Kildare County Council
Comhairle Contae Chill Dara

October 10th, 2018

To: Cathaoirleach and Members of the Kildare/Newbridge Municipal District
Re: Draft Newbridge Town Transport Framework
Cc: Niall Morrissey, DOS, Joe Boland, DOS,
John Mc Gowan, SE, John Coppinger, SE, George Willoughby, SEE, Brenda Cuddy, SEE, Brian Martin, AO

Please find attached a copy of the Draft Newbridge Town Transport Framework, produced by the National Transport Authority (NTA).

As agreed at the September MD meeting, a meeting with NTA has been scheduled to take place on Wednesday October 17th at 2pm in the Council Chamber.

The attached document is issued to the Members on the basis that neither extracts from or the full Draft Report will be published or discussed in a public forum or that it will not be used on social media until after it has been discussed with the NTA and considered by the elected members at the proposed in-committee meeting on Wednesday October 17th, 2018.

NOTE:

Confirmation of attendance at the meeting has not yet been received from the NTA. The Members will be advised by email as soon as confirmation is received.

Newbridge Town

Transport Framework

2018

Draft

July 2018

INTRODUCTION

Background

Following a meeting held in 2017, the National Transport Authority (NTA) and Kildare County Council agreed to prepare a Transport Framework for Newbridge. The core aim is to create a Transport Framework for Newbridge which will provide the context for the future transport requirements of the town.

Purpose of the Framework

The Framework will: examine internal and external demand in Newbridge; examine the existing transport networks; analyse the public realm in terms of permeability; and analyse traffic circulation and junctions. The Framework will set out objectives for future transport options for the town and measures to achieve them.

Framework Structure

The Framework includes an introduction to Newbridge which sets out the baseline information upon which analysis will be based. The Framework analyses existing and future travel demand, including mode share. High level objectives for the Framework are outlined along with options to enhance the existing networks. A final Transport Framework is then presented.

CONTENTS

1.0 INTRODUCTION TO NEWBRIDGE AND BASELINE INFORMATION

1.1 Demographic and Employment Overview

1.1.1 Population

In 2011 the population of Newbridge was 21,561. By 2016 this had risen to 22,742. This is a 5% population increase in the period. It is therefore one of the most populous towns in Kildare. The projected population for 2035 is 31,167 persons (Source: NTA Eastern Regional Model). This is a projected increase of roughly 37% within the next twenty years.

Figure 1.1 below shows the population density across Newbridge. The most densely populated areas are to the southwest of the town with some pockets recently developed to the northwest of the rail line.

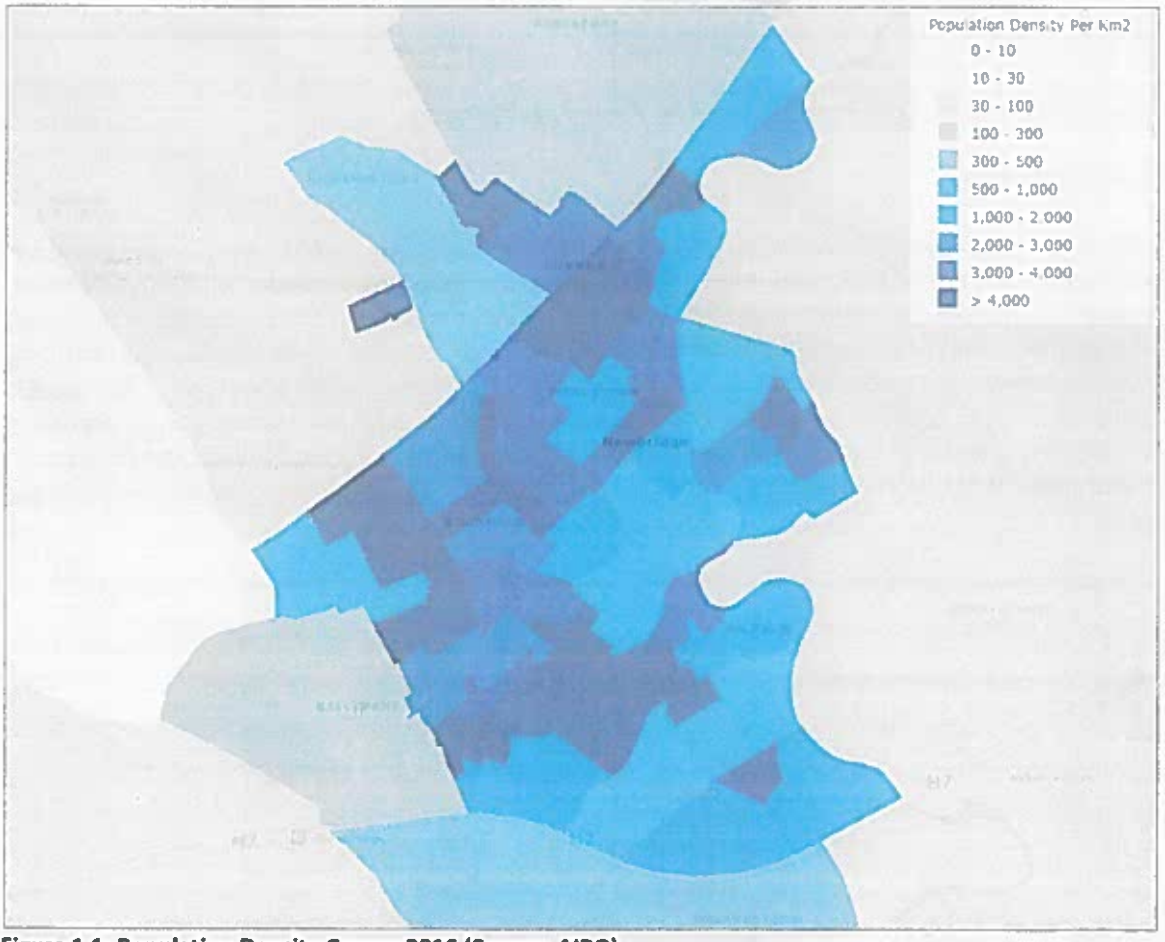

Figure 1.1: Population Density Census 2016 (Source: AIRO)

Figure 1.2 below shows the build out of residential development which occurred within Newbridge between 2000 and 2005, the most significant of which was located to the south of the town and with some infill residential development adjoining the railway line to its east. Between 2005 and 2010 residential development was more limited but marked the spread of the town to the northwest of the railway line. As would be expected little residential development occurred between 2010 and 2016 as a result of the economic downturn.

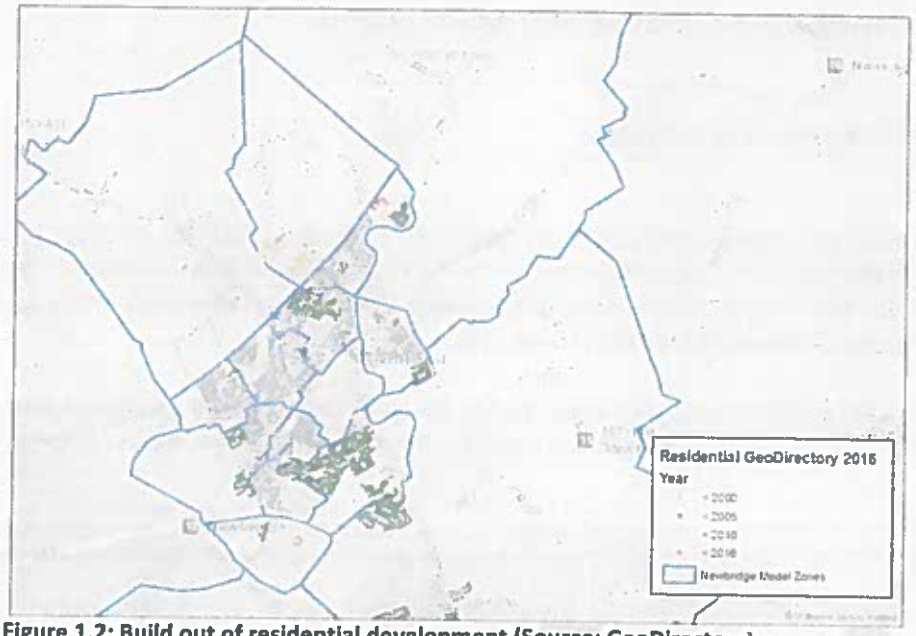

Figure 1.2: Build out of residential development (Source: GeoDirectory)

1.1.2 Employment

There were 8,695 jobs located within the settlement of Newbridge in 2011 giving a population to employment ratio of 1:2.5. Figure 1.3 below shows the location of residential and commercial properties in Newbridge and the surrounding areas. There is significant manufacturing and retailing employment within the town. Both Pfizer and Lidl are large employers. Newbridge Business Park and the Whitewater Shopping Centre also have large numbers of employees. There are 1,861 people employed in the retail sector in Newbridge (2011). A large area of land to the east of the town (beside Pfizer and Lidl) is subject to an industrial and warehouse zoning and will be the subject of a masterplan. These lands have the potential to greatly increase the employment opportunities in the town.

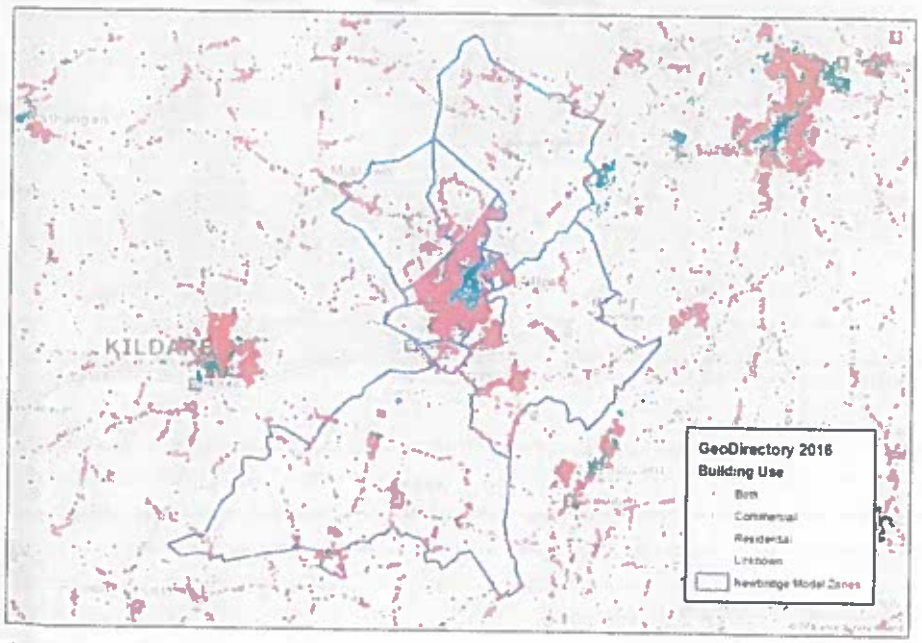

Figure 1.3: Location of residential and commercial (Source: Geodirectory)

1.1.3 Car Ownership

There are 1,107 households with no access to a car. This equates to 14% of households within the town in comparison to 18% nationally. The percentage of households without a car in Newbridge is similar to that of other towns within the GDA such as Balbriggan (18%) and Navan (13%). In the neighbouring town of Naas only 9% of households have no access to a car.

Figure 1.4 below illustrates the percentage of households per square kilometre that have no access to a car. The areas that have a higher percentage of no car households appear to be centrally located within the town centre as well as one area to the northwest of the railway line.

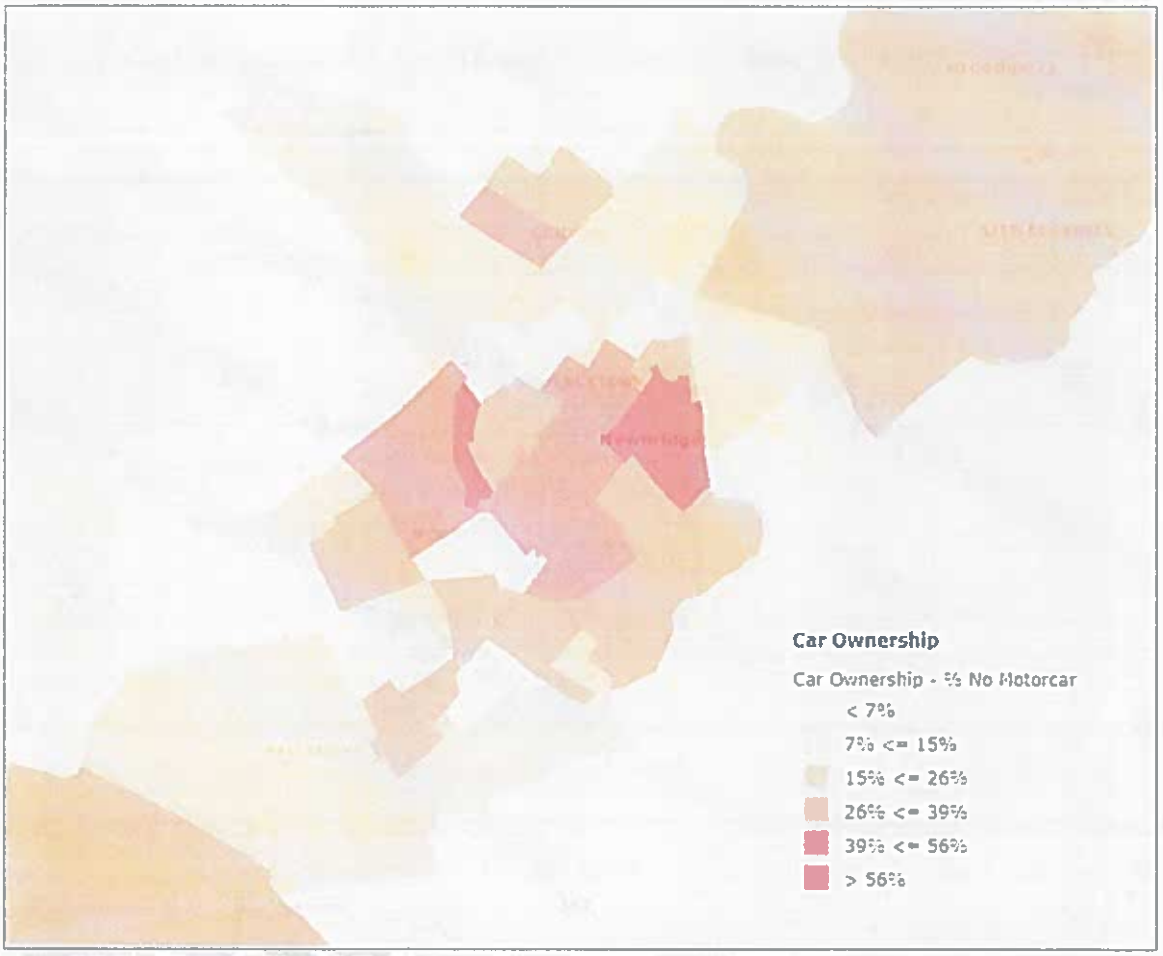

Figure 1.4: % of Households with No Motorcar Census 2016 (Source: AIRO)

1.2 Significant Origins and Destinations Outside of the Subject Area

Newbridge is located roughly 50km to the south-west of Dublin city centre and therefore has a strong relationship with Dublin city and suburbs for access to services, education and employment. Important local destinations within the County include the neighbouring towns of Naas and Kildare. Kildare is 8km to the west, while Naas is 12km to the north-east. There is movement in both directions between these towns and Newbridge.

The Kildare Village Retail Outlet is a significant destination in Kildare while Naas has the closest general hospital. Also located between Newbridge and Naas is the Ladytown Business Park/ Toughers Industrial Estate.

There are also a substantial number of trips from Monasterevin and Kilcullen to Newbridge (See Section 2.2).

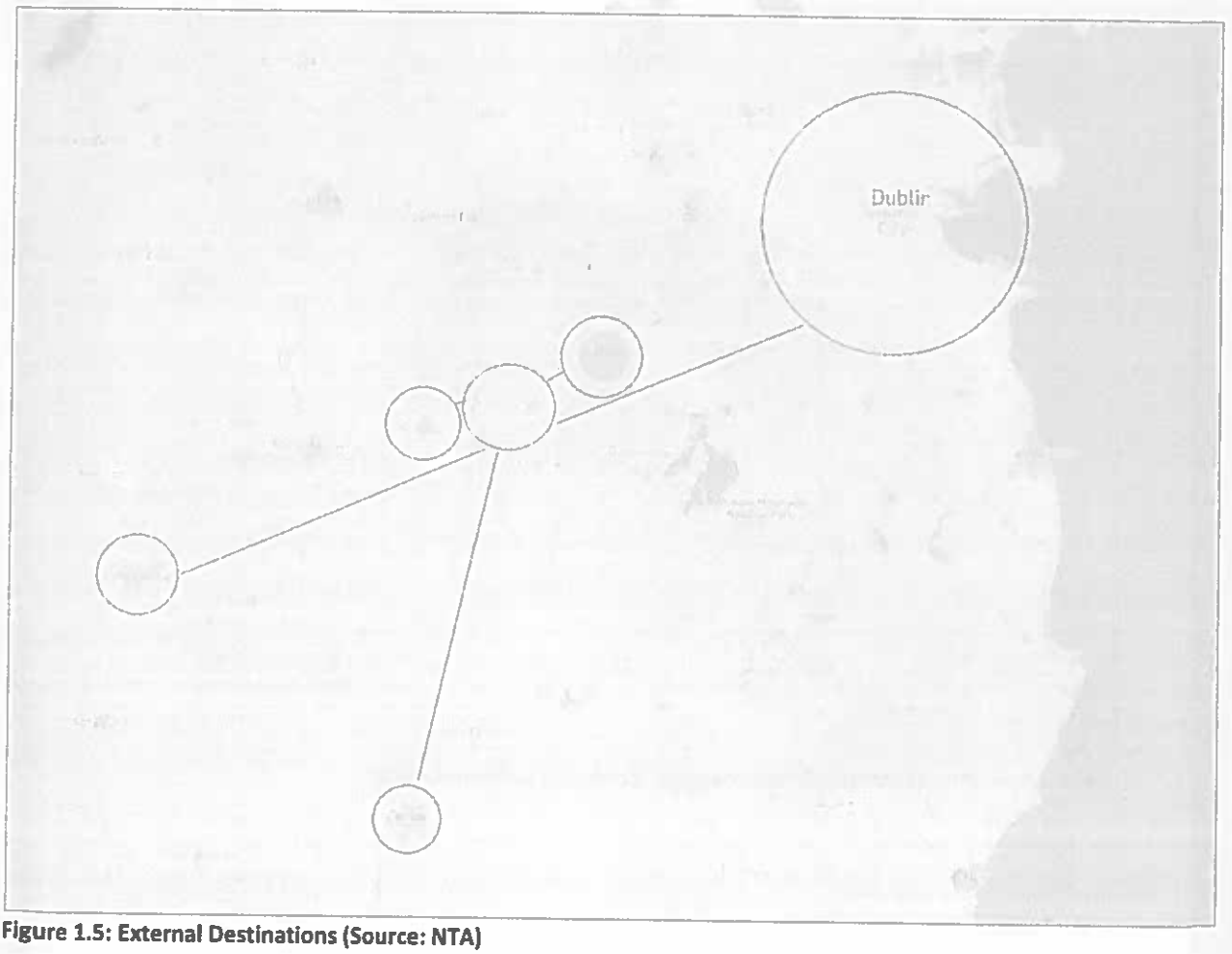

Figure 1.5: External Destinations (Source: NTA)

1.3 Topography Characteristics

The town centre is defined by a long main street running 1.2km from the River Liffey in the northeast to the junction of Edward Street and Military Road in the southwest. The northern (and more historic) side of the town is characterised by a number of smaller streets forming grid like patterns with a fine urban grain. However, the southern side of the town centre is less defined, as the streetscape continues to evolve on the former Barracks and Irish Rope sites.

St. Conleth's Bridge is the only crossing point of the River Liffey within the town. The main areas for passive and active recreational purposes are located along the River Liffey. Market Square is the only designated civic space in the town centre.

In accordance with the *Newbridge Local Area Plan 2017-2023*, much of the recent residential development in the town has been northwest of the railway in Roseberry and The Meadows and to the south in areas such as Kilbelin and Walshestown.

There are a number of natural and man-made constraints which have influenced the historic development of the town: (See Figure 1.7 below)

- The Curragh - a proposed Natural Heritage Area (pNHA) located to the south and southwest of Newbridge;
- Pollardstown Fen and Mouds Bog – both areas lie to the north and are candidate Special Areas of Conservation (cSAC's);
- Well-established stud farms are located in close proximity to the town;
- The River Liffey flows adjacent east of the town centre;
- The M7 motorway situated to the south; and
- Newbridge Station and the railway line to the north.

