of the projects.

The Framework Diagram above sets out the key stages and tasks required to implement the Strategy effectively.

The timelines associated with the implementation of the Strategy over the next 5 years are outlined in Figure 6.1. Although most of the sites can operate at effectively integrating with the existing public transport systems, a number of sites will be dependent on the progress and implementation of various public transport infrastructure expansion programmes, which are noted in the Remarks column below.

	Feasibility Study & Site Selection (Including consultation)
	Preparation of Planning Application and Land Acquisition/CPO
	Planning Process
	Detailed Design & Tender
	Construction

		2021	2022	2023	2024	2025	2026	Remarks
M11	Fassaroe							
	Greystones							
	Ashford-Rathnew							
	Woodbrook- Dart Station							New woodbrook DART station is set to start operation with 100+ car parking spaces. Work for a new Park & Ride at the station to be progressed after assessing the demand for additional spaces in future.
M7	Sallins & Naas-Railway Station ¹							To be delivered in parallel with DART+ South West programme.
	Kill							
M4	J5/J6							
	Collinstown/Maynooth-Railway Station/Depot ²							To be delivered in parallel with DART+ West programme.
M3	Navan Road Parkway-Railway Station							To be delivered in parallel with DART+ West programme.
M2	Luas Finglas							New Park & Ride at Charsetown Luas station to be delivered with Luas Finglas Extension programme.
	Ashbourne							
M1	Lissenhall							

¹ New railway station 1.2km west of existing Sallins & Naas station

² New railway station at Collinstown

Figure 6.1: Park & Ride Implementation Programme

➤ Operational Plan

The NTA will plan, deliver and fund various Park & Ride facilities, including Local and Mobility Hub type sites.

It is not anticipated that there will be an overall, interactive Park & Ride programme; each site has a different key part to play. Sites will be developed individually, on a case by case basis, with the various delivery partners.

New bus based Park & Ride sites, due to the phasing of implementation, will be initially run as separate operations. Over time, they may be grouped into an overall contract.

The procurement strategy of operation will be done on a phased basis and will be kept under constant review, as more sites develop and an opportunity for a combined contract will be review. The precise procurement strategies will be developed in parallel with the design and infrastructure of each site.

Currently, there is a bus based Park & Ride site operational in Cork; Black Ash Park & Ride, with the bus service operated by Bus Eireann. This is a barrier parking system with a dual parking/bus fare, which is paid on foot prior to exiting the car park. It is anticipated that the new bus based Park & Rides sites will operate in a similar manner, with a benchmark to be set for the pricing, which would be in line with the fare structure across the region. Eventually, it is anticipated that the ticketing will be developed along with the next generation ticketing teams to reduce the barriers to accessing the Park & Ride services.

➤ Implementation of Strategic Park & Ride

In general, provision of Strategic Park & Ride sites is an integral part of the development of the major Public Transport Investment Projects, such as MetroLink and BusConnects. The Park & Ride Development Office will work with the project teams to ensure appropriate Park & Ride facilities are incorporated. However, the provision of these facilities can only be in place when the enhanced public transport services are provided and

therefore the individual projects programmes drive the timeline for delivery.

➤ Implementation of Local Park & Ride

All existing local Park & Ride facilities at rail and bus stations were reviewed in 2019 to inform the accessibility programme. Discussions with Iarnród Éireann on the opportunities and priorities for upgrading these facilities are on-going.

The Park & Ride development office will continue to work with Local Authorities and Irish Rail to identify and provide Local park and ride sites or enhancement to existing facilities.

➤ Implementation of Local Mobility Hubs

The NTA Park & Ride Development office will work with Local Authorities and stakeholders within the planning process to identify suitable locations for Mobility Hubs within the Metropolitan Area. This consultation will include input into Area Based Transport Assessments being carried out in the context of key development zones and suburban centres. Suitable locations will include key transport nodes and interchanges particularly in areas of high-density residential development. The local mobility hub should provide for the transport needs of residents in these locations minimising the need for car ownership.

DELIVERING THE STRATEGY

CATEGORY OF PARK & RIDE	STRATEGIC PARK & RIDE			LOCAL PARK & RIDE			LOCAL MOBILITY HUBS		
DELIVERY MECHANISMS	NEW PROJECTS BusConnects Metrolink Luas Expansion	NEW DEVELOPMENTS SDZs LAPs Masterplans	ENHANCED AROUND EXISTING PT PROJECTS Commuter Rail & DART Luas	ACCESSIBILITY PROGRAMME	EXISTING RAIL STATIONS	EXISTING BUS STATIONS	ENHANCED EXISTING FACILITIES	NEW LOCATIONS	NEW DEVELOPMENTS
DELIVERY PARTNERS	TII BCID (NTA)	P&R DO LAs DEVELOPERS	P&R DO IÉ TII LAs	Transport Operators	IÉ LAs Developers	IÉ LAs Developers	Transport Operators LAs Developers	P&R DO LAs Developers	P&R DO LAs Developers