



# KILDARE TOWN TRANSPORT STRATEGY

Volume 2, Part 1 - Appendices



# Kildare Town Transport Strategy

## Volume 2, Part 1 Appendices

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## Appendix A Baseline Report

# Kildare Town Transport Strategy

Baseline Report

Kildare County Council

January 2021

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# 1 Introduction

## 1.1 Context

AECOM have been appointed by Kildare County Council (KCC) to prepare a transport strategy for Kildare Town. This strategy aims to secure long-lasting transport improvements in Kildare town to ensure growing use of sustainable travel modes for work, education, business and visitor trips.

The purpose of the Baseline Report is to provide context for the development of a future Kildare Town Transport Strategy. The Baseline Report reviews the policy background, the local urban area, key transport indicators, survey data and initial public and stakeholder consultation results. The Baseline Report considers the implications of the data for all transport modes; road, parking, rail, bus, cycling and walking. Building on the conclusions of the Baseline Report, numerous strategy options will be developed and brought forward for further assessment to create the draft transport strategy.

## 1.2 Project Background

The population of the Kildare Town was 8,634 in 2016, which represents a modest population increase of 6% since the 2011 Census. In recent decades, the periphery of Kildare Town has expanded to accommodate new housing estates and Kildare Retail Village, an important employment and visitor destination. Kildare Town contains numerous medieval features and the Irish National Stud which attracts a substantial number of tourists each year. In respect to sustainable travel, Kildare Town has a centrally located train station, which is an advantage in the promotion of car alternatives, and a relatively compact town centre which is suitable for cycling and walking if infrastructure improves. Furthermore, local schools are located inside the settlement boundary and potentially within walking or cycling distance for most pupils and parents. From a roads perspective, Kildare town has excellent access to the national road network via Junction 13 on the M7. At present, car dependency is relatively high, with 74% of residents driving to work, which represents a key challenge in the promotion of sustainable travel.

The Kildare Town Transport Strategy (KTTS) aims to provide a multi-modal framework to inform future transport infrastructure planning, investment and delivery. The KTTS will inform the development of the Draft Kildare Town Local Area Plan (2021-2027) in line with the proposals in the Kildare County Development Plan 2017-2023 and relevant national policy. The transport strategy is focused on sustainability, which in practice means; supporting compact urban growth, encouraging modal shift from car to sustainable transport modes and promoting Kildare Town Centre as the core of economic and social activity in the settlement. The KTTS aims to make Kildare Town more attractive to live, work, visit and recreate in for residents and visitors. The strategy will examine all transport modes and travel within the town, with particular focus on the links between residential and employment areas as well as the town centre and the train station. It will be a priority of the strategy to improve walking and cycling infrastructure, in a comprehensive plan which will also provide measures to improve travel by public transport and road.

## 1.3 Preliminary Aims of the Strategy

The preliminary aims of the Kildare Town Transport Strategy are to achieve the following:

- The transport strategy will focus on sustainability by encouraging compact growth and a modal shift away from car transport.
- The strategy will promote Kildare's Town Centre as the core of activity and improve its transport system, making Kildare Town a more attractive place to live, work, visit and recreate.
- The transport strategy will examine all transport modes and how they interact in both the town centre and its environs. Particular focus will be placed on links between residential and employment areas, as well as the town centre and railway station.
- The transport strategy will prioritise walking and cycling links.

- The strategy will examine and provide recommendations for: Walking, Cycling, Public Transport, Parking and Traffic (including HGV traffic).

The Baseline Report will inform the development of KTTS objectives which will be grouped into the five modes of transport considered by the strategy: public transport, walking, cycling, traffic and parking. The KTTS objectives will be used to assess the options created in the next stage of strategy development to resolve the transport issues identified in the Baseline Report.

## 1.4 Study Area

The study area for the KTTS is shown in Figure 1.1 as a blue circle. The study area encompasses the urban area of Kildare Town, the surrounding rural periphery and the Irish National Stud to the south.



Figure 1.1 KTTS Study Area

## 1.5 Report Structure

The KTTS baseline report is structured into the following sections:

2. Policy Context  
This section reviews the relevant national, regional and local planning policy.
3. Settlement Context  
This section reviews key demographic data regarding population, land-use composition, employment, deprivation and education facilities to assess the transport implications.
4. Transportation Context

This section reviews key transport information regarding public transport provision, the road network, collisions, modal split, origin-destination data and permeability.