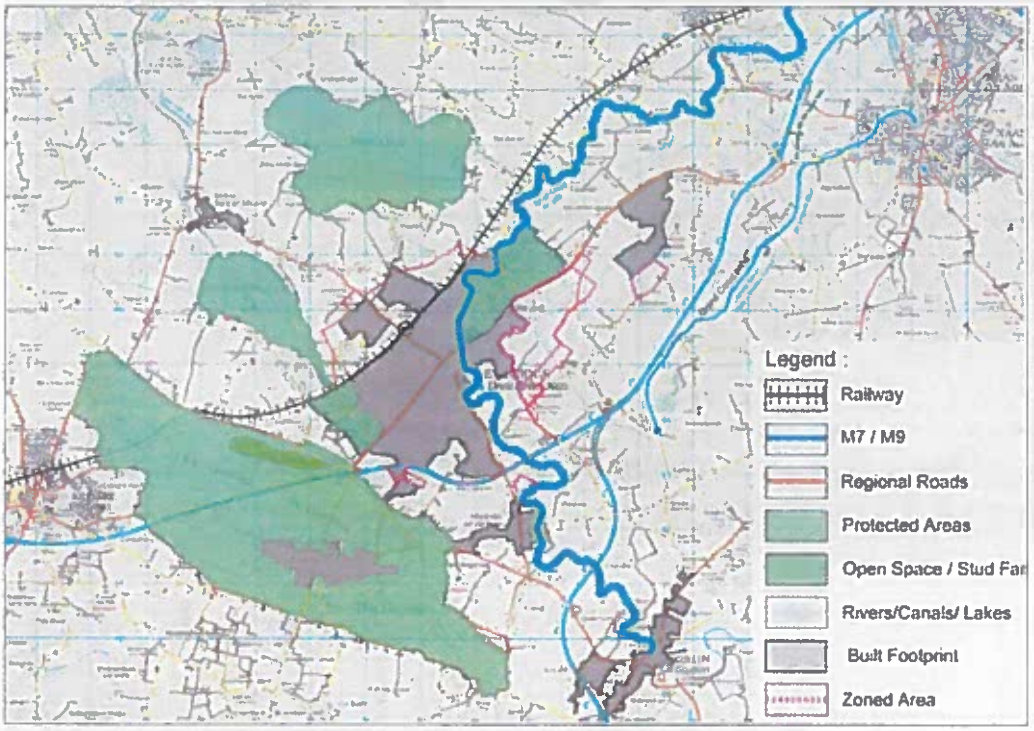

Figure 1.7: Newbridge Strategic Context (Source: Newbridge Local Area Plan 2013-2019)

1.4 Existing Land Uses

Figure 1.8 provides a generalised depiction of key land uses in Newbridge. Retail is largely located in the town centre to the southeast of Main Street. The Whitewater Shopping Centre, located on Edward Street, opened in 2006 and has over 70 retailers. It also has a 6-screen cinema (opened in 2009) and approximately 1,700 no. car parking spaces. The adjacent Courtyard Shopping Centre also gives a retail offering and has approximately 850 no. car parking spaces.

There are two key employment areas namely the Newbridge Business Park to the south-west of the town and the Little Connell area (Pfizer, Lidl) to the north-east, the latter of which is to be subject to a Masterplan. Between Newbridge and Naas there is also employment located in the Toughers Industrial Estate/ Ladytown Business Park. Newbridge Silverware is also a significant tourist attraction within the town.

The majority of the residential provision is to the west of the river. However, there are some lands zoned to the east of the river for future residential development. New residential development has also commenced to the northwest of the railway line, with further development in accordance with the zoning still to commence. Some local services such as schools have been developed in this area.

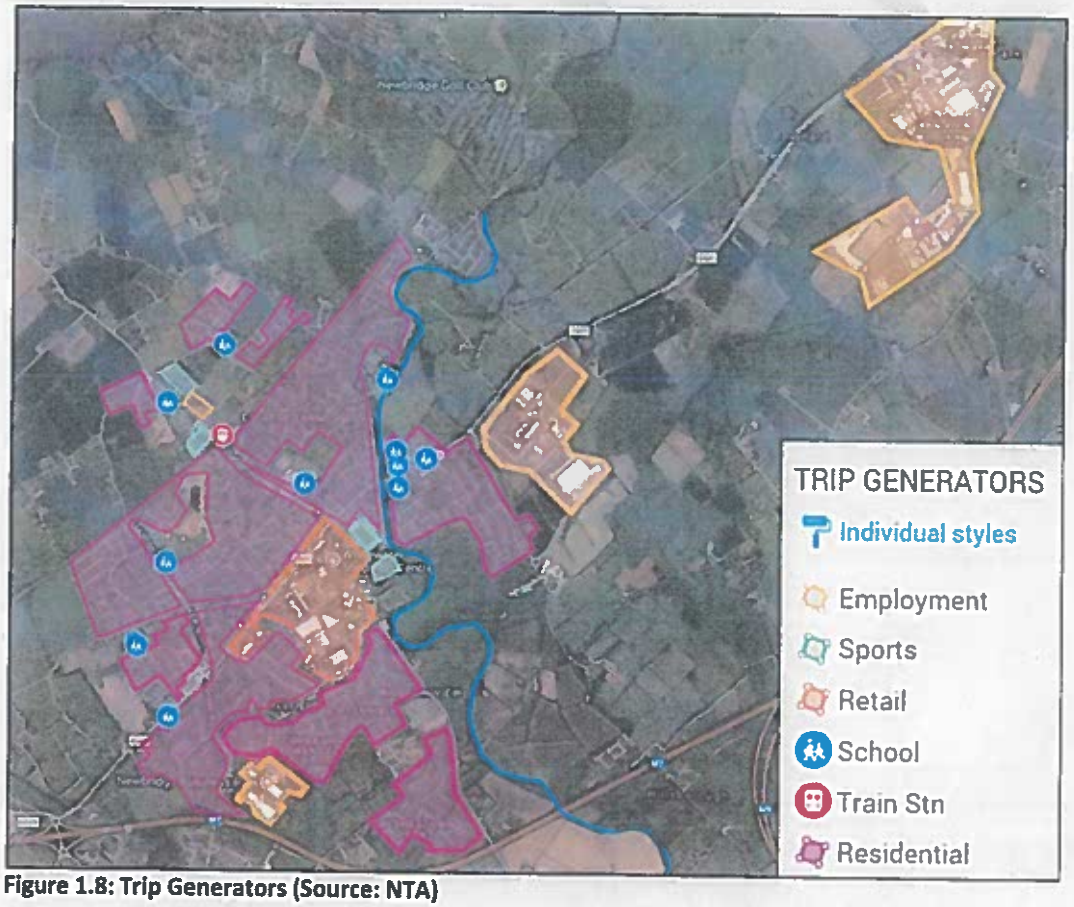

Figure 1.8: Trip Generators (Source: NTA)

1.5 Sectors Within Newbridge

In order to understand the characteristics of travel demand within Newbridge a 'Sector Analysis' was carried out. Newbridge was segmented into seven broad sectors, based largely on function/usage e.g. residential. The sectors are comprised of zones from the NTA Model and are illustrated in Figure 1.9 below. Table 1.1 provides an overview of the characteristics of each sector including key destinations and also points towards potential challenges/opportunities for transport provision.

The NTA model was then used to illustrate trip demand and distribution relating to Newbridge and each of the sectors for 2011 and 2035 the Strategy (*Transport Strategy for the Greater Dublin Area 2016-2035*) year. This is discussed further in Section 2.

Figure 1.9: Newbridge Divided into Sectors (Source: NTA Eastern Regional Model)

Sector	Description	High level Issues / Opportunities
A	Town centre sector characterised by mixed uses and focused on Edward Street/Main Street. Concentration of retail uses including Whitewater Shopping Centre. There are also a number of standalone supermarkets Newbridge Silverware on the Athgarvan Road is a key destination.	Opportunities for improved permeability outlined in Newbridge LAP 2013-2019
B	Newly developing residential areas, a school and playing fields that is accessed by the Ring of Roseberry Roads.	Integration of residential areas with the town
C	Newbridge train station is located in the southwest corner of this sector. St Conleth's Community, Newbridge College are other destinations west of the river. A new primary health care centre is located on Station Road. Between the rail line and the river is characterised by well-established medium density residential development. Between the river and the R445 is undeveloped agricultural land; East of the R445 is an industrial employment area including Pfizer. There are 4 schools located in close proximity just to St Conleth's bridge (Scoil Chonnla Phadraig, St.Conleths and Marys NS, Patrician Secondary School, Holy Family Secondary School)	The area is dissected by both the rail line and the river which limit east-west movement across this sector. The rail line is crossed by Station Rd, Sexes Rd and Ring of Roseberry roads. The residential development is largely in cul-de-sacs accessed via The Great Southern Road or College Park Rd off Station Road. R445 provides the main access from east to west via St. Conleth's Bridge.
D	East of the R445 is residential development accessed largely off the Great Connell Road. There is a Lidl Distribution Centre at the northeast boundary of this sector. The remainder is largely agricultural.	Opportunities to improve access/permeability from residential areas to town centre, to Lidl and adjoining lands in particular beside River Court housing and Wellesley Manor/Baroda Court/Ash Road. May be increased employment opportunities here in the future.
E	Includes the Newbridge Business Park just north of the M7. South of the M7 there is a small amount of residential development along Green Road and also a primary School. The area has significant residential development, largely cul-de-sacs of lower density.	Opportunities to improve access/permeability from residential areas to town centre. Opportunities to provide improved connections to the Business Park.
F	Bounded by the rail line to the north and the R445 to the southern edge this sector. Medium density residential. Includes 3 schools –primary/ secondary.	Opportunities to improve permeability to schools.
G	Bounded to the south by the rail line. Newbridge Greyhound Stadium, small amount of recent residential development (The Meadows). St. Mark's school (special needs), Newbridge Town Football Club, Sarsfield GAA and Department of Defence offices are destinations in this sector.	Divided from the rest of the town by the rail line, Morristown Rd and R416 (Station Rd) cross the rail line. Opportunities to improve access/permeability from residential areas to town centre

Table 1.1: Description of Sectors

1.6 Current Transport Networks

1.6.1 Road Network

The R445 runs through the town centre and links Newbridge with Naas to the north-east and Kildare to the south-west. The R445 crosses the River Liffey at St. Conleth's Bridge, which is the only crossing point within the town. While the majority of development is located to the west of the river, this is still a significant constraining factor for movement within the town. The M7 runs to the south of the town enabling a direct linkage between the town and the national road network. The train line runs to the north of the town, but the road network crosses it at several locations.

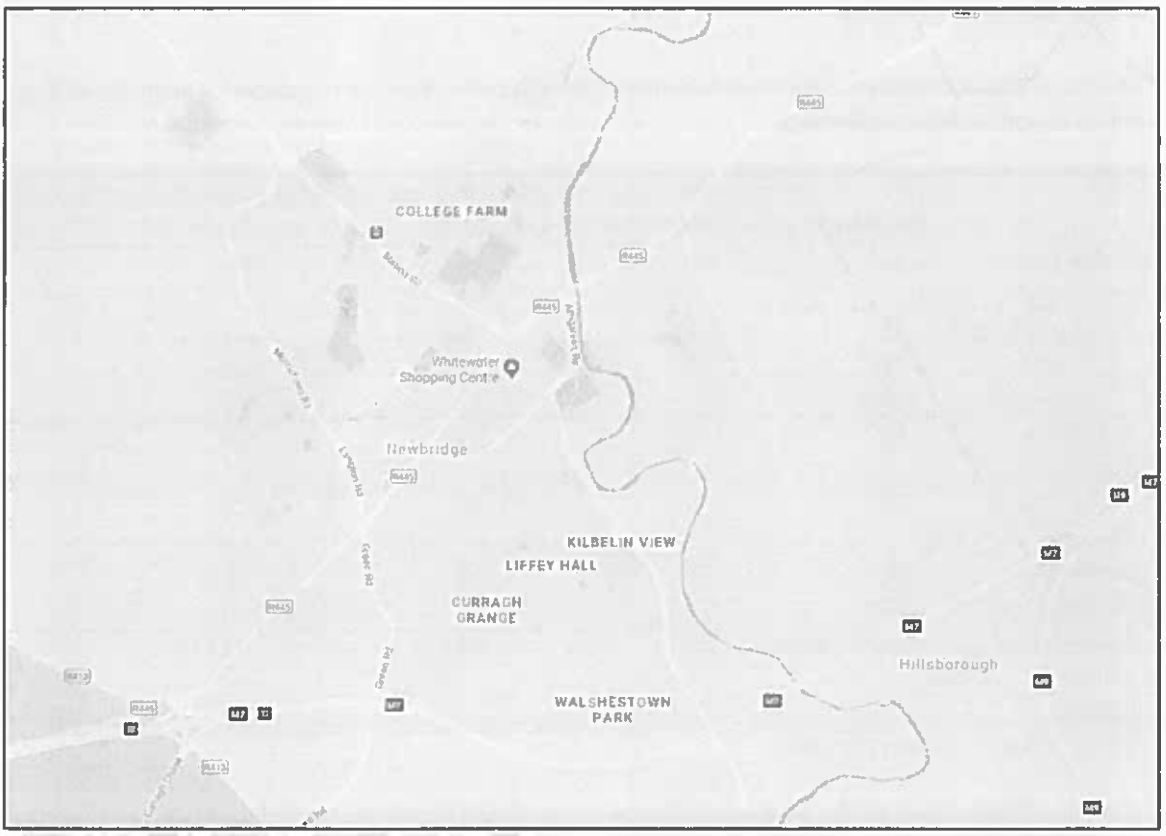

Figure 1.10: Road Network (Source: Google Maps)

1.6.2 Public Transport Networks

Regional Services

Newbridge Train Station is located approximately 800m to the north of the town centre. The town is well-served by the Dublin to Kildare/Portlaoise, Dublin to Cork/Limerick/Tralee, Dublin to Waterford, Dublin to Galway and Dublin to Westport/Ballina routes with 35 no. services per day stopping at Newbridge station with a destination of Heuston and 5 no. services currently using the Phoenix Park Tunnel with a destination of Grand Canal Dock. A Park and Ride area is located to the immediate north and south of the train station. The station provides valuable commuter rail services to Dublin to Heuston station as well through the Phoenix Park Tunnel including stations to Grand Canal Dock.

In terms of the bus network there are a number of services operating through Newbridge. The Bus Eireann services which operate to Newbridge include No's 126, 126N, 123, 124. Newbridge is also served by a number of commercial operators under licence. These include the No. 726 operated by Dublin Coach offering a 24hr service from Portlaoise to Dublin Airport also servicing Monasterevin, Kildare, Newbridge, Naas and Red Cow Luas.

Further bus services include the DCU02, ITC02, NUM08 and UCD01 college services operating during term time only.

Dublin Coach operates an N7 service which provides a link, including six pick up locations in Newbridge, to the Red Cow LUAS, where there is an interchange for an express service to Dublin city centre. This service is hourly.

Table 1.2 below provides a high level summary of the public transport network linking Newbridge with its neighbouring settlements

O/D	PT Service Number	No. of Services Mon-Fri	No. of Services Sat	Number of Services Sun
Newbridge-Rathangan	126	2	0	0
Newbridge-Naas	126 726 826	40 24 8	26 24 0	12 0 0
Newbridge-Kildare	126	15	12	8
Newbridge-Kilcullen	129	11	7	0
Newbridge-Monasterevin	726 826	24 8	24 0	0 0
Newbridge – Dublin City Centre	Dublin Coach	24	24	24

Table 1.2: Public Transport Network

The No. 126 Bus Eireann Route operates a core route from Dublin to Naas, Newbridge and Kildare operating Monday-Sunday however there are numerous variations to this route across the day. There are 13 no. services a day each way, Monday-Friday, operating the core route, at an irregular frequency between hourly and 3 hourly. There are additional services between Newbridge and Naas with a total of 40 no. services operating Naas to Newbridge on the No. 126 Monday-Friday.

No. 126 also operates two services each way between Rathangan and Newbridge, Monday-Friday but with no services at the weekend. For travel into Newbridge services arrive at 07.22 and 14.42. Given that there are approximately 200 vehicular trips in the morning peak from Rathangan into Newbridge this would appear to be low.

Local/Internal Bus Services

There are two local bus services both of which are commercial services operated under licence. The No. 129 goes to Avondale Drive. The No. 826 goes in the direction of Naas General Hospital.

Existing local services operate from Monasterevin in a north-easterly direction through Newbridge along Main Street and on to Naas (No. 826) and from Kilcullen northwards on the R413, turning west onto Main Street and then serving residential areas to the north of this (No. 129). The south east of the town, including Newbridge Business Park has only a limited level of bus service.

The No. 826 operates 9 no. services per day each way Monday-Friday however, there are no weekend services. The No. 129 operates 11 no. services per day each way Monday-Saturday however, not all stops are served on each departure. There are no Sunday services on this route. Neither route operates after 7pm.

The No. 126 Bus Eireann Route operates a core route from Dublin to Naas, Newbridge and Kildare. It is possible to use the No. 126 for internal travel within Newbridge between the stops shown in Figure 1.11 below.

Figure 1.11: No. 126 Route through Newbridge town (Source: NTA)

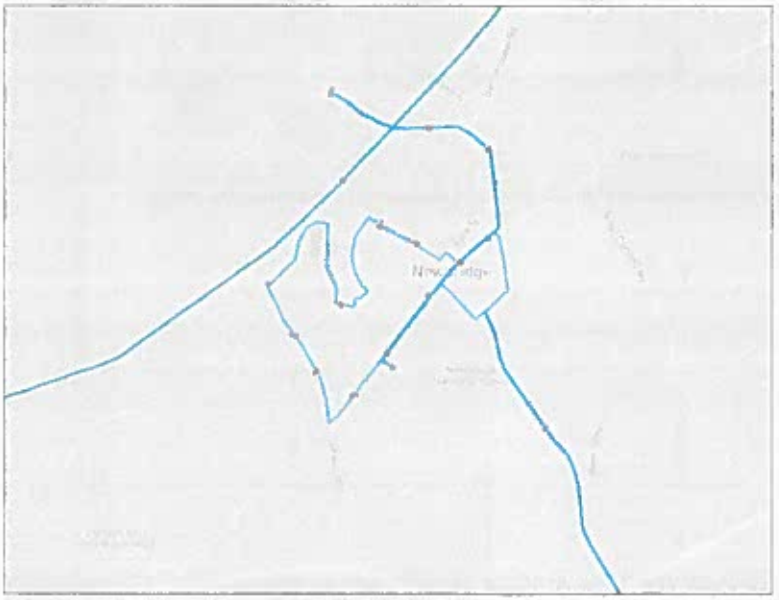

Figure 1.12: No. 129 Route in Newbridge (several variations of the route exist) (Source: NTA)

1.6.3 Cycling and Walking Network

There is currently little evidence of a cycle network in Newbridge. There are very few cycle lanes in the town. They do not form a coherent network and are weakened by poor design at junctions.

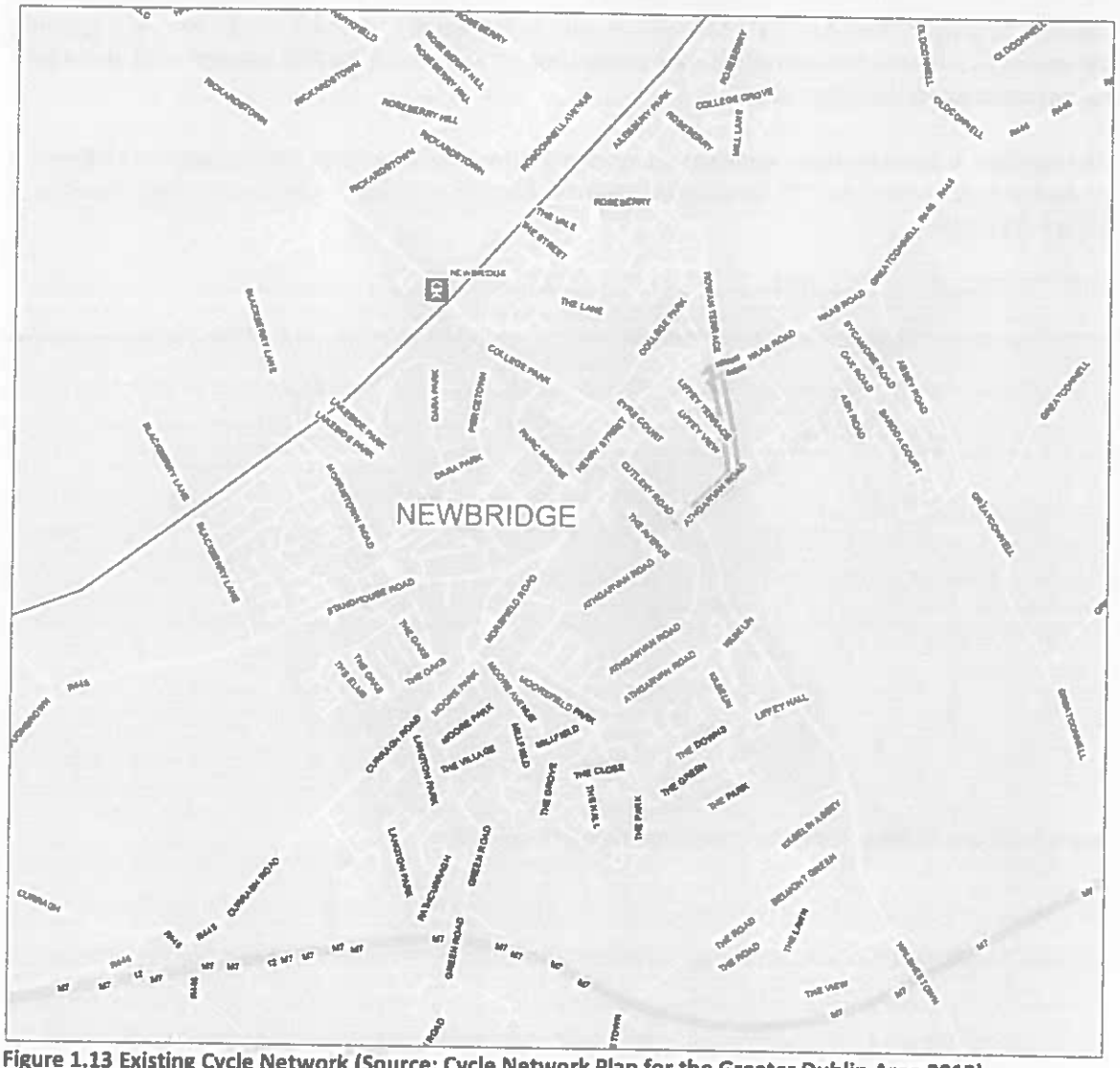

Figure 1.13 Existing Cycle Network (Source: Cycle Network Plan for the Greater Dublin Area 2013)

1.6.4 Parking Provision

There are several parking areas within the town centre. This includes two multi-storey car parks located off the main street. The Whitewater Shopping Centre has roughly 1,700 no. spaces and The Courtyard Shopping Centre car park has roughly 850 no. spaces. The town centre has on-street parking throughout. There is also parking provided at the train station.

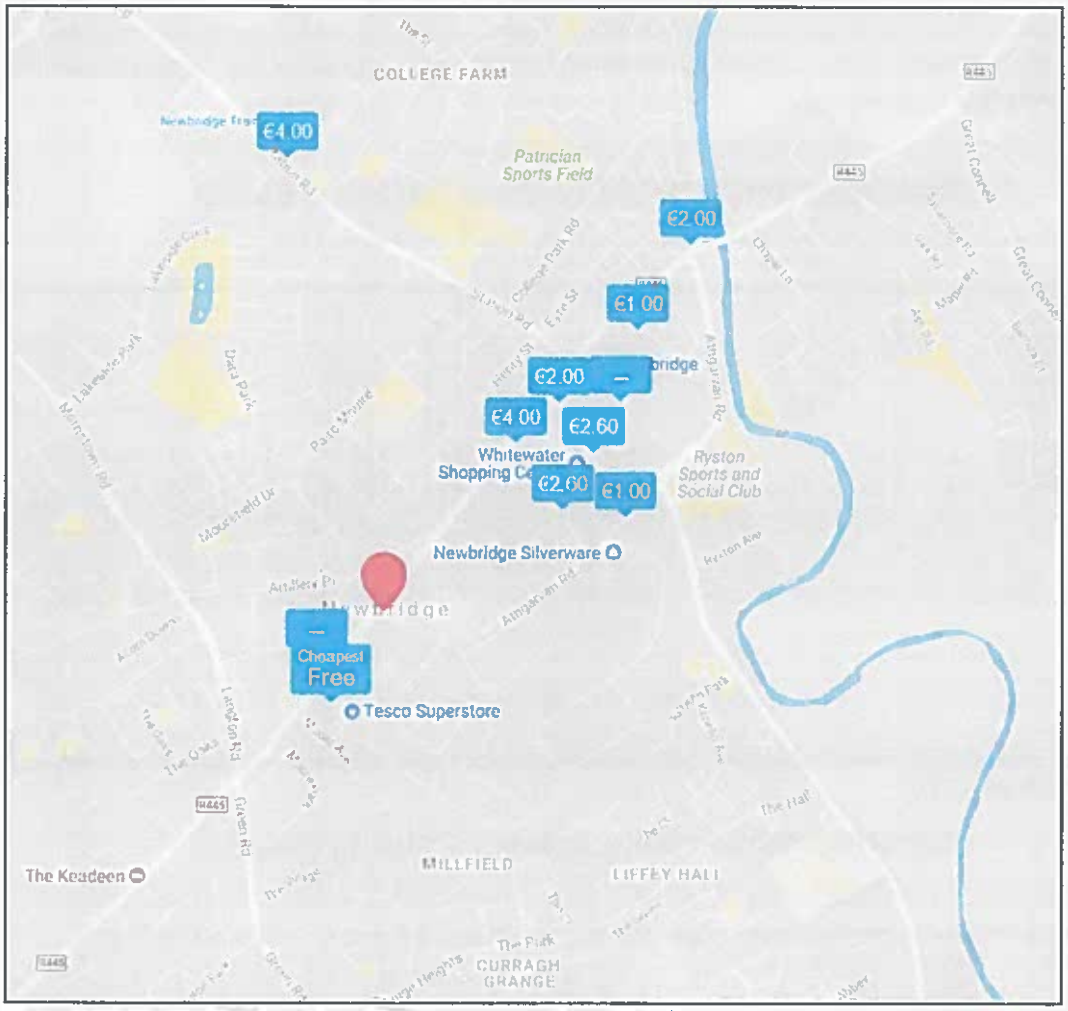

Figure 1.14: Car Parking Locations (Source: www.parkopedia.ie)

1.7 Current Transport Usage Patterns and Network Performance

1.7.1 Patronage on Rail

The below tables are taken from the National Heavy Rail Census 2017. They show a snapshot of rail patronage on a particular day in the year. Census day for rail use in 2017 was 16th November. Between 6am and 10am, 968 people board at Newbridge Station. The single busiest period is between 7am and 8am, when nine trains stop at Newbridge. During this time, 459 passengers board trains at Newbridge. There has been a 9% increase in patronage at Newbridge station in the 6am to 10am period compared to the 2016 Rail Census. The 2017 Census was carried out after the opening of the Phoenix Park Tunnel.

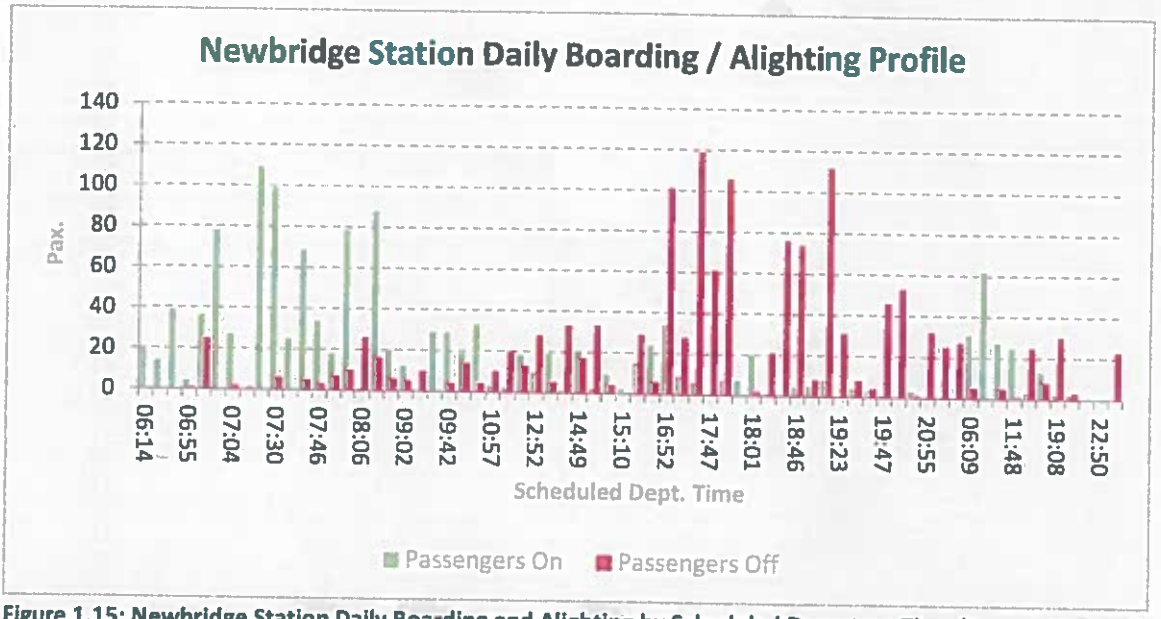

Figure 1.15: Newbridge Station Daily Boarding and Alighting by Scheduled Departure Time (Source: National Heavy Rail Census 2017)

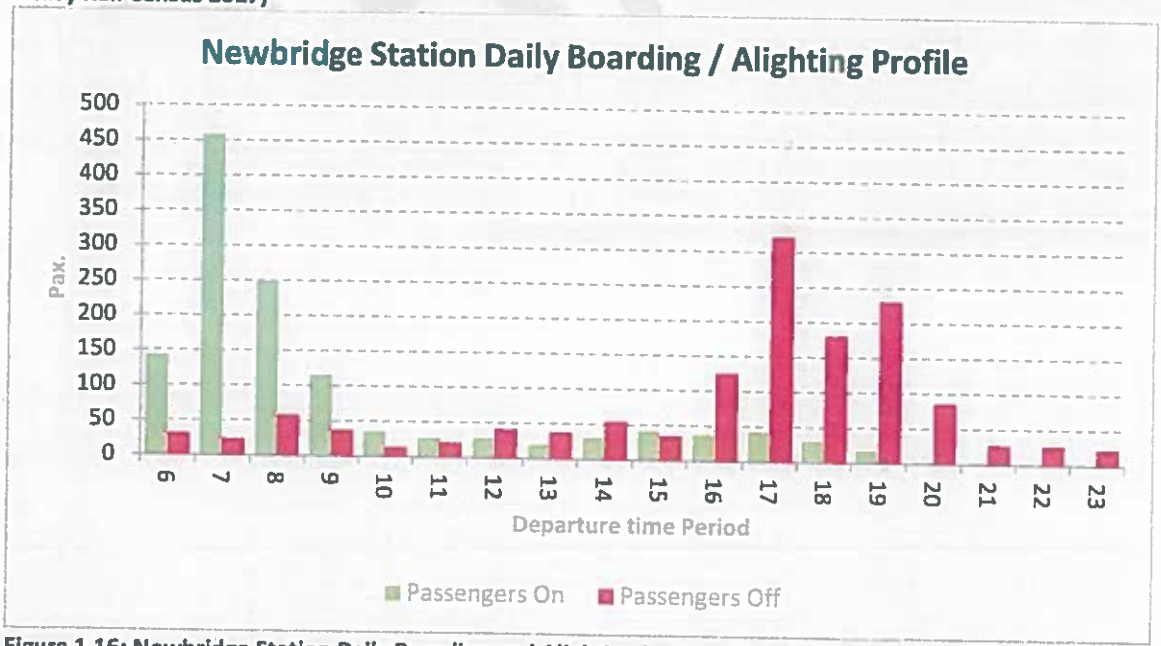

Figure 1.16: Newbridge Station Daily Boarding and Alighting by Hour (Source: National Heavy Rail Census 2017)

1.7.2 Traffic Flows and Congestion

Figure 1.17 below provides an indication of the level of traffic congestion on the roads in Newbridge at the peak hour. It is evident that there is congestion experienced on Station Road, along the R445 at various points (in particular at St. Conleth's Bridge) and on Athgarvan Road at the junction with St. Conleth's Bridge.

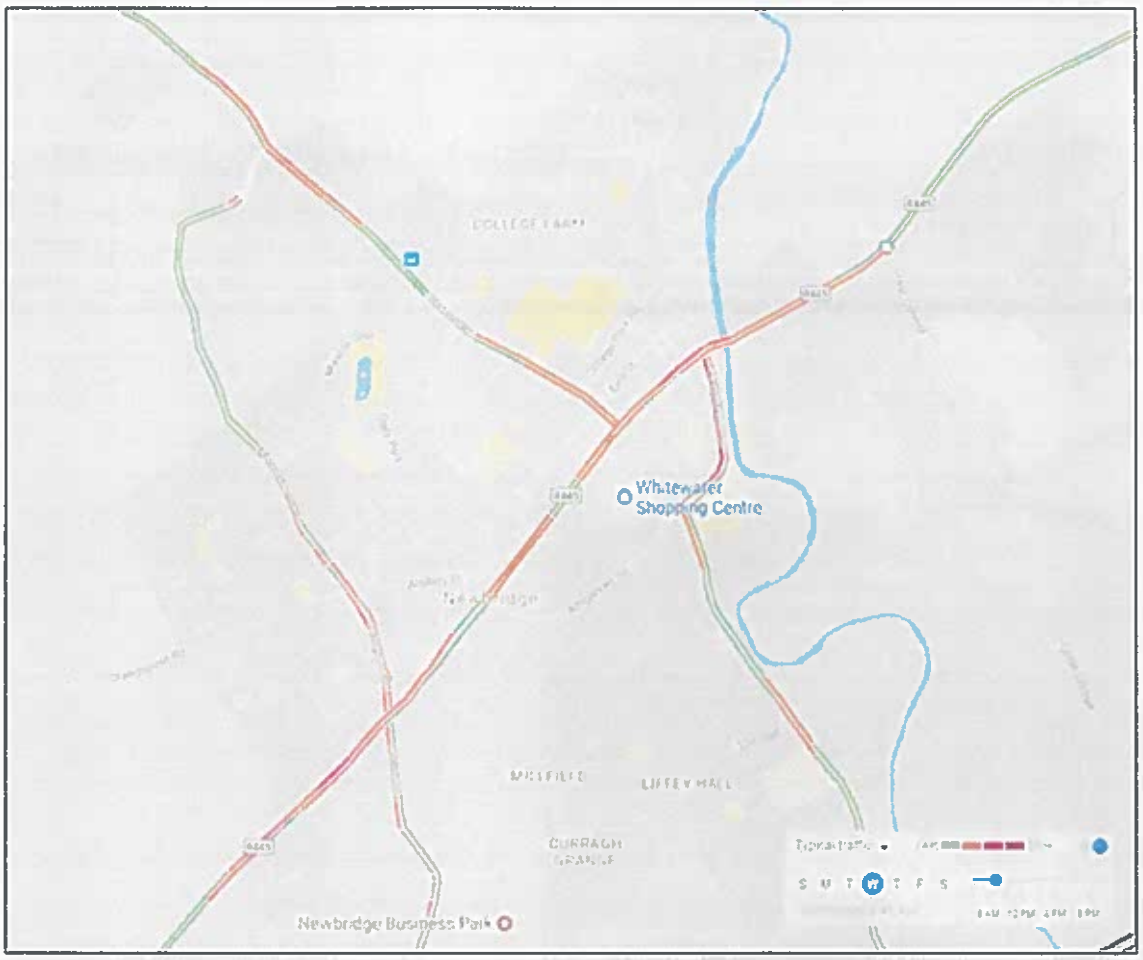

Figure 1.17: Traffic Congestion at AM Peak Hour (Source: Google Maps)

1.7.3 Cycling Demand

The 2016 Census includes figures for the number of people cycling into and out of each Electoral Division (ED). Within the three EDs in Newbridge there were 93 no. people who cycled in to these EDs daily. There were 113 no. people who cycled out of the EDs daily. This does not include those who may have used a bicycle to form part of their journey, for example to the train station. There is evidence from the full bicycle racks at the train station that this is a popular option. These figures are in the context of the current poor cycling infrastructure within the town.

Electoral Division	Electoral Division ID	Bike in 2016	Bike out 2016	Bike net 2016	Direction
Droichead Nua (Newbridge) Urban	6066	54	32	22	In
Morristownbiller	6078	28	80	52	Out
Oldconnell	6081	11	1	10	In

Table 1.3: Cycling Electoral Division Demand 2016 (Source: CSO)

Plate 1.1: Cycle Parking at Newbridge Train Station

1.8 Land Use and Transport Planning Context

Spatial planning policy in the study area is determined by the following documents:

- *Project Ireland 2040: National Planning Framework* (plus *Project Ireland 2040: National Development Plan 2018-2027);*
- *Regional Planning Guidelines for the Greater Dublin Area/Regional Spatial & Economic Strategy for the Eastern and Midland Region*;
- *Kildare County Development Plan 2017-2023*; and
- *Newbridge Local Area Plan 2013-2019*

The *National Planning Framework (NPF)* provides a vision for the future development of the Country and for effective regional development. Kildare is within the Mid-East area of the Eastern & Midland Region. The NPF states that *"housing development should be primarily based on employment growth, accessibility by sustainable transport modes and quality of life, rather than unsustainable commuting patterns." (pp33).* The *National Development Plan 2018-2027* includes the DART expansion programme which will provide fast, high-frequency electrified services to Celbridge/Hazelhatch.

The Regional Planning Guidelines for the Greater Dublin Area will soon be superseded by the *Regional Spatial & Economic Strategy for the Eastern and Midland Region.*

As stated in the *Kildare County Development Plan 2017-2023,* Newbridge is considered a Large Growth Town II which recognises it as having a smaller population base and a lesser range of facilities provided in comparison to Level I towns. This division allows for growth in Level II towns in line with new facilities and services as these towns expand. The *Newbridge Local Area Plan 2013-2019* provides the local spatial planning context for development in Newbridge. This plan provides detailed guidance for the future development of the town.

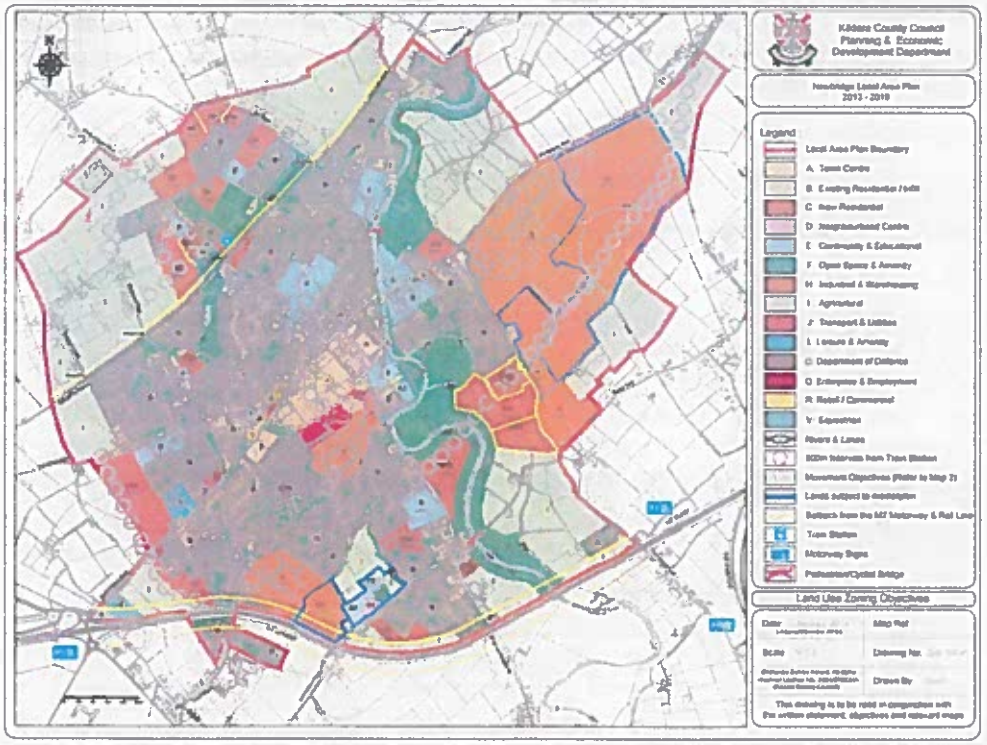

Figure 1.18: Newbridge Land Use Zoning Objectives (Source: Newbridge Local Area Plan 2013-2019)

The main **transport policy** document which provides the transport context for development in Newbridge is the *Transport Strategy for the Greater Dublin Area 2016-2035* (the "Strategy"). It sets out the strategic infrastructure and services proposed to be delivered in the Greater Dublin Area over the next twenty years. The following outlines some of the transport proposals included in the Strategy (some of which have been implemented), and which will affect the study area:

Rail

- Reopening of the Phoenix Park Tunnel for passenger services, linking the Kildare/Cork line to the city centre;
- Implement the DART Expansion Programme, which will provide DART services to Hazelhatch on the Kildare Line;

Core Regional Bus Network

- M7/N7 via Long Mile Road corridor serving regional buses from Kildare

Road

- M7 widened to three lanes in each direction between Naas (Junction 9) and the interchange with the M9 at Junction 11;
- Revisions to Junction 10 (Naas South/Newhall) and the addition of a new junction at Osberstown linking to a bypass of Sallins; and
- Reconfiguring of the N7 from the M50 junction to Naas

Cycling

- Greater Dublin Area Cycle Network Plan

Walking

- Improvements to provide safer, more comfortable and convenient walking environments

The *National Cycle Manual* and the *GDA Cycle Network Plan* provide guidance for cycling infrastructure and planning. The *National Cycle Manual* provides guidance on integrating the bike in the design of urban areas. The manual illustrates ways to improve the 'cycle offer' and provide a stress free and safe environment for cycling. The *GDA Cycle Network Plan* identifies: an urban cycle network at a primary, secondary and feeder level; an inter-urban cycle network linking to the urban network; and a green route network.

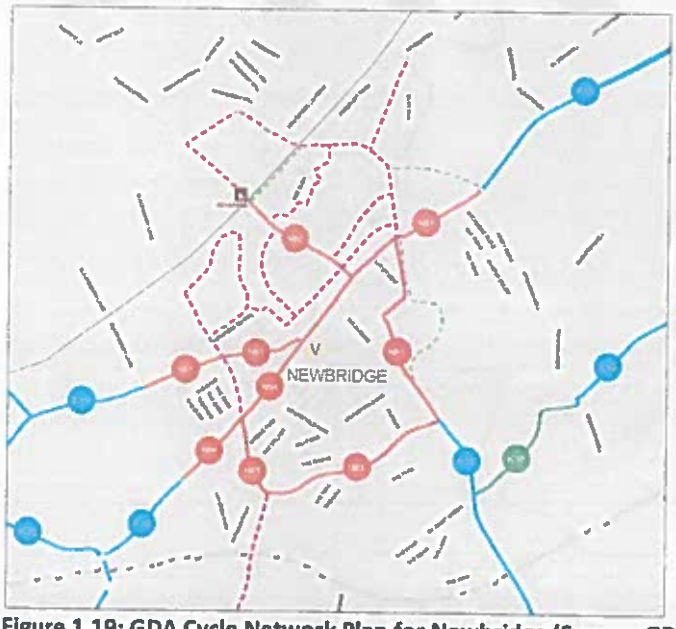

Figure 1.19: GDA Cycle Network Plan for Newbridge (Source: GDA Cycle Network Plan)

1.9 Local Transport Objectives

The *Newbridge Local Area Plan 2013-2019* contains many transport and movement objectives for the town. These are guided by the overarching principle that transport and land use planning should be integrated and that sustainable modes of travel should be supported.

> *'The improvement of transportation infrastructure in Newbridge is a key element of the sustainable development of the town. Policies and objectives are outlined to promote integrated land use and transportation planning to further support and encourage more sustainable modes of travel. The plan also sets specific policies for local improvements in and around the town centre and objectives to secure routes for long term roads infrastructure'*

Some of the objectives of the Plan are listed below.