5. Public and Stakeholder Consultation

This section reviews the stakeholder engagement that has taken place and the results of an online survey.

6. Surveys

This section summarises the survey data which has been collected in respect to parking, walking, cycling and traffic.

7. Conclusion and Next Steps

This section concludes on the key outcomes of the Baseline Report and outlines the next steps in the strategy process.

## 2 Policy Context

This section reviews relevant national, regional and local policy documents to highlight transport proposals or planned infrastructure which will affect the KTTS study area.

### 2.1 National Policy

#### 2.1.1 National Planning Framework

Project Ireland 2040 – National Planning Framework (NPF) provides a high-level strategic planning framework to guide development and investment over the coming decades. The NPF contains a set of ten National Strategic Outcomes (NSOs) to guide future development and investment.

The NPF notes that Kildare is located in the Eastern and Midland Region which has experienced high levels of population growth in recent decades, at more than twice the national growth rate. A population of 2.58 million is forecast in the Eastern and Midland Region by 2040; 500,000 more people than live there at present.

Key future planning, development and place-making policy priorities for the Eastern and Midland Region which are relevant to Kildare include:

- “Enabling the complementary development of large and county towns in the wider Greater Dublin Area and Midland areas on the key strategic and public transport routes in a regionally co-ordinated manner, with an enhanced emphasis on measures to promote self-sustaining economic and employment based development opportunities to match and catch-up on rapid phases of housing delivery in recent years.”<sup>1</sup>
- “Building on the progress made in developing an integrated network of greenways, blueways and peatways, that will support the diversification of rural and regional economies and promote more sustainable forms of travel and activity based recreation utilising canal and former rail and other routes.”<sup>1</sup>

From the ten National Strategic Outcomes: NSO 1: Compact Growth, NSO 2: Enhanced Regional Accessibility and NSO 4: Sustainable Mobility are the most relevant to the Kildare Town Transport Strategy.

Another applicable objective from the document is the NPF’s National Policy Objective (NPO) 27 that states:

- “Ensure the integration of safe and convenient alternatives to the car into the design of our communities, by prioritising walking and cycling accessibility to both existing and proposed developments, and integrating physical activity facilities for all ages.”<sup>2</sup>

NPO 35 states that residential densities in settlements should be increased which is relevant to create urban centres which can support higher frequencies of public transport. NPO 35 states the following:

- “Increase residential density in settlements, through a range of measures including reductions in vacancy, re-use of existing buildings, infill development schemes, area or site-based regeneration and increased building heights.”

#### 2.1.2 National Development Plan 2018 – 2027

The National Development Plan (NDP) sets out the investment priorities that underpin the successful implementation of the new National Planning Framework. It is designed to guide national, regional and local planning and investment decisions in Ireland over the next two decades.

The National Development Plan demonstrates the Government’s commitment to meeting Ireland’s infrastructure and investment needs over the next ten years, through a total investment estimated at

<sup>1</sup> *Project Ireland 2040 – National Planning Framework, p.35*

<sup>2</sup> *Project Ireland 2040 – National Planning Framework, P82*

€116 billion over the lifetime of the plan. The NDP has also allocated funding for the procurement of some 300 additional rail carriages which help to provide an increased level of service on the Kildare rail line, directly benefiting Kildare Town.

### 2.1.3 Smarter Travel – A Sustainable Transport Future 2009 – 2020

Smarter Travel – A sustainable Transport Future is a sustainable transport policy for Ireland covering the period 2009 – 2020. Delivering this policy is a key objective of Government because current transport and travel trends are unsustainable.

Despite investment in road infrastructure, congestion will get worse, transport emissions will continue to grow, economic competitiveness will suffer, and quality of life will decline unless more sustainable transport policies are adopted. This document outlines the Government's vision for sustainability in transport by setting out key goals, which are to:

- Improve quality of life and accessibility to transport for all and, in particular, for people with reduced mobility and those who may experience isolation due to lack of transport;
- Improve economic competitiveness through maximising the efficiency of the transport system and alleviating congestion and infrastructural bottlenecks;
- Minimising the negative impacts of transport on the local and global environment through reducing localised air pollutants and greenhouse gas emissions;
- Reduce overall travel demand and commuting distances travelled by the private car; and
- Improve security of energy supply by reducing dependency on imported fossil fuels.