> ***GMO 1:*** *To ensure that the delivery of movement and transport schemes in Newbridge during the plan period is consistent with the 5 year Transport Investment Framework Programme prepared jointly by Kildare County Council and the National Transport Agency.*
>
> ***GMO 2:*** *That all development proposals would promote walking and cycling modes in Newbridge by ensuring consistency with the relevant measures contained in Chapter 9 of the Draft Transportation Strategy for the Greater Dublin Area 2011–2030 (or as amended) during the period of this plan.*
>
> ***GMO 9:*** *To develop a network of safe, high quality pedestrian and cycle routes throughout the town by:*
>
> > *a) carrying out a Cycle Network Study, having regard to the NTA Greater Dublin Area Cycle Network, to determine appropriate cycle routes, and*
> >
> > *b) Seeking the provision of suitable cycle infrastructure on these routes, designed in accordance with the NTA National Cycle Manual.*
> >
> > *c) Upgrading Station Road between the Town Centre at the Charlotte Street/ Edward Street/Main Street junction and the LAP boundary as a priority. Such improvement works must deliver a high quality urban environment within a multi-modal corridor.*
>
> ***GMO 10:*** *To ensure that all works in Newbridge accord with the principles as set out in the Design Manual for Urban Roads and Streets (DMURS), (2013).*
>
> ***GMO 13:*** *To encourage and seek the provision of landscaped pedestrian and cycle links between and within residential estates and between residential areas, the town centre, industrial areas and the railway station*

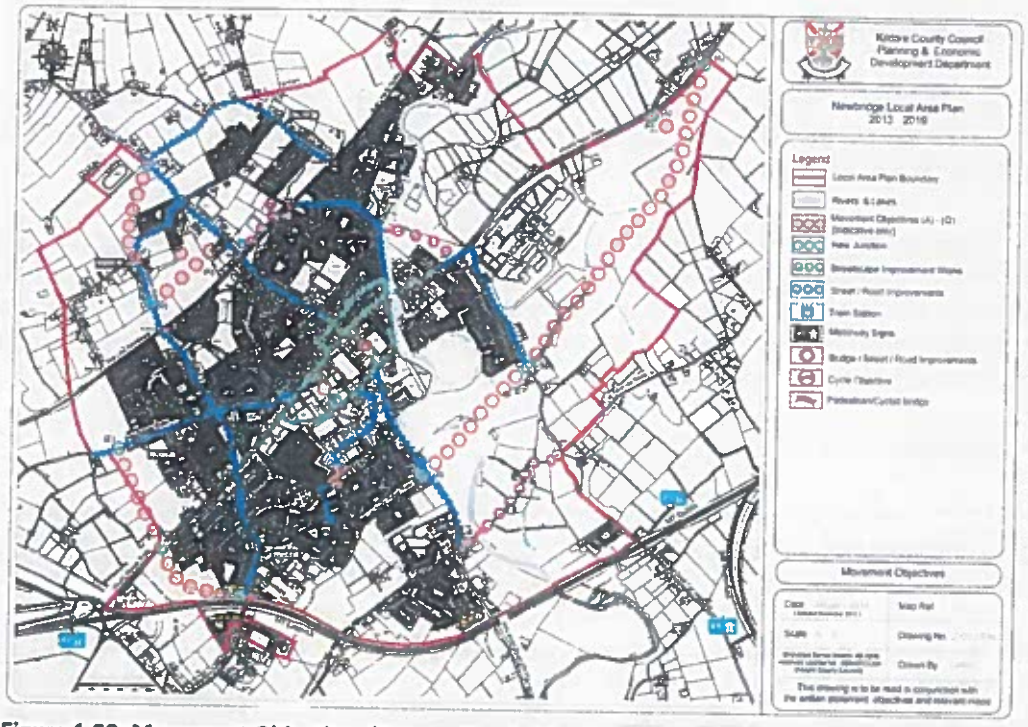

Figure 1.20: Movement Objectives (Source: Newbridge Local Area Plan 2013-2019)

Figure 16: Movement Strategy

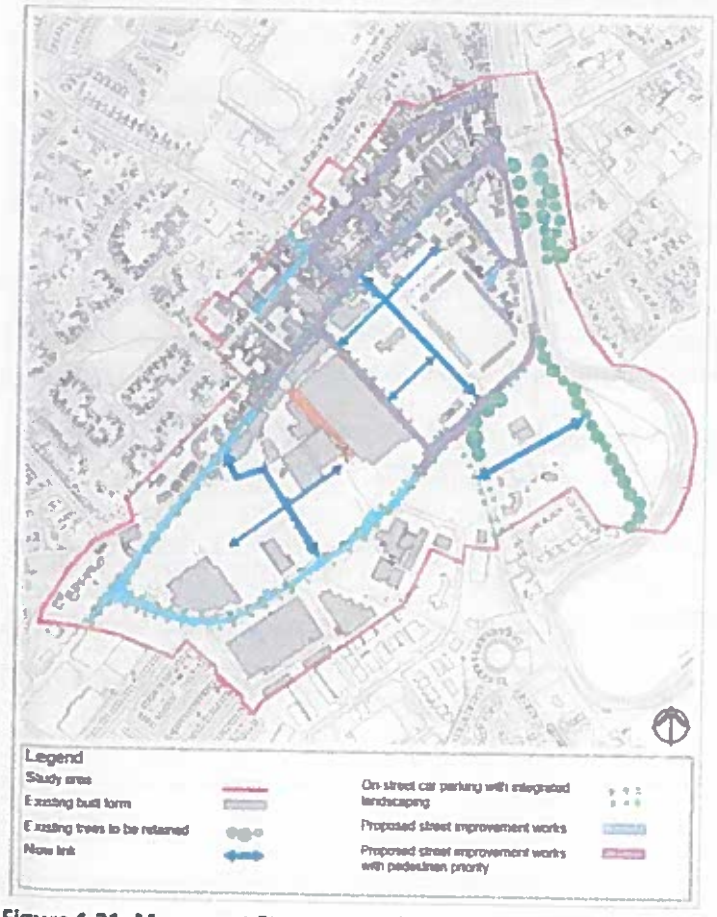

Figure 1.21: Movement Strategy Newbridge (Source: Newbridge Local Area Plan 2013-2019)

2.0 DEMAND – EXISTING AND FUTURE TRAVEL DEMAND

2.1 Internal Demand

The internal demand for trips within Newbridge has been assessed using the National Transport Authority Eastern Regional Model (NTA ERM). This demonstrates that there are approximately 80,559 trips originating in Newbridge every day. Within Newbridge, 50% of all trips originating from the settlement during the AM peak are internal trips.

Internal Demand between Sectors

Table 2.1 below illustrates the demand between various sectors of Newbridge. The sectors are derived from the zones used for the NTA ERM (see Figure 2.1). Some have been grouped together for the purposes of analysis. This establishes a picture of where trips are coming and going to within the town. Table 2.1 shows that there are 11,833 internal trips in Newbridge in the AM peak. The Table illustrates the following:

- Sector E produces the largest number of trips to destinations within Newbridge in the AM peak (3,596) and just over one-third of these are internal to the Sector
- The highest demand pairs are internal i.e. within Sectors E, D, C, F respectively
- There is significant across-town demand from Sector E to Sectors C and D
- While demand to Sector A is strong, it is likely that this may be even higher on the weekend for example

Sector	A	B	C	D	E	F	G	Total
A	155	8	156	75	113	89	10	606
B	58	31	148	150	76	79	9	551
C	310	36	790	502	284	233	30	2,185
D	196	33	414	942	319	172	21	2,097
E	519	23	636	693	1,241	450	34	3,596
F	400	24	491	396	477	658	29	2,475
G	48	4	88	54	53	43	33	323
Total	1,686	159	2,723	2,812	2,563	1,724	166	11,833

Table 2.1: Internal Demand between the Sectors, all trips, AM Peak, 2011

Figure 2.1 illustrates the total number of workplace trips originating in Newbridge. It is evident that the large employment area is Sector A i.e. the town centre, while other significant Sectors are C and E which are home to Pfizer/Lidl and Newbridge Business Park.

Figure 2.2 illustrates the number of trips from each sector for employment purposes to Sector A (the largest employment location). It is evident that the majority of people working in the town centre come from the south and west of the town (Sectors E and F).

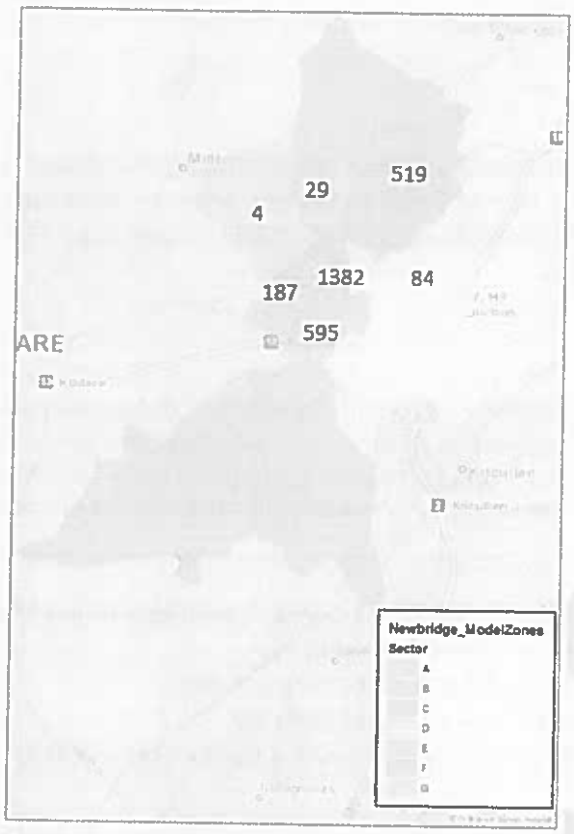

Figure 2.1: Total Number of Workplace Trips within Each Sector of Newbridge (Source: NTA ERM)

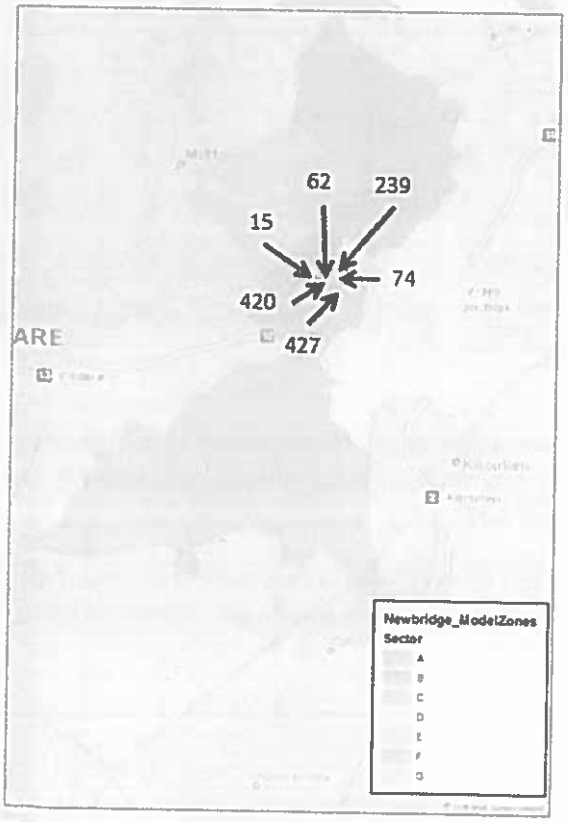

Figure 2.2: Internal Workplace Trips to Town Centre (Sector A) (Source: NTA ERM)

2.2 External Demand

The external demand for trips from and to Newbridge has been assessed using the National Transport Authority Eastern Regional Model (NTA ERM). It illustrates that there is movement in both directions between the neighbouring towns of Naas and Kildare and Newbridge. Other significant destinations include Portlaoise and Carlow. There are also a substantial number of trips from Monasterevin and Kilcullen to Newbridge.

There are 78,450 trips with a destination of Newbridge every day. The highest number occurs in the AM peak, followed by the school run period. The origin of trips into Newbridge in the AM peak is illustrated in Table 2.2 below. This shows that the greatest number of trips into Newbridge originated in rural Kildare, amounting to 3,695 trips. Significant numbers came from Naas (709) and from Kildare town (637).

The destination of trips from Newbridge in the AM peak shows that likewise there was a significant number of trips to rural Kildare (1,678) as well as large numbers commuting to Naas (1,512). In total there were 1,677 people commuting to Dublin, of which 828 go to Dublin City, while 703 go to South Dublin.

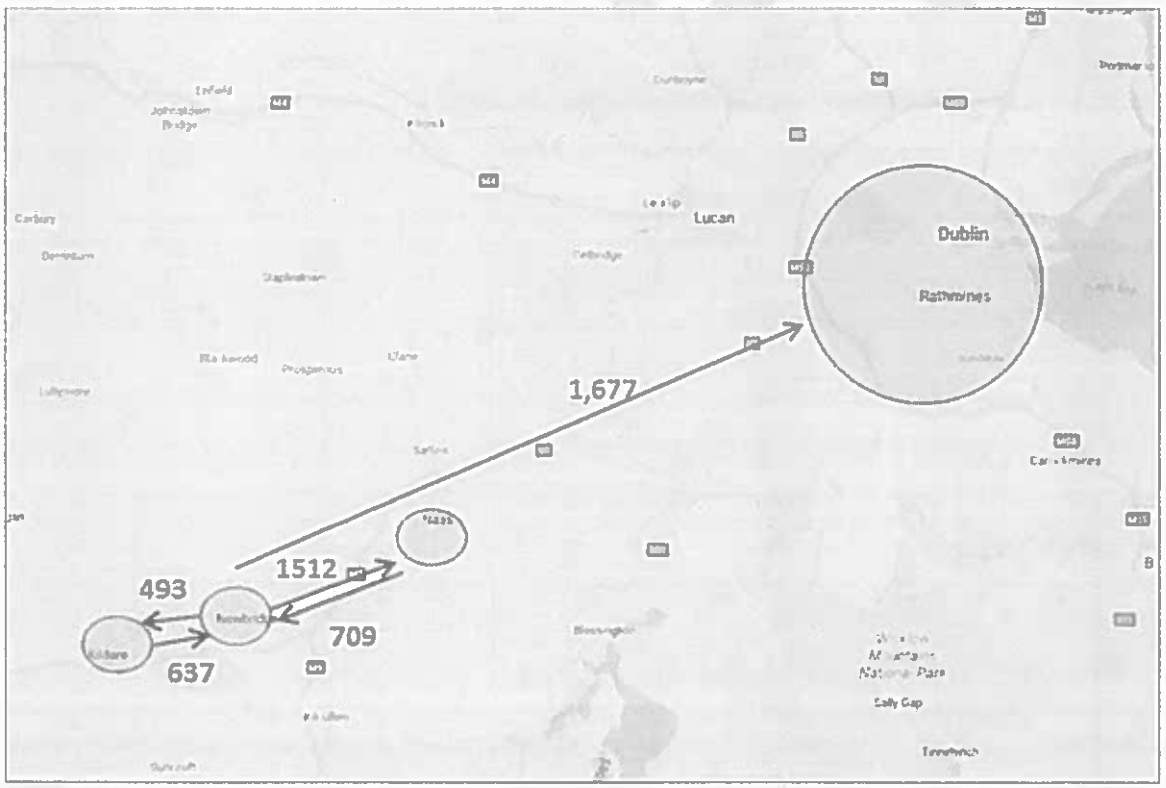

Figure 2.3: Trips to and from Newbridge in the AM Peak (All Purposes) (Source: NTA ERM)

Origin	Trips into Newbridge in AM Peak (All Purposes, 2011)	%
Newbridge	**11,833**	60
Kildare Rural	3,695	19
Naas	709	4
Kildare	637	3
Kilcullen	351	2
Laois Rural	297	2
Monasterevin	265	1
Wicklow Rural	218	1
Rathangan	199	1
Portarlington	190	1
Portlaoise	162	1
Sallins	143	1
Athy	143	1
Mountmellick	121	1
Total Dublin	86	0
Total Other	738	4
Total All	19,786	100

Table 2.2: Trips into Newbridge in the AM Peak (All Purposes, 2011)

Destination	Trips from Newbridge in AM Peak (All Purposes, 2011)	%
Newbridge	**11,833**	**64**
Kildare Rural	1,678	9
Naas	1,512	8
Kildare	493	3
Kilcullen	330	2
Sallins	168	1
Wicklow Rural	128	1
DLRD	84	0
Dublin City	828	0
Fingal	62	0
South Dublin	703	0
Total Dublin	1,677	9
Total Other	749	4
Total All	18,568	100

Table 2.3: Trips from Newbridge in the AM Peak (All Purposes, 2011)

Destination as Newbridge

Figure 2.4 below shows the volume of trips originating externally to Newbridge, but with Newbridge as a destination during the AM peak across the sectors of Newbridge. Sectors C, E and D respectively are by far the strongest attractors of trips with over 4,300 each.

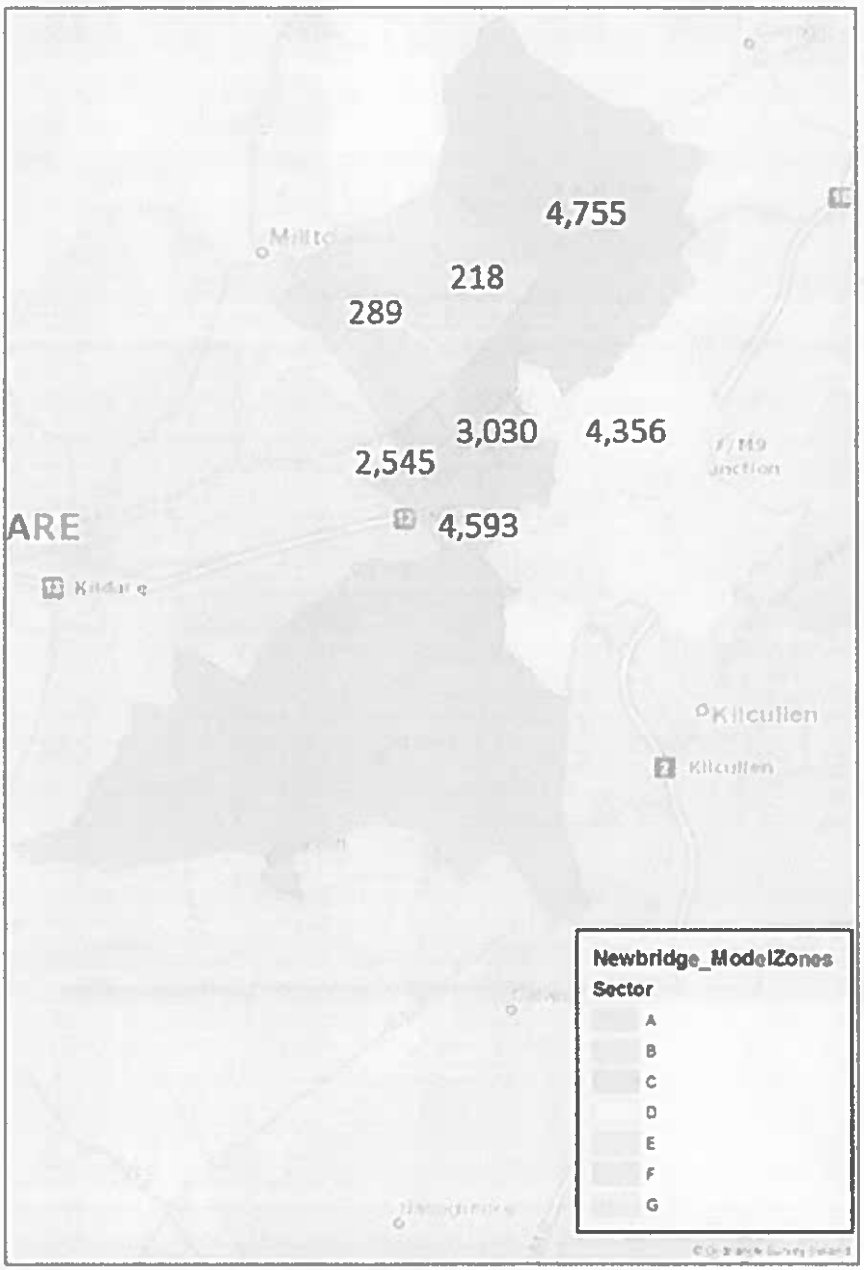

Figure 2.4: AM peak, All trips, at Destination (Sectors) (Source: NTA ERM)

Table 2.4 below illustrates the external demand from surrounding towns to Newbridge in the AM peak. From Naas this includes 219 trips to Sector C and 197 trips to Sector D. The highest demand from Kildare was to Sector E (200 journeys). There were 129 trips to Sector C and 99 trips to Sector D. There were also 90 trips from Kilcullen to Sector D and 90 trips to Sector E. There were 266 trips from Monasterevin, of which 77 went to Sector E. It is evident that there are significant AM trips to the employment areas in Newbridge from the surrounding towns.

	A	B	C	D	E	F	G	Total
Naas	98	8	219	197	125	54	9	710
Kildare	101	5	129	99	200	92	11	637
Kilcullen	55	2	77	90	90	33	4	351
Monasterevin	55	2	60	39	77	29	4	266
Total	309	17	485	425	492	208	28	1,964

Table 2.4: Total Demand AM 2011

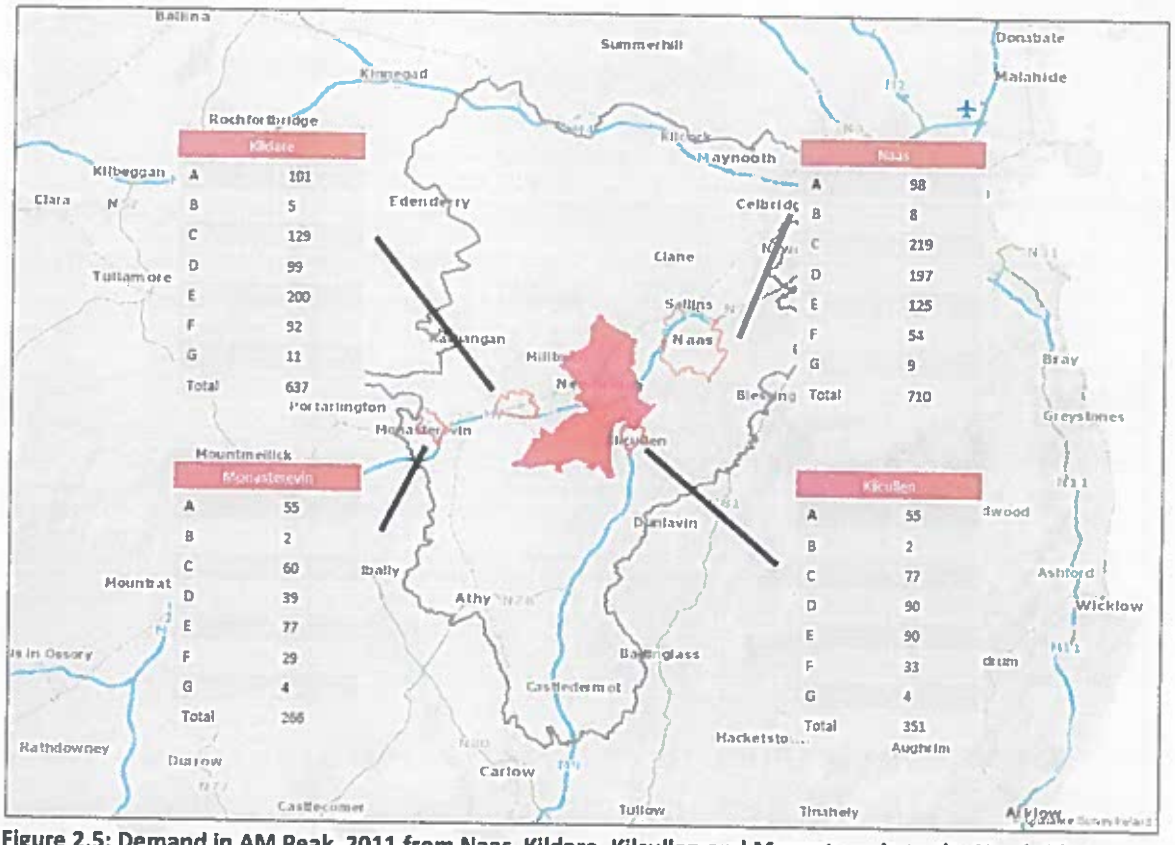

Figure 2.5: Demand in AM Peak, 2011 from Naas, Kildare, Kilcullen and Monasterevin to the Newbridge Sectors (Source: NTA ERM)

2.3 Existing Mode Share

Mode split figures for Newbridge are derived from the National Transport Authority Eastern Regional Model (NTA ERM). The mode split figures for daily trips originating in Newbridge show that 70% of trips carried out in the AM peak are car-based. Of the 18,568 AM trips, 19% are walking and 3% are cycling. In total 8% of the trips are by public transport.

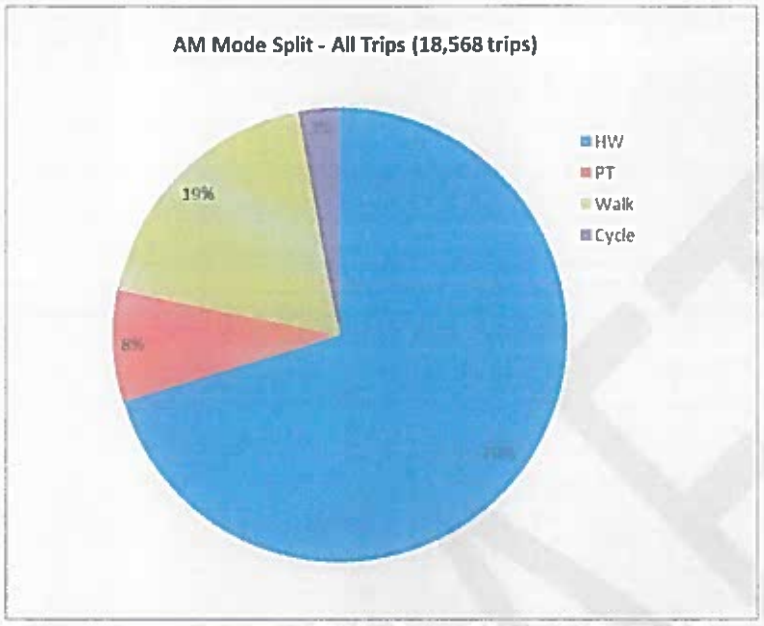

Figure 2.5: AM Mode Split – All Trips (18,568) (Source: NTA Model)

The model shows that the school run period (1-4pm) is even more car-based that the AM peak. During this period 77% of trips are car-based. The level of sustainable mode share decreases to 17% for walking and 2% for cycling. In total 4% of the trips are by public transport.

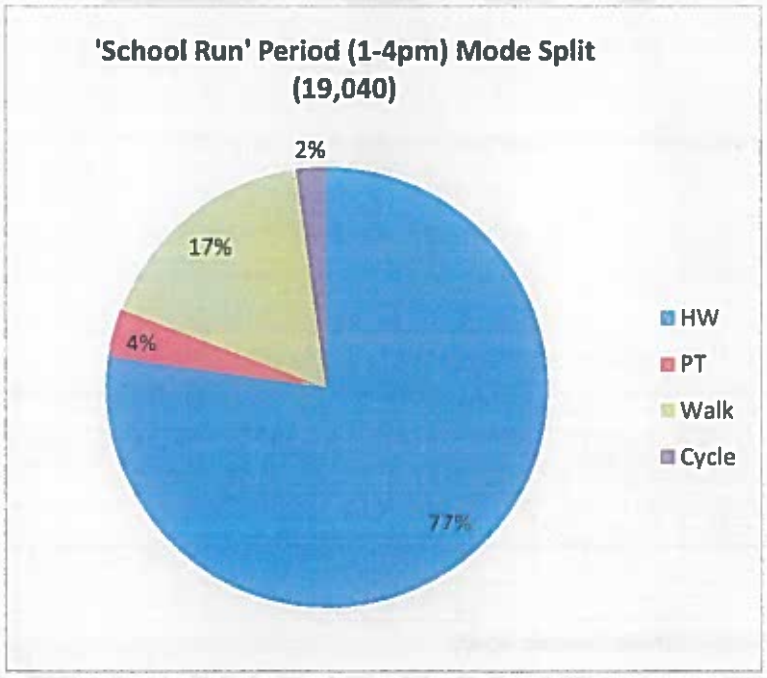

Figure 2.6: AM Mode Split – 'School Run' Period (1-4pm) (19,040) (Source: NTA Model)

The below Figures (2.7, 2.8, & 2.9) from AIRO, graphically illustrate the level of each mode share within each small area of Newbridge. It is evident from Figure 2.7 that the highest level of private car trips originate in the outer areas of the town, while the percentage of private car trips is less in more central areas as well as to the east of the town. Figure 2.8 illustrates that the greatest numbers using public transport originate predominantly in the centre of the town as well as closer to the rail line. Figure 2.9 illustrates that the greatest numbers of those using sustainable modes such as walking and cycling originate in the more central areas of the town. It appears that proximity to the centre of the town as well as to public transport corridors influences mode choice.

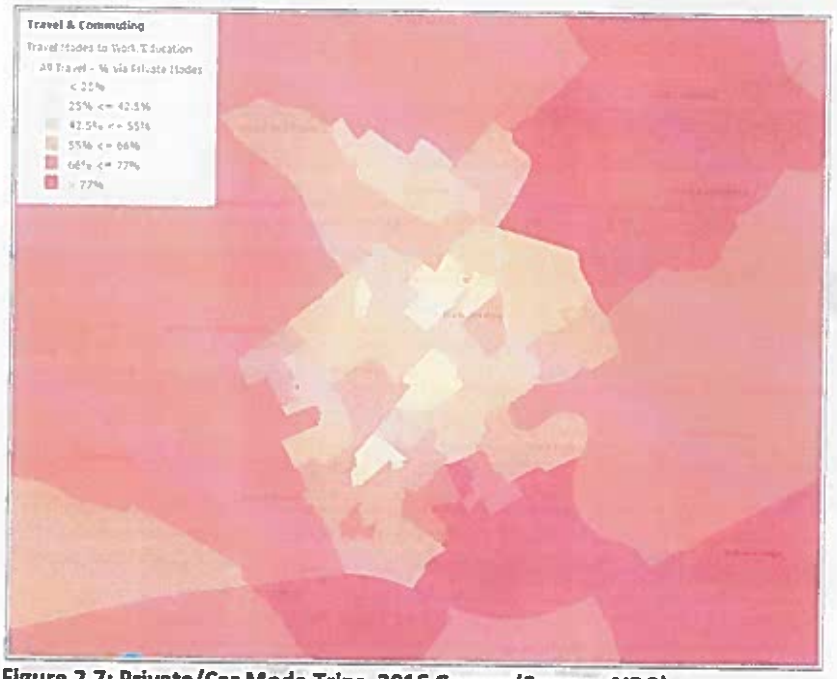

Figure 2.7: Private/Car Mode Trips, 2016 Census (Source: AIRO)

Figure 2.8: Public Transport Mode Trips, 2016 Census (Source: AIRO)

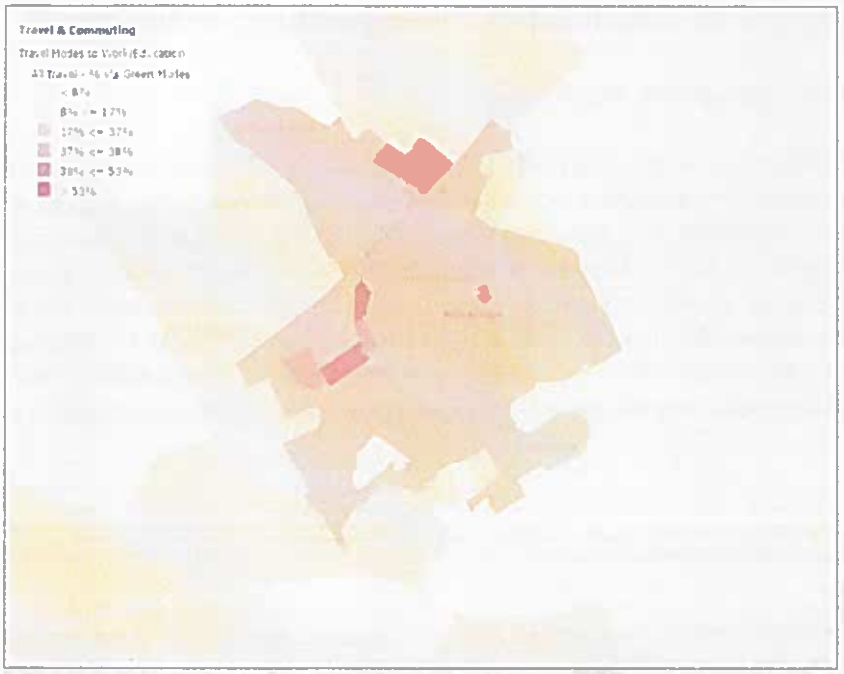

Figure 2.9: Green Mode (Walking & Cycling) Trips, 2016 Census (Source: AIRO)

2.4 Future Demand 2035

The NTA Eastern Regional Model forecasts a 2035 future year demand for 104,953 trips originating in Newbridge. This is reflective of the forecasted 37% population increase. It is estimated that 25,076 of these will be in the AM peak. The number of road based trips is expected to total 78,295. However, in the AM peak, the car mode share is lower than throughout the rest of the day at roughly 65%.

The Model forecasts a 2035 future year demand for 102,078 trips with a destination of Newbridge. Of these, 26,105 will be in the AM peak. The number of road based trips is expected to total 76,351. However, the mode share for these trips originating outside Newbridge is dominated by car trips throughout the day.

3.0 OPTIONS – DEVELOP TRANSPORT INTERVENTIONS TO MANAGE AND SERVE DEMAND

3.1 Overarching Transport Framework Objectives

Newbridge has a growing population which is expected to increase by 37% within twenty years. There is significant employment within the town, including two business/industrial park areas and a large shopping centre. While Newbridge has a significant population commuting out of the town every day, it also provides local employment as well as attracting trips from local towns. External trips to Dublin can be catered for by both rail as well as bus. Local trips within the town and to neighbouring towns are also catered for by public and private buses. Ensuring that both residents and employees can efficiently and sustainably travel within the town will be a challenge as the town continues to expand. The below objectives will guide future transport related policies and actions to be pursued.

- *Provide a road network which caters for the safe and efficient movement of private car trips as well as sustainable and public transport modes by upgrading the road network and junctions to provide a pleasant and safe environment for all road users.*
- *Enhance the built environment to provide filtered permeability within the town to encourage movement by sustainable modes for local trips.*
- *Ensure that public transport services are an attractive alternative to residents and employees within the town, through provision of appropriate services, fit for purpose infrastructure as well as making stops and stations accessible for walking and cycling.*

There are two potential approaches which will be determined by the overall objective for the town centre and the Main Street:

Traditional traffic management approach → **Improvement but no big gain for the town centre**

Remove through-traffic and enhance and revitalise Edward Street/Main Street → **Regeneration of the town, providing the opportunities for business and retail to thrive**

Traditional Traffic Management Approach

A traditional traffic management approach would see the flow of movement of cars facilitated through Edward Street/Main Street. This approach manages traffic flow through junctions while ensuring safe speeds on the roads. This approach is an effective use of existing infrastructure to allow circulation of vehicles within an area. It would ensure that vehicular traffic can circulate within and through the town.

While this approach may bring about benefits to serve longer trips trying to access the town centre retail offer, it will also encourage short trips within the town. This in turn may reduce the attractiveness and capacity to serve the longer trips. The town has been planned on a predict-and-provide model where the expectation is that a car is required and there has been little provision for other modes. A continuation of this model cannot provide for improved access to schools, services and public transport infrastructure as the network will ultimately remain congested. While car parking is critical to the functioning of the town, customers with longer trips will continue to use the available MSCPs, while local customers are more likely to favour on-street parking due to local knowledge of available spaces. However, on-street parking reduces the capacity of the road network to serve those customers that have longer journeys. The full utilisation of car parking spaces within the MSCPs is critical to providing an improved road network. While an improved flow of traffic through the town may appear beneficial, it will not necessarily mean improved accessibility to the town or increased viability of the retail and commercial offer.

Result: This approach does provide some improvement for traffic circulation through the town but no big gain for the town centre. It does not provide an opportunity for the enhancement of Edward Street/Main Street such as would be provided by widened footpaths and increased pedestrian circulation and does not therefore meet the objective for regeneration and revitalisation. It also does not meet the objectives to improve the environment for all road users nor to improve the accessibility of public transport services.

Remove Through-Traffic and Enhance and Revitalise Edward/Main Street

The alternative approach is to reduce through-traffic in the town centre by redirecting it around the town and encouraging the use of strategic roads such as the N7 for strategic trips. This approach also seeks to increase the use of sustainable and public transport modes, thereby freeing up the road network for strategic/longer trips.

The removal of through-traffic would facilitate the regeneration and revitalisation of Edward Street/Main Street by facilitating it to become an attractive place for retail and cultural activities to take place. Pedestrian and cycle movement as well as public transport are facilitated within the town centre. A more attractive pedestrian environment is created by the reduction in vehicular traffic, providing wider pavements and providing safe and convenient crossing points on the Main Street, thus allowing easier access to retail and cultural facilities. This encourages people to fully use the Main Street and the facilities it offers. It would create opportunities for café/restaurant/pub facilities by increasing footfall as well as creating an attractive streetscape that could be used for outdoor seating for example.

Result: This approach brings a net benefit to the town: facilitating the objective for the regeneration of the town centre as well as providing the opportunity for business and retail to thrive. This approach meets the objectives to provide for the safe movement of all road users as well as

providing improved access to public transport services. This approach has the potential to improve sustainable and public transport mode share thus facilitating access for longer trips where required.

Preferred Approach: The preferred approach is therefore to remove through-traffic and enhance and revitalise Edward Street/Main Street.

3.2 Circulation Concepts

The concept for future circulation is to fully utilise Athgarvan Road and thereby unlock the potential of Edward Street/Main Street. Future proposals to complete a southern access road would also provide an alternative route to Edward Street/Main Street. This facilitates the creation of an improved public realm as well as an attractive shopping environment.

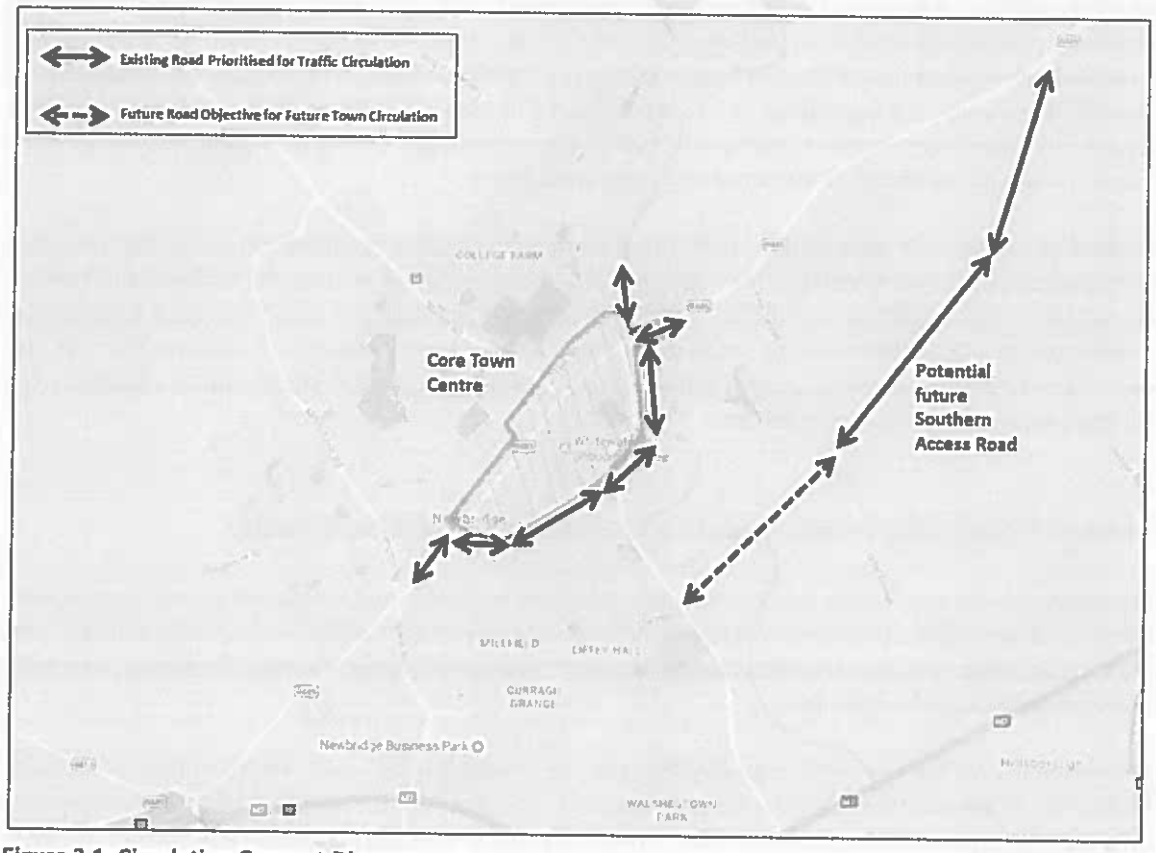

Figure 3.1: Circulation Concept Diagram

Concepts:

1. Traffic circulates around, rather than through the town
2. Athgarvan Road becomes the main bypass route
3. Will be supplemented by Southern Access Road when constructed
4. Core town centre becomes traffic calmed and can be enhanced and revitalised

Town Centre Permeability

Providing a permeable and walkable town centre will be key to creating a vibrant town centre where shoppers can move between shopping centres, the Main Street as well as surrounding retail streets and cultural attractions.