In relation to roads, the proposed policy is to retain investment in roads that will remove bottlenecks, ease congestion and pressure within towns and villages, and provide the necessary infrastructure links to support the National Spatial Strategy, which has since been superseded by the National Planning Framework.

For bus transport providers, including the CIE Group and private operators, quality roads are an essential requirement. Investment in the road network is therefore a key ingredient in improved public transport in Ireland. Improved public transport is also a key priority under the Government's Strategic Investment Framework for Land Transport and the Infrastructure and Capital Investment Plan 2016 – 2021.

The strategy has an overriding goal that by 2020, 55% of all commuting trips will be made by sustainable means of walking, cycling and public transport.

### 2.1.4 National Cycle Policy Framework 2009-2020

The vision of the National Cycle Policy Framework (NCPF) was to create a strong and vibrant cycling culture in Ireland that would see 10% of all commuting trips being made by bike by 2020. The NCPF was required to respond to the declining number of cyclists since the 1980's. The NCPF builds on sustainable transport commuting targets outlined in the Smarter Travel document containing specific measures to enhance cycling in Ireland in order to increase participation. The NCPF is underpinned by 19 key objectives that cover the areas of Infrastructure, Communication/Education, Financial Resources, Legislation and Enforcement, Human Resources and Coordination and Evaluation and Effects. These Objectives are:

1. Support the planning, development and design of towns and cities in a cycling and pedestrian friendly way.
2. Ensure that the urban road infrastructure (with the exception of motorways) is designed / retrofitted so as to be cyclist-friendly and that traffic management measures are also cyclist friendly.
3. Provide designated rural cycle networks especially for visitors and recreational cycling.
4. Provide cycling-friendly routes to all schools, adequate cycling parking facilities within schools, and cycling training to all school pupils.

5. Ensure that all of the surfaces used by cyclists are maintained to a high standard and are well lit.
6. Ensure that all cycling networks - both urban and rural - are signposted to an agreed standard.
7. Provide secure parking for bikes.
8. Ensure proper integration between cycling and public transport.
9. Provide public bikes in cities.
10. Improve the image of cycling and promote cycling using "soft interventions" such as promotional campaigns, events etc.
11. Improve cyclists' cycling standards and behaviour on the roads.
12. Improve driver education and driving standards so that there is a greater appreciation for the safety needs of cyclists.
13. Support the provision of fiscal incentives to cycle.
14. Provide appropriate levels of, and timely, financial resources towards implementing the NCPF.
15. Introduce changes to legislation to improve cyclist safety.
16. Improve enforcement of traffic laws to enhance cyclist safety and respect for cyclists.
17. Develop a structure that can coordinate the implementation of activities across the many Government Departments, Agencies and NGO's.
18. Provide design professionals with suitable training / guidance to develop and implement the policies of the NCPF. Support the deepening of knowledge of the subject of planning for cyclists in Ireland.
19. Evaluate the cycling policy and monitor the success as the measures are implemented.

### 2.1.5 Building on Recovery: Infrastructure and Capital Investment 2016 – 2021

Building on Recovery was the Capital Plan that presented the Government's framework for infrastructure investment in Ireland over the period 2016 to 2021.

It stated that the "...Capital Plan is a high level financial and budgetary framework. It is not part of the physical planning process". It goes on to state that "The Exchequer transport capital allocation is largely framed by the recommendations and priorities set out in the recently published Strategic Investment Framework for Land Transport. These priorities are threefold: to maintain and renew the strategically important elements of the existing land transport system; to address urban congestion; and to improve the efficiency and safety of existing transport networks".

### 2.1.6 Investing in Our Transport Future – A Strategic Framework for Investment in land transport

The Strategic Investment Framework for Land Transport (SIFLT) which was published by the Department of Transport, Tourism and Sport (DTTAS) outlines the key principles against which national and regional, comprehensive and single mode based plans and programmes will be drawn up and assessed. The framework does not set out a list of projects to be prioritised, however, the following three priorities are noted in terms of investment:

- Priority 1 – Achieve steady state maintenance;
- Priority 2 – Address urban congestion; and
- Priority 3 – Maximise the value of the road network.