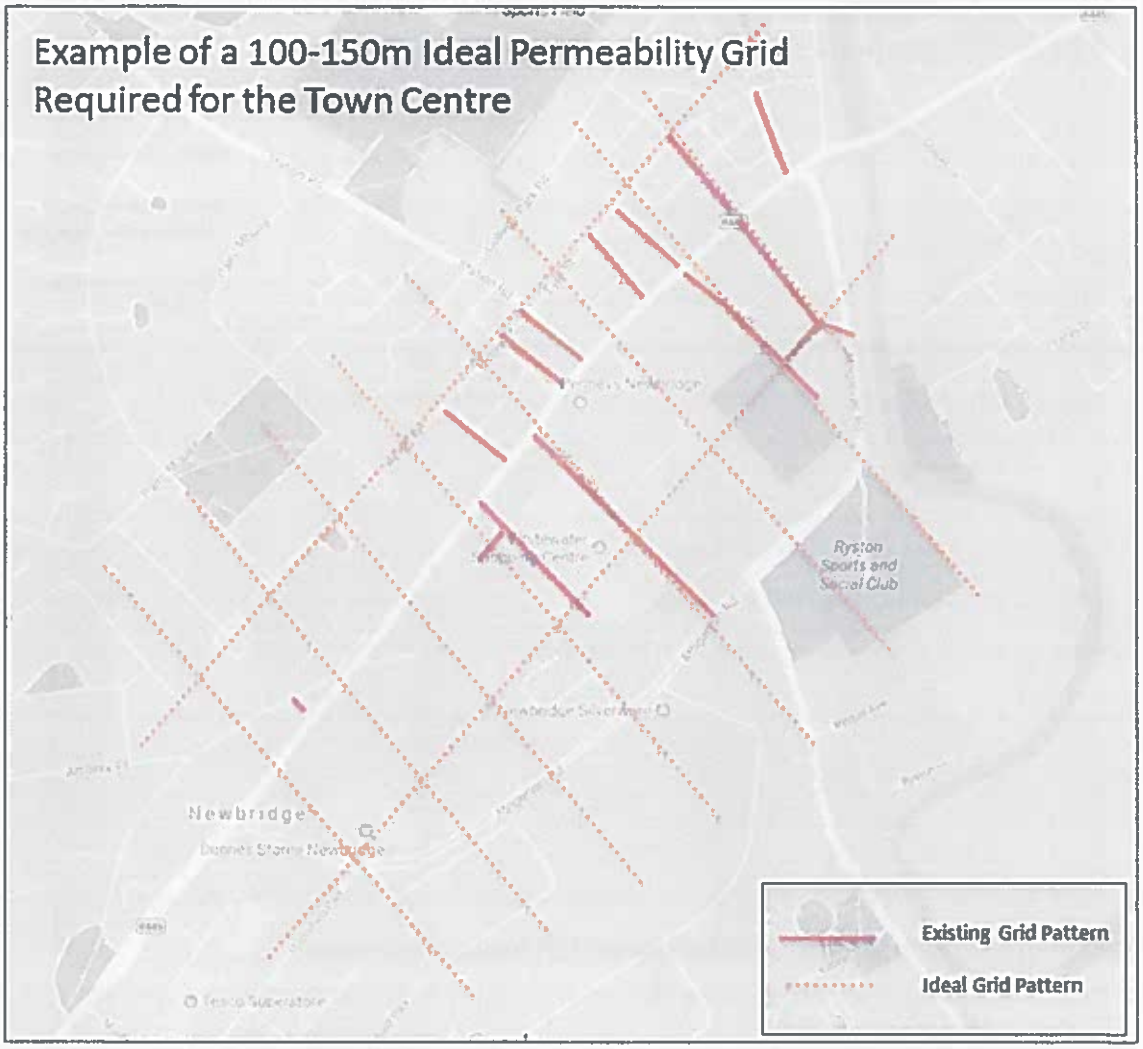

Figure 3.2: Example of a 100-150m Ideal Permeability Grid

North of the Town Permeability Concept

It should be an objective for the future development of lands to the north of the train station to provide a permeable area where access to the train station and the town centre is possible by sustainable modes.

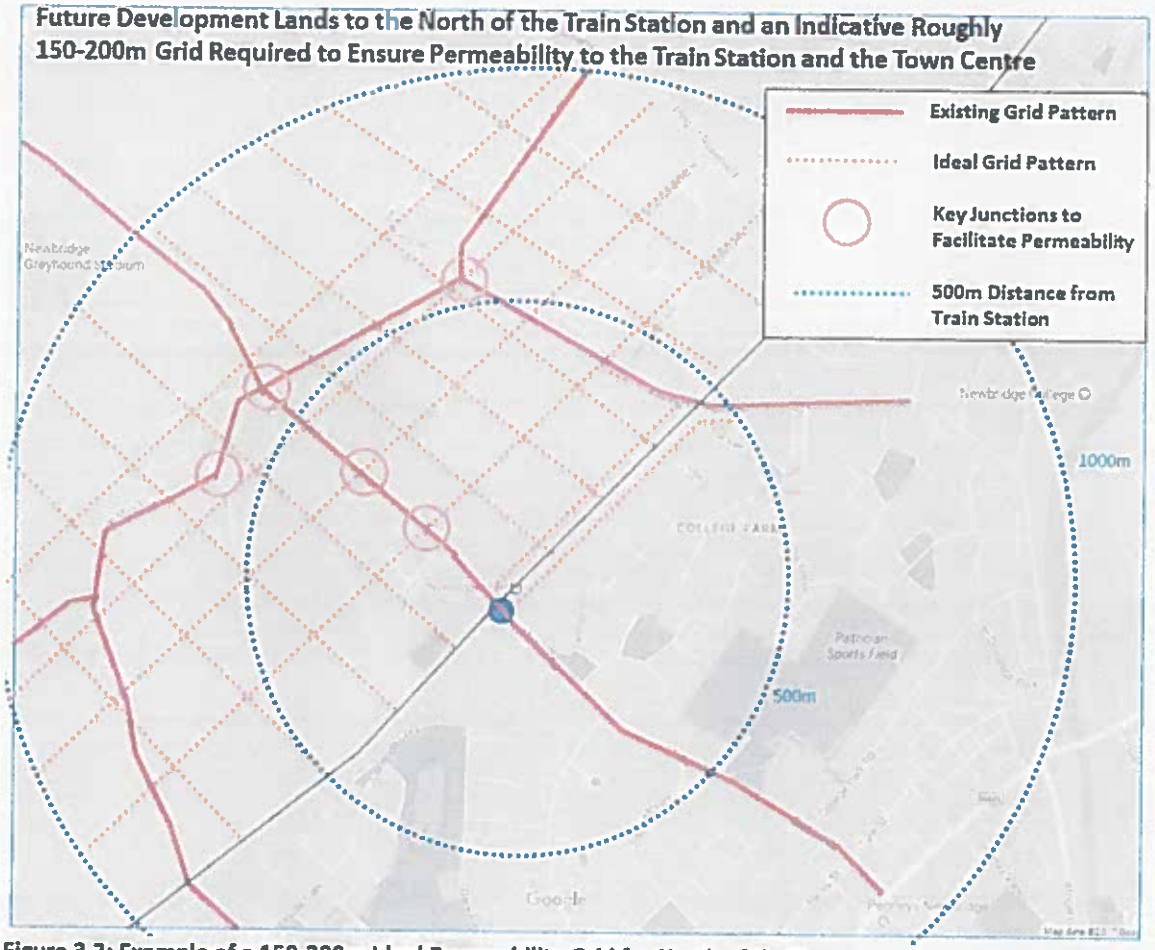

Figure 3.3: Example of a 150-200m Ideal Permeability Grid for North of the Town

Urban Realm Concept

The aim of the circulation concept is to unlock the potential of the town centre and create an attractive public realm. This will enhance the retail and cultural experience within the town.

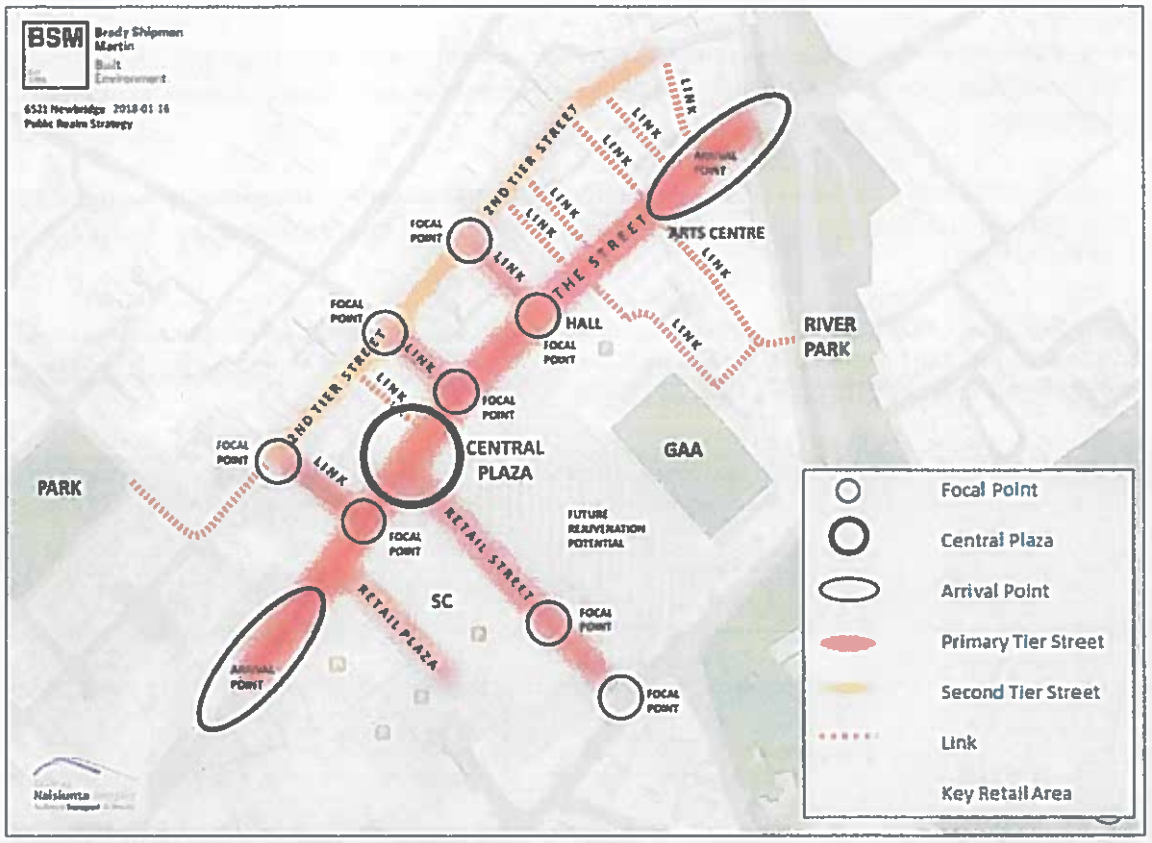

Figure 3.2: Urban Realm Concept Diagram

3.3 Road Network

St Conleth's Bridge is the only river crossing within the town and is subject to heavy traffic exacerbated by the use of Main Street by through-traffic and the location of four schools in and around the vicinity of the bridge, east of the river.

Main Street experiences high car volumes as a result of being the main route through the town leading to the only river crossing. Station Road also experiences some level of congestion in the am and pm peaks.

The R445 to the east of the town is the location of Pfizer and Lidl and is zoned for further industrial and warehousing development. The urban form of the town will therefore extend to include these lands in the future.

Within the town centre and the primary circulation routes of Edward Street/Main Street and Athgarvan Road, the junction designs are poor (not in accordance with DMURS) and do not create a safe or efficient network for pedestrians and cyclists.

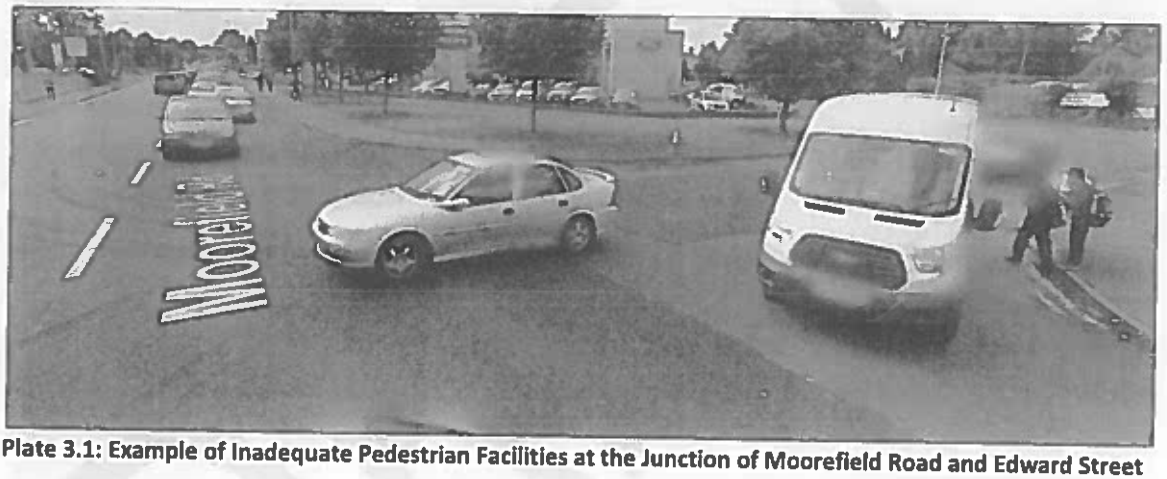

Plate 3.1: Example of Inadequate Pedestrian Facilities at the Junction of Moorefield Road and Edward Street

3.3.1 Road Network Policy Objectives

In relation to the road network it is recommended to implement the objectives contained in the Newbridge LAP 2013-2019, specifically:

> ***SRO 5:*** *To seek the construction of the following transport links, subject to environmental and conservation considerations, as identified on Maps 2 and 7 and to preserve these routes free from development:*
>
> *a) The Southern Relief Road from the R445 at Littleconnell (A) to the R416 Athgarvan Road at Kilbelin (B), including a new crossing over the River Liffey.*
>
> *b) A link from the L7042 Green Road (C) to the L7037 Standhouse Road (E), including a new junction with the R445 Ballymany Road (D).*
>
> *c) To prioritise the delivery of a link road/ street from Military Road (P) to the Southern Relief Road (Q).*
>
> *d) A link from the L7036 Morristownbiller Road (F) to the R416 Milltown Road (G).*
>
> *The design of these transport links shall be in accordance with the Design Manual for Urban Roads and Streets (DMURS).*

The delivery of the Southern Relief Road will provide an alternative route within the town and will enable the town centre to cater for more public transport, walking and cycling movements. The following objectives should be provided for to cater for these increased movements.

> ***SRO 2:*** *To provide a high quality footpath network by improving pedestrian facilities through the refurbishment of footpaths, construction of new footpaths and the provision of appropriate crossing facilities as required.*

3.3.2 Road Network Actions

In addition to the LAP road objectives, and in order to fulfil the circulation concept outlined above, the following road actions should also be implemented.

R 1: Changes to Athgarvan Road

In order to realise the potential of Edward Street/Main Street changes to Athgarvan Road may be required. It will be necessary to assess the capacity of the road and understand how this can be maximised in order to divert traffic away from Edward Street/Main Street to it.

R2: Reconfiguration of junctions at either end of Athgarvan Road

In order to encourage traffic to utilise Athgarvan Road it will be required to upgrade the junctions at either end of the Athgarvan Road to improve the capacity to make those traffic movements and to give priority where required.

R3: Reinforcement of M7 route signage

Review the signage around the town with the aim of encouraging traffic to utilise the M7 for strategic trips rather than going through the town.

R4: Traffic circulation and junction changes in the town centre

It will be required to examine the traffic circulation and junctions within the town in order to determine the optimum circulation to satisfy the objectives and circulation concept.

R5: Longer-term development of the Southern Relief Road and a new crossing over the River Liffey.

The provision of an additional bridge to the south of the town will greatly improve the road network within the town and the options for circulation.

R6: Improvements to Edward Street/Main Street

The Main Street is the heart of the town and provides access to the Whitewater Shopping Centre as well as a route to the train station, Dunnes Stores and Newbridge Visitor Centre. Enhancing the public realm to make the street a more pleasant environment for walking and cycling would provide opportunities for retailing within the town centre as well as to link with tourist attractions such as the Newbridge Visitor Centre.

The Main Street is also the main public transport artery for the town. Ensuring that the environment is pleasant and safe for public transport users will encourage public transport usage and also facilitate retail trips where pedestrian crossing points are attractive to use.

R7: Upgrading of all junctions along the Main Street/ Edward Street/Athgarvan Road

The improvement of all junctions within the town centre is key to ensuring that people can safely and efficiently move around the town and access retail and leisure services within it. Upgrading junctions will allow greater movement between the Whitewater Shopping Centre, retail along Main Street and Eyre Street as well as to Newbridge Silverware. This will allow greater public transport accessibility and encourage movement within the town.

3.3.3 Traffic Circulation Layout

Figure 3.3 below outlines the preferred option for traffic circulation within the town. This would provide for a bus only section of Edward Street, while also maintaining access to all shopping centre car parks and providing alternative means of circulation within the town. Other traffic layouts are also feasible. Alternative means of removing through-traffic can be utilised, though they may not be as effective.

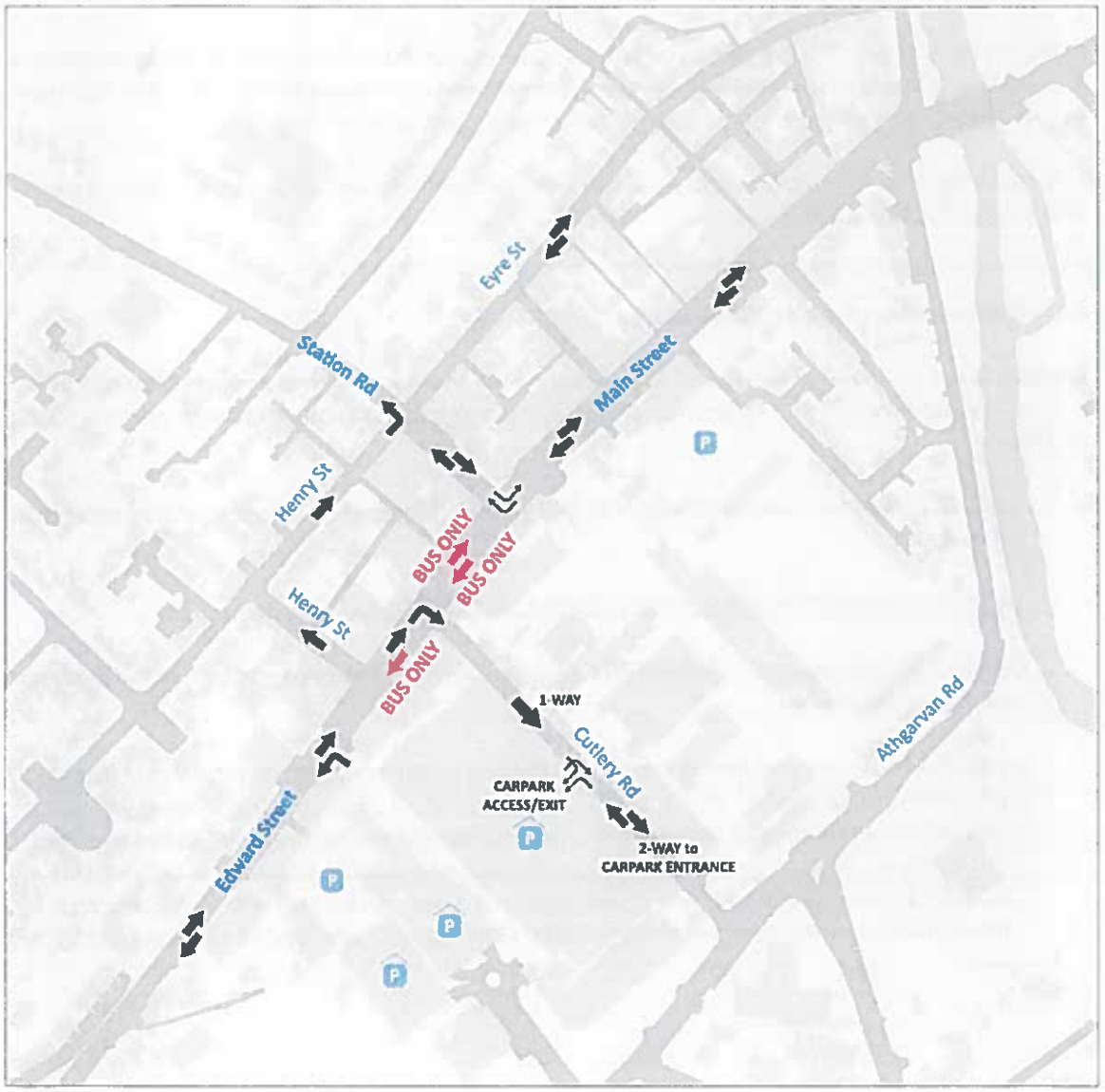

Figure 3.3 Traffic Circulation Layout

3.4 Public Transport Networks

Newbridge is well served by public transport to Dublin. The rail line provides a direct connection to Dublin city as well as other locations in Kildare and South Dublin. The opening of the Phoenix Park tunnel has greatly increased the options available to Newbridge commuters, for instance, it is now possible to alight at Pease Station within the hour. Numerous Bus Eireann routes serve the town and provide connections within Kildare, Dublin and to various universities. Local bus services also provide links to Monasterevin, Kildare and Naas as well as within the town itself.

However, as the town has expanded and will continue to expand, there may be scope to re-examine the routings of the local buses and to examine their frequency. New road proposals within the town may provide routing options with the potential to serve a greater catchment.

The following sections outline over-arching objectives and actions to improve the transport networks within the town.

3.4.1 Public Transport Policy Objectives

The *Newbridge Local Area Plan 2013-2019* contains a number of public transport related objectives. It is recommended that the objectives of the Plan in relation to public transport are pursued, specifically:

> ***PTO 1:*** *To ensure where possible, that all public transport is accessible to people with disabilities.*
>
> ***PTO 2:*** *To support the enhancement of facilities at Newbridge Train Station.*
>
> ***PTO 3:*** *To improve public transport facilities throughout the town including bus shelters and timetable information.*
>
> ***PTO 5:*** *To work in consultation with Iarnrod Eireann and the NTA to investigate the feasibility and seek the construction of a new high quality pedestrian and cycle link between the L7045 Sexes Road and the R416 Station Road, through the rail station, to improve permeability in this area and increase the walking and cycling catchment of the rail station. The feasibility of providing such a facility either to the north or south of the rail line, or both, shall be investigated in accordance with the proper planning and sustainable development of the area.*

3.4.2 Public Transport Actions

In addition to the LAP objectives, the below actions outline proposed public transport interventions including improved infrastructure as well as examining current services and exploring alterations to them which could potentially be pursued in the future.

PT1: Bus Stop Infrastructure Improvements

It has been identified that the bus stop infrastructure within the town is not of an ideal standard to encourage public transport usage. It is important that potential customers can safely and easily access the bus stops at appropriate crossing points. It is a proposed action to improve the waiting environment as well as the immediate access and crossing points to serve the public transport stops.

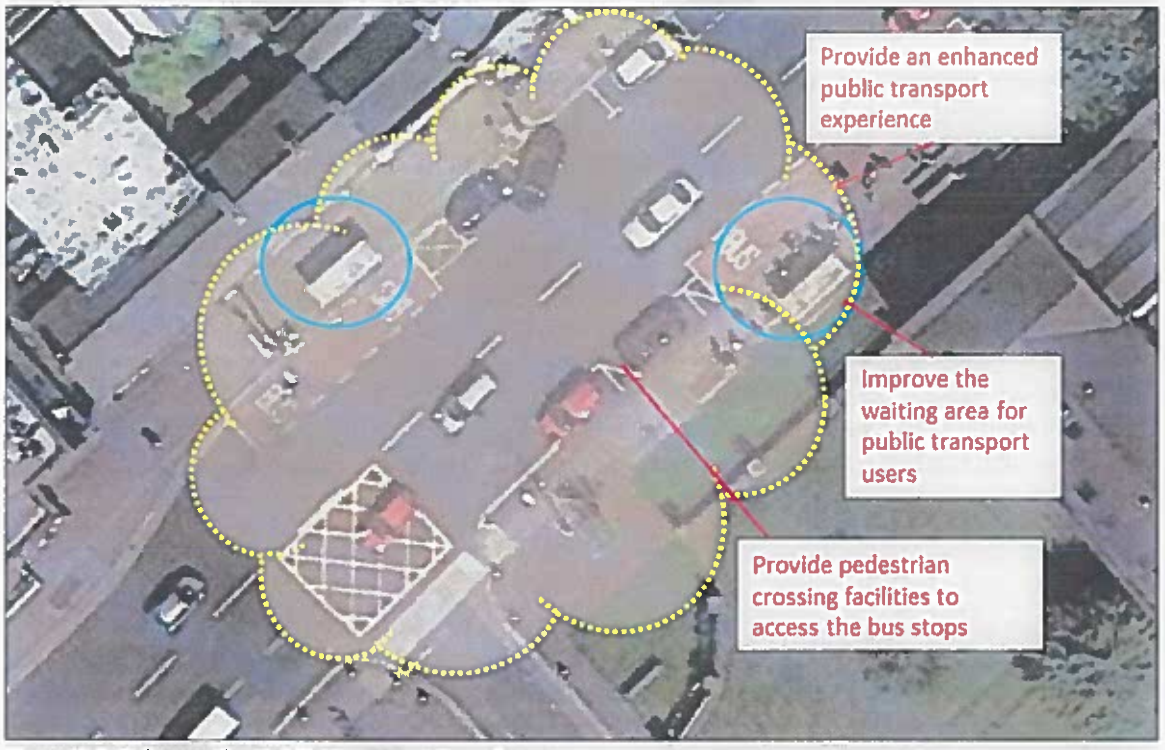

Figure 3.4: Enhance the Public Transport Experience

PT2: Train Station Infrastructure Improvements

It has been identified that the car park at Newbridge Station is currently operating close to capacity. As service improvements on the Kildare line continue, it is likely that there will be increased demand for spaces. It is a proposed action to expand the car park at Newbridge Train Station to cater for the current and anticipated future demand.

PT3: Bus Service Alternatives

Newbridge is currently serviced by a local route, the No. 129 and an inter-town service the No. 826 between Monasterevin and Naas. These services provide vital local connectivity within and between the towns. It has been identified that there may be scope to expand local services to cater for certain unmet demands within the town. For example, Section 2 outlines the internal demand between sectors. This analysis illustrates that there is significant movement between for example, Sectors E and F (on the west and south side of town) with Sector C (on the east) which contains Pfizer and Lidl. At present local bus services don't cater for this demand. No bus currently serves the Grange Heights/The Park/The Hall Road. There is an opportunity to serve the population on this road with a connection with the Train Station for instance.

It is also worth re-examining current timetables to determine whether service improvements could be made. For example, it has been identified that there is significant demand between Monasterevin, Kildare and Naas in the AM peak - however the frequency is currently once an hour.

This Plan sets out principles and potential actions in order to improve the transport offering within the town. In relation to bus service planning, the guiding principles are to meet the demand in terms of linking origins and destinations, providing sufficient frequency to meet that demand and to set the framework for required infrastructure to facilitate public transport. Certain infrastructure pre-conditions such as ensuring that the public can access bus stops through appropriate road crossings and permeability measures as well providing turning infrastructure for buses for example can be addressed.

This Plan sets the framework for providing an improved public transport offering through improving infrastructure as well as illustrating the deficits along with the potential for future public transport services. Potential route options (such as illustrated in Figure 3.5) could be explored in the future in conjunction with the NTA and in the context of public realm and permeability improvements within the town.

Figure 3.5: Example of Potential Route Option Subject to Future Exploration (Source: NTA)

3.5 Walking and Cycling Network

The current provision for walking and cycling within the town is poor. There are very few cycle lanes and the vast majority of junctions are not cycle-friendly. No design priority has been given to walking and cycling modes at junctions. In some areas pavements are of sufficient width, but there are many examples where more generous provision for pedestrians is required. The topography is relatively flat, with a few exceptions, and cycling could be a viable mode within the town if the infrastructure was provided.

A permeability analysis of the town was carried out. It was identified that permeability within certain areas of the town is quite strong, however other areas are weak. There are several barriers to permeability including the train line and the river. Some barriers, such as estate walls are relatively easier to overcome than the geographical ones such as rivers. With some minor improvements permeability could be greatly enhanced.

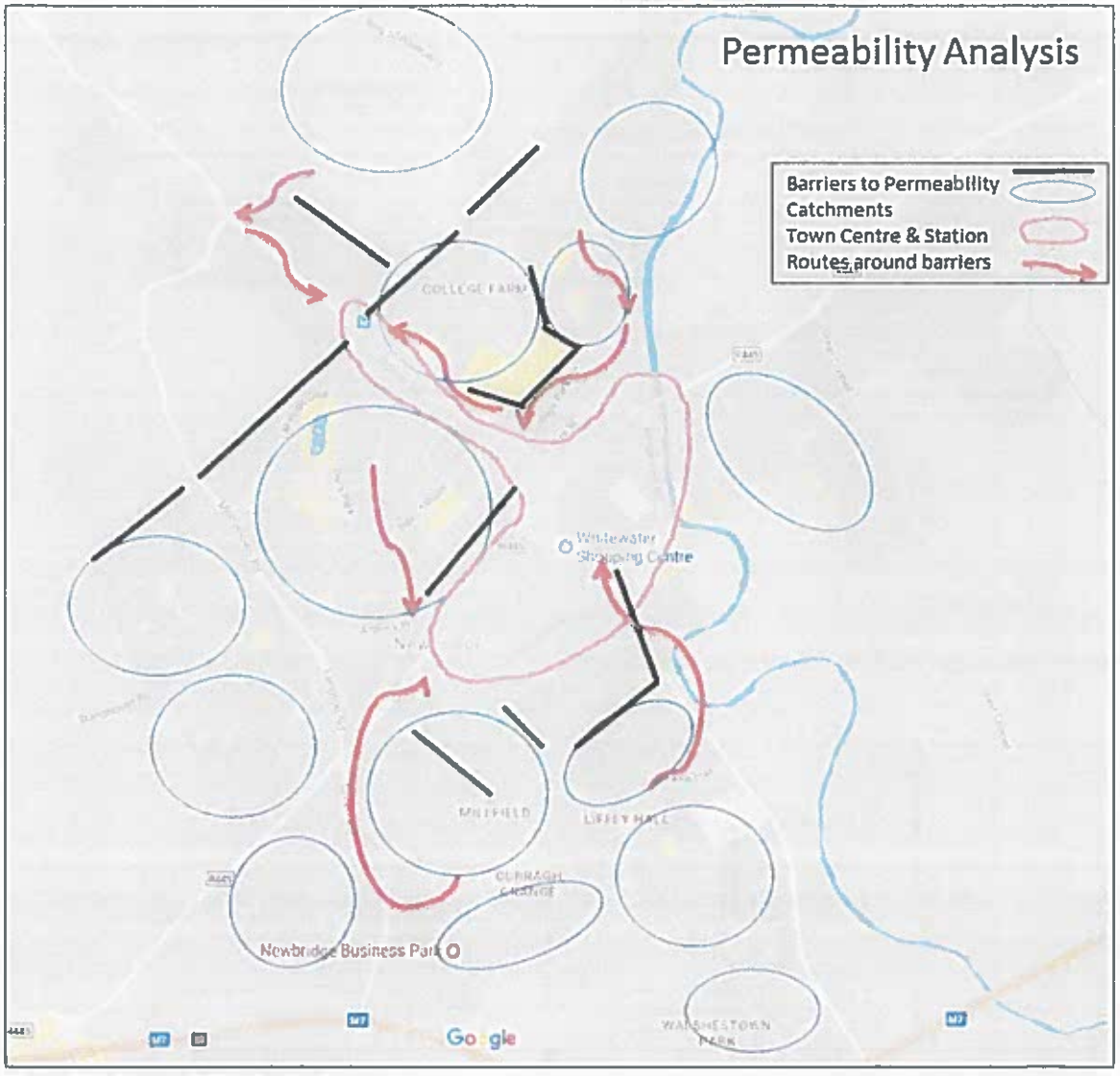

Figure 3.6: Permeability Analysis

Schools Accessibility

In total there are 9 no. primary schools, 4 no. secondary schools and 1 no. special school in Newbridge. The 14 no. schools are found at 8 no. locations, with 4 no. schools all within a few hundred metres of each other. All the secondary schools are located in the northeast of the town. Two are located close to each other, while Newbridge College and Newbridge Community College are located at a short distance. Two primary schools are located south of the M7 on the same site – Newbridge Educate Together and Gaelschoil Chill Dara.

In summary, there are a limited number of school locations. All locations warrant some level of upgrade of pedestrian/cycling crossing facilities. Each location should be assessed to determine the requirements and optimal design solution for the site.

Cycling parking facilities at each school are not known. A school accessibility audit should be undertaken and recommendations provided.

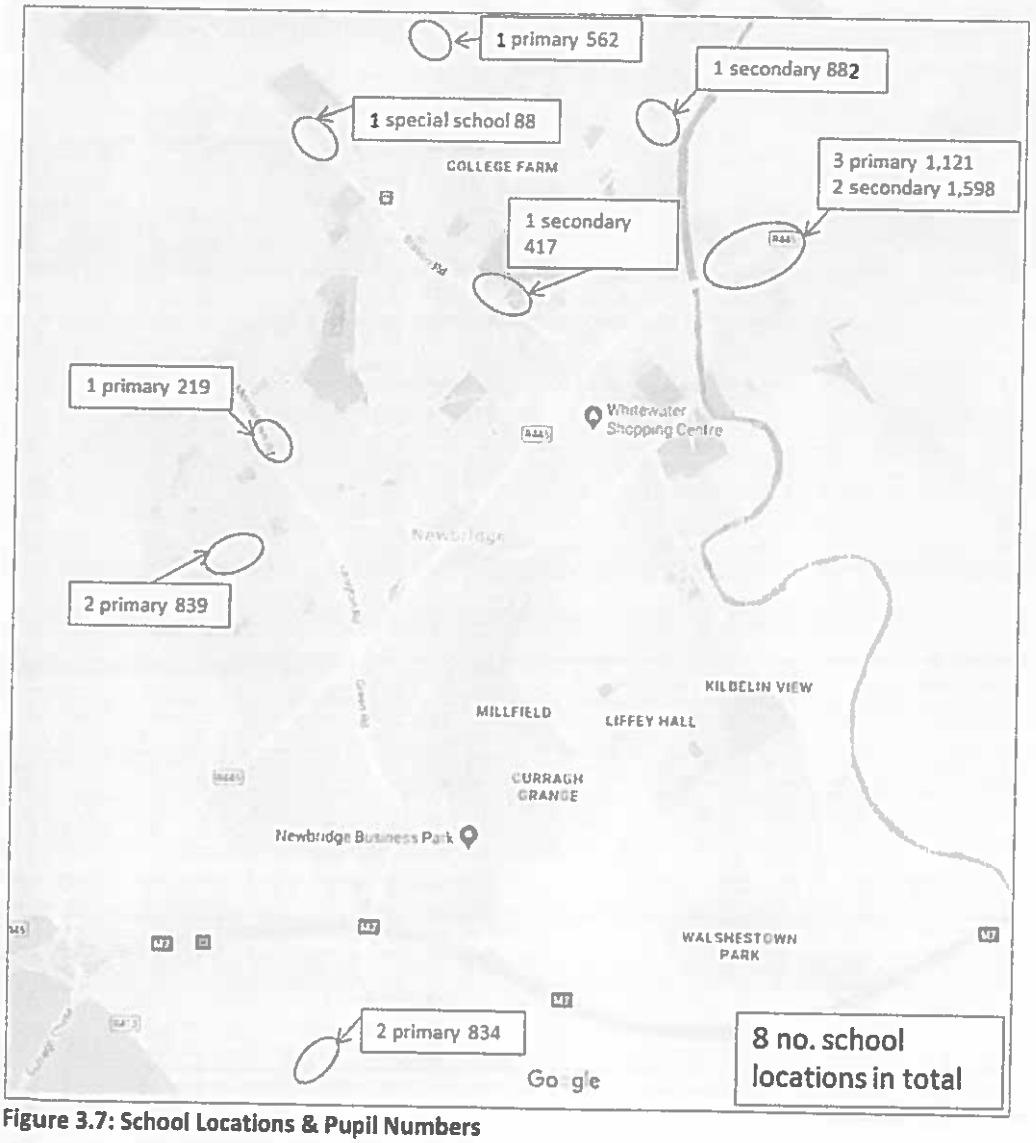

Figure 3.7: School Locations & Pupil Numbers

3.5.1 Walking and Cycling Policy Objectives

The *Newbridge Local Area Plan 2013-2019* includes a number of general objectives in relation to pedestrian and cycling provision within the town. These objectives provide a framework and guidance for the future development of infrastructure.

> ***GMO 9:*** *To develop a network of safe, high quality pedestrian and cycle routes throughout the town by:*
>
> > *a) carrying out a Cycle Network Study, having regard to the NTA Greater Dublin Area Cycle Network, to determine appropriate cycle routes, and*
> >
> > *b) Seeking the provision of suitable cycle infrastructure on these routes, designed in accordance with the NTA National Cycle Manual.*
> >
> > *c) Upgrading Station Road between the Town Centre at the Charlotte Street/ Edward Street/Main Street junction and the LAP boundary as a priority. Such improvement works must deliver a high quality urban environment within a multi-modal corridor.*
>
> ***GMO 10:*** *To ensure that all works in Newbridge accord with the principles as set out in the Design Manual for Urban Roads and Streets (DMURS), (2013).*
>
> ***GMO 13:*** *To encourage and seek the provision of landscaped pedestrian and cycle links between and within residential estates and between residential areas, the town centre, industrial areas and the railway station*



Plates 3.2, 3.3, 3.4: Examples of Cycling Infrastructure in Newbridge

3.5.2 Pedestrian & Cycle Improvement Actions

In addition to the LAP objectives, and as an outcome of the permeability audit, a number of recommendations for improvements to walking and cycling infrastructure which would make walking and cycling more attractive and have the potential to improve those mode shares are outlined below.

Recommended Actions from Permeability Audit

P&C 1: Create a pedestrian link between Rathcurragh and Langton Park.

P&C 2: Create a pedestrian and cycle route by creating a new pedestrian/cycle access point into Moorefield Park (from near Millfield Manor roundabout), through the green space running to the east of the estate, to cross Moorefield Park towards Woodies as well as improving the junction with Athgarvan Road.

P&C 3: Improve the existing pedestrian/cycle access between Allen View Heights and Standhouse Lawns.

P&C 4: Improve the existing pedestrian/cycle route between Lakeside Crescent and Station Road.

P&C 5: Improve the existing walkway between Moorefield Road and Pairc Mhuire.

P&C 6: Improve the junction at Moorefield Road and Edward Street.

P&C 7: Investigate the possibility of a pedestrian link between College Orchard/The Priory and College Farm/The Close/The Drive in order to provide greater access to the train station.

P&C 8: Improve and provide a pedestrian/cycle route from Wellesley Manor to Baroda Court and to Ash Road to connect with the pedestrian lane running beside the football pitch and to Chapel Lane.

P&C 9: Improve the existing pedestrian access between The Great Southern and The Green in order to make it cycle and pedestrian friendly.

P&C 10: Provide a pedestrian/cycle access between Sarsfield Drive and The Rise.

P& C 11: Provide a pedestrian/cycle route on the north side of the railway line between Station Road (Station Car Park) and Sexes Road to link with existing cycling infrastructure on Sexes Road.

Recommendations to Progress the Cycle Network in accordance with the *Cycle Network for the Greater Dublin Area*

P&C 12: Station Road – provide cycle infrastructure, including upgrading of junctions (as part of primary/secondary network).

P&C 13: Main Street/Edward Street/Moorefield Road - provide cycle infrastructure, including upgrading of junctions (as part of primary/secondary network).

P&C 14: Provide a link between Sexes Road and the train station, connecting to College Farm.

P&C 15: Grange Heights/The Park/The Hall - provide cycle infrastructure, including upgrading of junctions (as part of primary/secondary network).

Recommendations for School Accessibility

P&C 16: Carry out a School Audit to assess all eight school locations to provide improved pedestrian and cycle infrastructure including cycle parking.

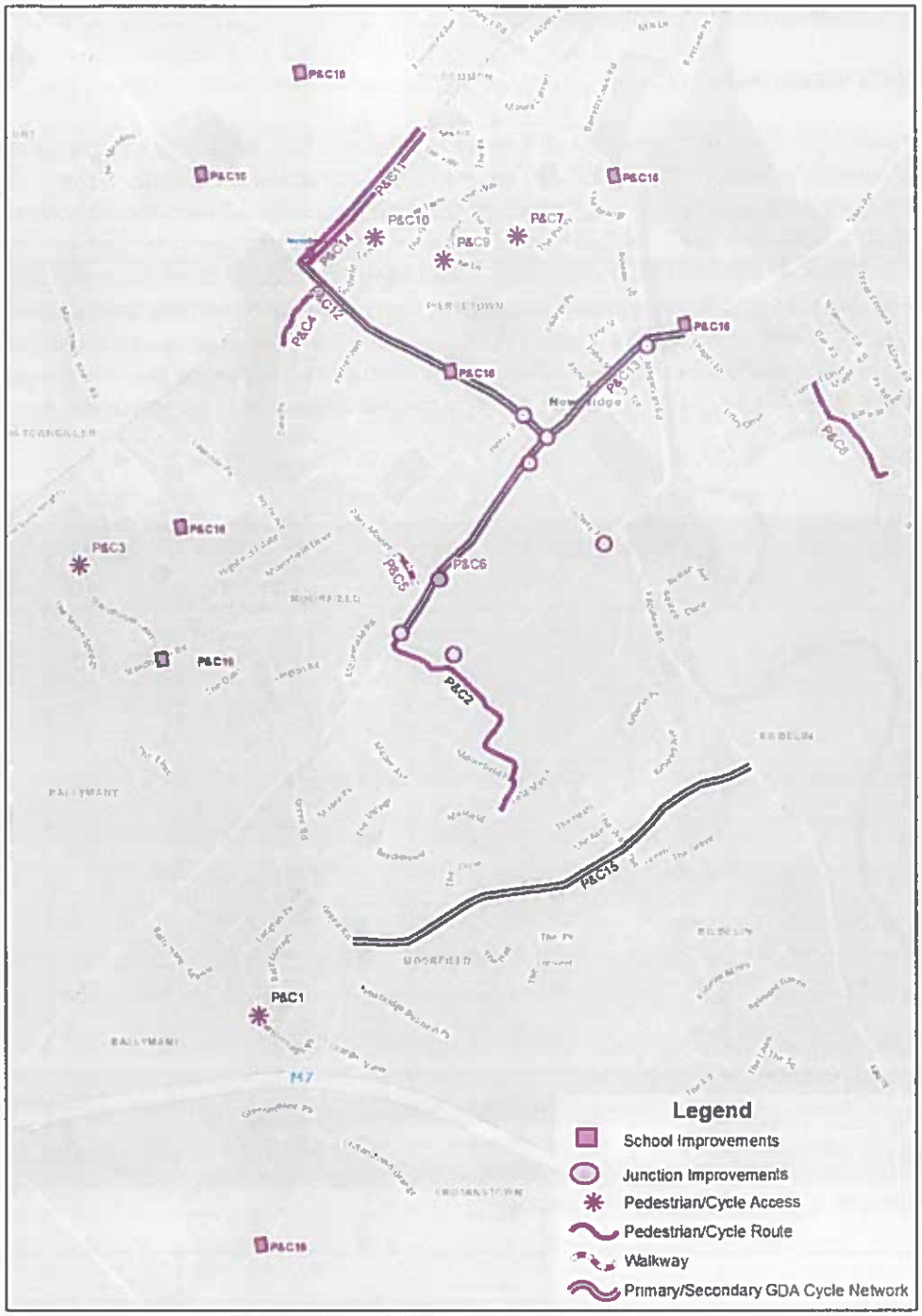

Figure 3.8: Proposed Pedestrian & Cycle Actions

3.6 Demand Management

DM1: Promoting Alternative Modes

The measures proposed throughout the plan do not advocate the widespread removal of car parking spaces from the town. The town is well served with two multi-storey car parks and therefore the removal of some small amount of on-street parking may be possible. However, all employers and schools within the town could be encouraged to examine their own policies with regard to car parking and encouraging alternative modes of transport.

DM2: Park'n'Stride/Drop'n'Hop

The town has a particular issue with regard to the location of four schools adjacent to and on the east side of St. Conleth's Bridge. This results in severe traffic congestion within the town. An alternative which should be explored is the creation of a Park'n'Stride/Drop'n'Hop location where parents can park and walk with their children the remainder of the way to the school or else can agree to collect older children from that location. The Council should consider providing access to a car park for this purpose such as the one at the Town Hall. For example one hour free parking could be provided between 8-9am and between 1-4pm to facilitate this. Shopping centres could also be encouraged to provide this service which may encourage joint school run/shopping trips. The Green Schools Programme, operated by the NTA, provides information and advice with regard to setting up such a scheme.