## 2.1.7 Road Safety Authority Road Safety Strategy 2013 – 2020

The Road Safety Authority (RSA) Road Safety Strategy 2013 – 2020 sets out targets to be achieved in terms of road safety in Ireland as well as policy to achieve these targets. The primary target of this strategy is:

*“A reduction of road collision fatalities on Irish roads to 25 per million population or less by 2020 is required to close the gap between Ireland and the safest countries. This means reducing deaths from 162 in 2012 to 124 or fewer by 2020.*

*A provisional target for the reduction of serious injuries by 30% from 472 (2011) to 330 or fewer by 2020 or 61 per million population has also been set.”*

The plan sets out strategies for engineering and infrastructure in terms of the benefits that they can have in terms of reducing collisions.

## 2.2 National Guidance

### 2.2.1 Design Manual for Urban Roads and Streets 2013

The Design Manual for Urban Roads and Streets (DMURS) provides guidance relating to the design of urban roads and streets, placing a strong emphasis on designs that prioritise the needs of pedestrians, cyclists and public transport users and reduce the dominance of the private car in our urban landscapes. The Manual presents an integrated design approach, which means the design must be:

- a. Influenced by the type of place in which the street is located, and
- b. Balance the needs of all users.

The Manual is applicable in the design of urban roads and streets with a speed limit of 60 km/h or less.

### 2.2.2 Traffic Management Guidelines

The Traffic Management Guidelines (TMG) provide guidance on traffic planning, traffic calming and management, incorporation of speed restraint measures in new residential designs and the provision of suitably designed facilities for public transport users and for vulnerable road users. The TMG's also focus on how these issues must be examined and implemented in the context of overall transportation and land use policies. The function of the TMG's is to provide guidance on the appropriateness and scale of interventions in the public realm on a mode specific basis, helping to coordinate the design approach of these interventions.

## 2.3 Regional Policy

### 2.3.1 Regional Spatial and Economic Strategy for the Eastern and Midland Region 2019-2031

The Regional Spatial and Economic Strategy (RSES) for the Eastern and Midland Region 2019-2031 sets out a framework to direct future growth of the Region over the medium to long term. The RSES will help implement the strategic planning framework set out in the NPF.

The RSES Settlement Strategy identifies Kildare Town as being within the Core Region of the Eastern and Midland Region. The RSES also acknowledges the important value of developing and improving the Strategic Greenway network; which includes reference to the Grand Canal Greenway, from Docklands through the southern inner suburbs, to Naas, Newbridge and Kildare and connecting to the Barrow Way:

*“Grand Canal Greenway from Docklands through the southern inner suburbs to Naas, Newbridge and Kildare joining the Barrow Way at Athy with potential to link to Cork”*

In terms of retail function, the RSES designates Kildare Town as a Level 3 town, which is a town and/or District Centre & Sub-County Town Centre (Key Service Centre). Kildare Town is also noted within the Strategic Natural, Cultural and Green Infrastructure Assets in the Region as being one of the Medieval, historic and walled towns. Kildare Town is specifically noted as being one of the designated Irish Heritage Towns. The RSES outlines that:

*“These built heritage assets are a non-renewable resource that contribute to our understanding of our past, and the well-being and quality of life of our current citizens and also represent an opportunity for sustainable economic development.”*

### 2.3.2 Transport Strategy for Greater Dublin Area 2016-2035

The Transport Strategy for the Greater Dublin Area (GDA) 2016-2035 aims to contribute to the economic, social and cultural progress of the GDA by providing for the efficient, effective and sustainable movement of people and goods.

The strategy outlines a suite of transportation objectives for the GDA including the provision of additional public transport facilities (heavy rail, light rail, bus and bus rapid transit facilities), cycling and walking infrastructure and road network measures up to 2035.