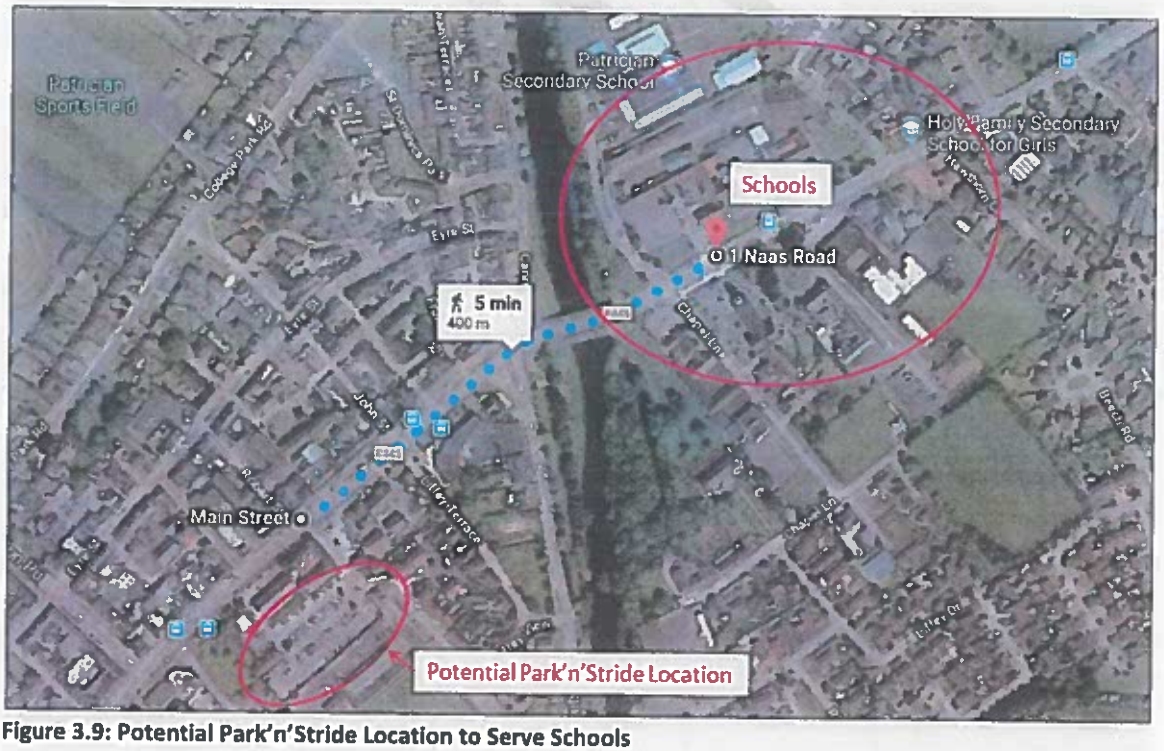

Figure 3.9: Potential Park'n'Stride Location to Serve Schools

3.7 Summary of Model Results

As part of the assessment process the proposed interventions were modelled to determine their impact on the performance of the road network. The model used for this purpose was a Local Area Model (LAM) for Newbridge which was developed using the NTA's East Regional Model (ERM) as the source. The LAM has been calibrated and validated to 2018 traffic count and journey time data for the following time periods: AM Peak (08.00-09.00), PM Peak (17.00-18.00) Saturday Shopping Peak (12.00-13.00). Details of the development of the LAM are presented in the Newbridge Model Development Report. The scenarios that were tested are outlined in the table below.

Scenario Name	Network	Demand
Do Nothing	2018 calibrated base network	2018
Scenario 1	2018 calibrated base network with • Bus Gate on Main St • Reversal of Cutlery Rd • Henry St 1-way	2018
Scenario 2	Scenario 1 network with • New Outer Bypass	2018
Scenario 3	2018 calibrated base network	2035
Scenario 4	2018 calibrated base network with • Bus Gate on Main St • Reversal of Cutlery Rd • Henry St 1-way	2035
Scenario 5	Scenario 1 network with New Outer Bypass	2035

Table 3.1: Model Scenarios

3.7.1 Key Performance Indicators (KPIs)

To assess the impact of the proposed interventions on the transport network, two sets of indicators were extracted. These are outlined in Table 3.2 below.

Mode	Indicator Set	Key Performance Indicator	Description
Road Network	Junction Volume/Capacity	Maximum V/C	Maximum V/C ratio at any one arm of the junction
		Average V/C	Average V/C ratio across all arms of the junction
	Journey Times	Bus Journey Time	Journey time by direction of buses on Main Street
		Overall Journey Time	Network wide road travel time (seconds)
		Trip Length of Trips Linked to Main Street	Trip length changes by distance bands

Table 3.2: Assessment Key Performance Indicators

The first set of indicators is the junction Volume to Capacity Ratios (V/C). This index is used to assess the performance of road infrastructure. It measures the volume of traffic against the capacity of the infrastructure available. The individual indicators report for each junction are the maximum approach V/C and the demand weighted average V/C. Average V/C is particularly useful if a particular approach of the junction is overcapacity but other arms are not. Junctions operating below 85% V/C are said to be operating within capacity, between 85-100% V/C flow breakdown

occurs with queuing becoming evident. V/Cs greater than 100% indicate that a junction is operating over-capacity with significant queuing.

The second set of indicators used in the assessment present the journey times. The individual indicators are the travel time for bus routes using Main Street, the overall network wide travel time and the travel length for traffic movements that currently use the main Street.

3.7.2 Transport Impacts

A complete set of indicators was extracted for each of the scenarios listed in 1.1. A summary of the impacts is presented below and a complete set of the results is contained in the Newbridge Model Development Report.

Overall, the results for both the 2018 and 2035 scenarios are in line with expectations. Conditions along Main Street improve. The performance of the reconfigured junctions at either end of the Athgarvan Road is similar to the existing situation. As expected, the diversion of traffic from Main Street increases the traffic on Athgarvan Road and the conditions at junctions along this route worsen. There is scope to refine the signal timing and phases used in the model to improve the functioning of the junctions with and along Athgarvan Road. This can be addressed at the next phase of the project.

The model also shows that the planned improvements will significantly improve bus journey times through the town in the AM peak and maintain the journey time in the other periods.

Impact on Junction Indicators

When compared with the Do Nothing Scenario we see change to both the Average V/C and the Maximum V/C in all scenarios. Firstly we consider the changes in the 2018 scenarios. The modelling results show that the junction of Athgarvan Road and Main Street remains over capacity in all time periods. There is an increase in both Maximum and Average V/C in the PM peak and on Saturdays with a slight improvement in both measures in the AM peak. The Maximum and Average V/C of the remaining junctions on the main street reduce in all periods.

The Maximum and Average V/C at the Athgarvan Rd / R416 and the Athgarvan Rd / Cutlery Rd junctions increase in all time periods and reach a level where flow begins to breakdown and queuing develops. The R445 / Green Rd and Langton Rd / Standhouse Rd junctions also experience increases in Maximum and Average V/C in all time periods. The impact on the Langton Rd / Standhouse Rd junction is greater. Further examination of these junctions could be carried out in the future in order to ensure that they are operating in the most efficient manner to facilitate the required movements.

The Maximum and Average V/C in Scenario 2 (i.e. infrastructure improvements plus the Southern Relief Road), follow similar patterns to Scenario 1 with a slight reduction at the Main St East / Athgarvan Rd (particularly in the PM), however, the R416 / L2003 sees a significant increase. It is evident from both the Maximum and Average V/C values that traffic is diverting from the R445 and Athgarvan Road to use the new Southern Relief Road.

In the 2035 Do Nothing (Scenario 3) the Maximum and the Average V/Cs are higher than in 2018 but with the exception of the PM the same junctions are worst performing. In the PM the Maximum V/C is in excess of 100% for most locations. With the proposed interventions the Maximum and Average V/C values change in a similar manner to the 2018 scenarios with the notable exception of the Athgarvan Road and Main Street junction which improved slightly compared to the 2035 Do Nothing

Scenario. Given the poor performance of the network in all 2035 scenarios additional measures may be required to meet demand.

The results of the V/C analysis are that the proposed measures will not make the existing situation significantly worse in the majority of cases. They illustrate that by 2035 additional measures will be required in order to relieve several junctions even in the Do Nothing Scenario.

Impact on Journey Time Indictors

As outlined above three key indicators were selected to assess the impact of the proposed measures. These were; bus journey time, overall journey time and journey length of trips linked to the Main Street.

The bus journey time for Northbound buses in the AM peak improves significantly as a result of the proposed measures. It is now similar to the journey time in the southbound direction. The Bus Journey Times in the other time periods remain the same.

The overall journey time increases in both time periods following the introduction of the proposed measures. A significant proportion of this increase is caused by the diversion around the town of short trips accessing Main Street through the bus only segment. There is also significant potential for refinement to the signals which should be carried out at the design phase.

The journey length linked to Main Street will increase as expected due to the requirement to re-route around the Main Street and the bus gate. However, the largest increases in journey length are those which are short trips, where a short diversion results in a higher percentage increase in trip length. It would be expected that for these very short trips i.e. less than one kilometre that they would be predominantly made on foot in any event. Where the trips are longer in distance, in other words for trips travelling through the town i.e. 2-3kms or 3-4kms the increase in journey length is far less significant.

3.7.3 Summary

In summary, the assessment of the proposed measures demonstrates that they did not cause any unexpected consequences and in fact showed that the impact of the measures on certain junctions was to improve their capacity.

The model illustrated that the Framework actions will have the intended positive outcomes for the regeneration of the town as well as improving mode share without dis-benefits to the functioning of the road network. The model results show that the proposed measures provide for the efficient movement of private car trips as well as improving the situation for sustainable and public transport modes by freeing-up the Main Street and creating a more pleasant and safe environment for all road users. The model showed that the proposed measures will make public transport trips a more attractive alternative to residents and employees within the town by reducing journey time in the AM peak.

4 FINAL TRANSPORT FRAMEWORK

4.1 Proposed Transport Framework

The proposed Framework is a combination of the measures outlined in Section 3. If these measures are followed it is envisaged that the town centre can be revitalised and become an attractive area for retail, socialising and leisure activities. In tandem with this, the use of sustainable transport will increase, increasing the overall attractiveness and liveability of the town.

4.1.1 The Future Town Centre

Edward Street 'Plaza'

The concept for the Edward Street 'Plaza' is to create the feeling of a street rather than a road. This will be achieved by creating a traffic-calmed area which, while still fully accessible by car, will support greater use of public transport and walking and cycling. The street can be narrowed allowing the creation of wider footpaths which can incorporate street furniture including seating for cafes and shops. The aim is to create a pleasant street environment where people will want to linger and enjoy the retail and cultural facilities in the town.

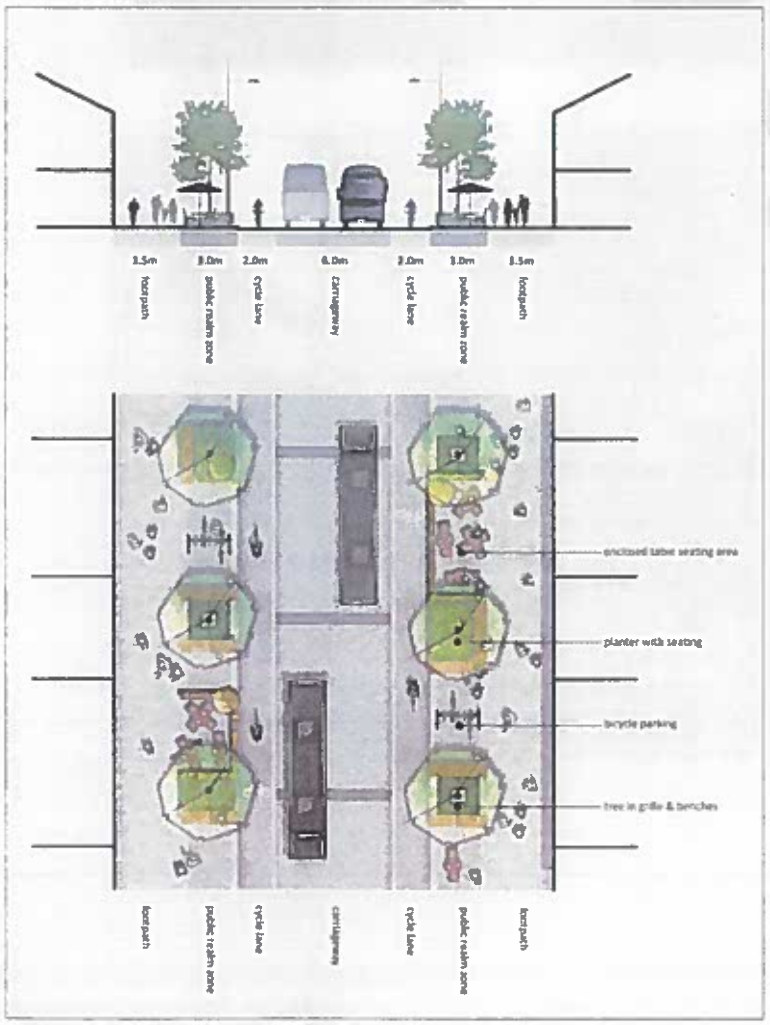

Figure 4.1: Edward Street 'Plaza'

Plate: 4.1: Edward Street Before

Plate 4.2: Edward Street After

Main Street

The street concept is continued onto Main Street incorporating wider footpaths and introducing a cycle lane. On-street car parking is provided with parking bays and trees interspersed. The improved public realm will draw pedestrians onto the Main Street providing connection between the retail and cultural attractions.

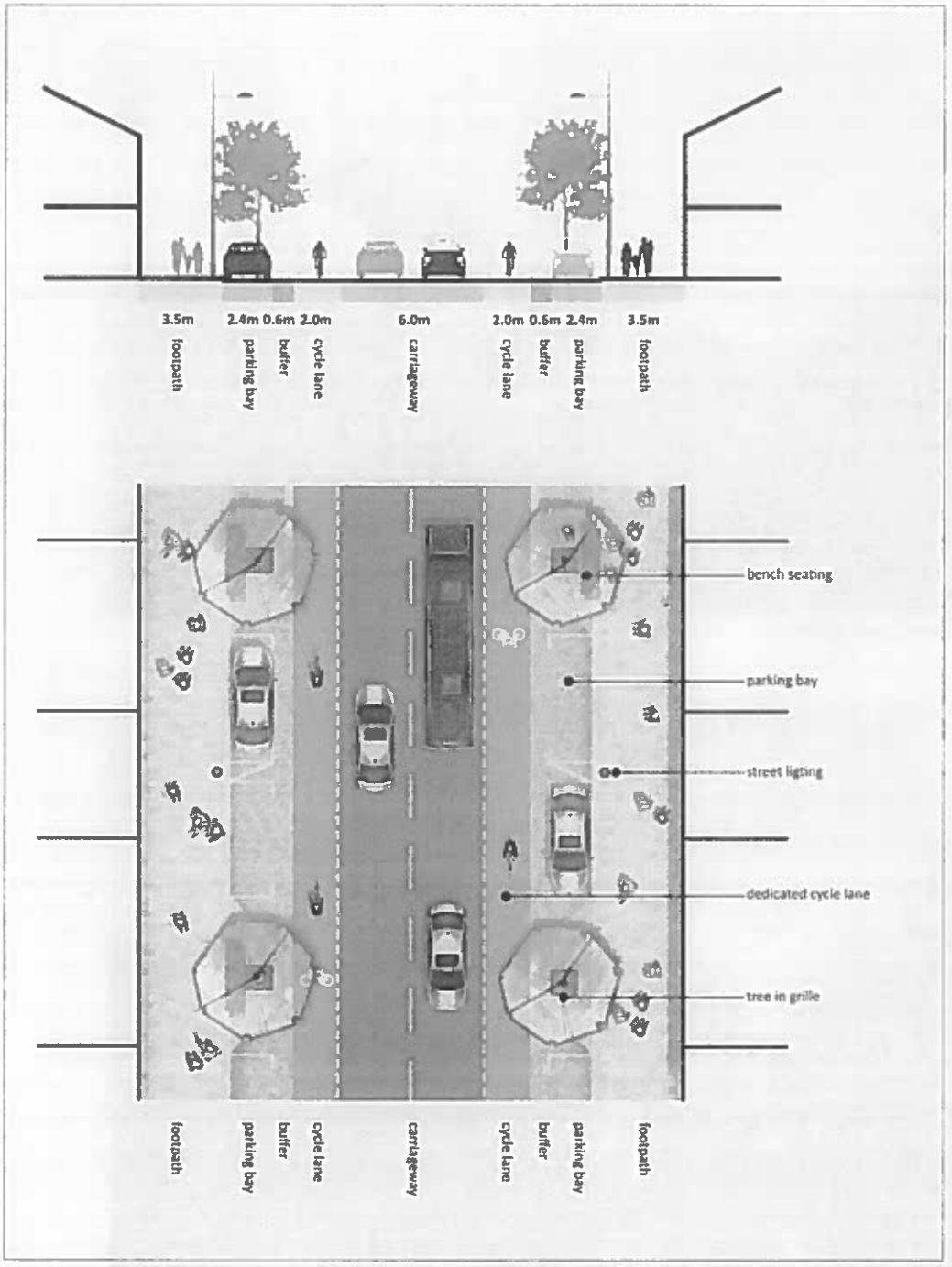

Figure 4.2: Main Street

Plate 4.3: Main Street Before

Plate 4.4: Main Street After

Main Street & Athgarvan Road

The concept for the junction of Main Street and Athgarvan Road is to facilitate the increased movement of vehicles from Athgarvan Road onto the R445 while at the same time ensuring that movement by sustainable modes is enabled. Creating a rationalised junction will allow the creation of a public plaza with the potential to incorporate a 'welcome' art sculpture at the entrance to the town centre. Providing a raised pedestrian crossing at Main Street will ensure the safe movement of pedestrians.

Figure 4.3: Main Street & Athgarvan Road

Plate 4.5: Main Street & Athgarvan Road Before

Plate 4.6: Main Street & Athgarvan Road After

4.2 Proposed Actions & Timelines

Table 4.1 outlines all the recommended actions contained within the Framework. They are categorised into short/medium/long term. An indicative cost is assigned to each action.

Actions	Short	Medium	Long
R1 Changes to Athgarvan Road			
R2 Reconfiguration of junctions at either end of Athgarvan Road			
R3 Reinforcement of M7 route signage			
R4 Traffic circulation and junction changes in the town centre			
R5 Development of the Southern Relief Road and a new crossing over the River Liffey			
R6 Improvements to Edward Street/Main Street			
R7 Upgrading of all junctions along the Main Street/Edward Street/Athgarvan Road			
PT1 Bus Stop Infrastructure Improvements			
PT2 Train Station Infrastructure Improvements			
PT3 Bus Service Alternatives			
P&C1 Create a pedestrian link between Rathcurragh and Langton Park			
P&C2 New pedestrian/cycle access point into Moorefield Park			
P&C3 Improve existing pedestrian/cycle access between Allen View Heights and Standhouse Lawns			
P&C4 Improve the existing pedestrian/cycle route between Lakeside Crescent and Station Road			
P&C5 Improve the existing walkway between Moorefield Road and Pairc Mhuire			
P&C6 Improve the junction at Moorefield Road and Edward Street			
P&C7 Investigate the possibility of a pedestrian link between College Orchard/The Priory and College Farm/The Close/The Drive in order to provide greater access to the train station			
P&C8 Improve and provide a pedestrian/cycle route from Wellesley Manor to Baroda Court and to Ash Road			
P&C9 Improve the existing pedestrian			

access between The Great Southern and The Green in order to make it cycle and pedestrian friendly			
P&C10 Provide a pedestrian/cycle access between Sarsfield Drive and The Rise			
P&C11 Provide a pedestrian/cycle route on the north side of the railway line between Station Road (Station Car Park) and Sexes Road to link with existing cycling infrastructure on Sexes Road			
P&C12 Station Road- provide cycle infrastructure, including upgrade of junctions			
P&C13 Main Street/Edward Street/Moorefield Road - provide cycle infrastructure, including upgrade of junctions			
P&C14 Link between Sexes Road and the train station, connecting to College Farm			
P&C15 Grange Heights/The Park/The Hall – provide cycle infrastructure, including upgrade of junctions			
P&C 16 Assess all eight school locations to provide improved pedestrian and cycle infrastructure as well as cycle parking			
DM1 Promoting alternative modes			
DM2 Park'n'Stride/Drop'n'Hop			
Total Cost			

Table 4.1: Proposed Actions and Timeframe

4.3 Incorporation into Land Use Planning

This Framework builds on the work carried out in the *Newbridge Local Area Plan 2013-2019*. It is hoped that this Framework will feed into the review of the next LAP and set the movement context for it. It is envisaged that the concepts and proposed actions will inform the next LAP and be incorporated into it. It is critical that future land use planning is integrated with transport planning so that sustainable modes and public transport are considered from the outset and that car-based travel is not the default option for the future population.

While it is a challenge, it is also critically important that the future expansion to the north of the railway line fully integrates with the rest of the town and connectivity to it and the train station are provided. It is essential that filtered permeability is designed into new development from the outset rather than have to be retrofitted. The type of land uses permitted in the vicinity of the train station should be reassessed in order to ensure that the most efficient use of land is provided for in proximity to a high capacity public transport network.

The Masterplan lands to the east of the town, zoned for industrial and warehouse development, currently the location of Pfizer and Lidl, should be integrated into the town. The lands are within

range for local public transport as well as sustainable transport modes from the residential areas within the town. The future development of these lands should ensure that these modes are provided for at the development stage and that connections to residential areas are provided for. The Masterplan lands should be designed to be fully permeable for sustainable modes.

Principles to Guide an Integrated Approach to Land Use and Transport Planning

1. That higher density development should be provided within the town centre as well as adjacent to the high capacity transport link provided by the rail line.

2. That all future development areas should be integrated with the existing built-up area, in particular the town centre and the train station, including by sustainable modes.

3. That all future development should incorporate the concept of filtered permeability whereby the development is fully accessible by sustainable modes in order to support walking and cycling as convenient means of movement.