The priorities of the strategy which are relevant to Kildare Town include the following:

- To address urban congestion
- To protect the capacity of the strategic road network
- To reduce the share of trips undertaken by car and increase walking, cycling and public transport mode share
- To provide a safe cycling network
- To enhance the pedestrian environment, in particular to overcome severance and increase permeability
- To consider all-day travel demand from all societal groups

Kildare is designated by the NTA as being on radial corridor D: Newbridge – Naas – Clondalkin – North Tallaght – to Dublin City Centre, only stated as extending as far west as Newbridge. Kildare is referenced as being outside the metropolitan area and referred to as a large urban settlement. Noted as being served by rail services, on both the Kildare and Waterford lines, and by longer distance commuter bus services. The strategy states that much of the growth in these large urban settlements has largely been outside of the catchment of rail stations with bus often serving a more extensive catchment. The strategy intends to deliver further improvement to both bus and rail services from these towns into Dublin City Centre, as further population growth occurs. It is noted that this corridor will benefit from improvement to the Kildare rail line such as the reopening of the Phoenix Park Tunnel Link for passenger services linking the Kildare Line to the City Centre.

The strategy also identifies six regional bus corridors which form part of the Core Bus Network, one of which the ‘M7/ N7, via Long Mile Road’ will serve regional buses from Kildare.

### 2.3.3 Greater Dublin Area Cycle Network Plan 2013

The Greater Dublin Area Cycle Network Plan sets out the National Transport Authority’s plan for a cycle network throughout the Greater Dublin Area, comprising of an Urban Network, Inter-Urban Network and Green Route Network for the seven Local Authority areas in the GDA. The Cycle Network Plan aims to ensure that cycling as a transport mode is supported and enhanced in order to achieve strategic objectives and reach national goals for cycle usage.

The Kildare Town cycling routes identified within the Plan are:

- KT1 Melitta Road - R415 Station Road - The Square.
- KT2 R445 Dublin Road / Monasterevin Road, Kildare.
- KT3 Grey Abbey Road.

Figure 2.1 illustrates the proposed cycle network plan for Kildare Town, showing where investment in cycling infrastructure is expected over the forthcoming years.



**Legend:**

- Primary/Secondary
- Inter-Urban
- Greenway
- Dublin - Primary
- Dublin - Secondary
- Feeder
- Minor Greenway
- P Permeability Link
- County Council Boundaries
- E Employment Zones
- H Hospitals
- I Institute of Technology
- Sc Shopping Centre
- To Town Centre
- U University
- V Village Centre
- St Stations

Figure 2.1: Greater Dublin Area Cycle Network Plan - Sheet N19: Proposed Cycle Network Newbridge & Kildare

## 2.4 Local Policy

### 2.4.1 Kildare County Development Plan 2017 – 2023

The Variation (No. 1) of the Kildare County Development Plan (CDP) 2017-2023 established a Municipal District system for local administration and Kildare Town is designated within the Kildare / Newbridge Municipal District area. Within the Settlement Hierarchy of the Development Plan, Kildare town is designated as one of the Self-Sustaining Growth Towns as shown in Figure 2.2, the RSES defines these towns as follows:

*“those with a moderate level of jobs and services, which adequately cater for the people of its service catchment with good transport links and capacity for continued commensurate growth.”*

The development strategy for Kildare *‘is based on building strong urban centres while protecting the rural hinterlands’* this strategy is informed by the RSES. The strategy will see the critical mass of population growth directed towards the areas of Kildare covered by the RSES Metropolitan Area Strategic Plan (MASP) this covers the towns of Maynooth, Leixlip, Celbridge, Kilcock and also the key town of Naas. While the Self-Sustaining Growth Towns will see *‘measured growth with emphasis on economic growth’*.

Economic development policy CS 5 of the KCC core strategy seeks to support the development of Self-Sustaining Growth Towns by:

*“Support the development of the identified Key Towns of Naas and Maynooth and the Self-sustaining Growth Towns of Leixlip and Newbridge as focal points for regional critical massing and employment growth”*

The following towns in addition to Kildare Town have been defined as Self-Sustaining Growth Towns

- Newbridge
- Leixlip
- Kildare
- Athy

Kildare town is expected to accommodate 4.7% of growth under the National Planning Framework 2026 projections for Kildare which equates to an increase of 1,850 in population and a 661 increase in housing units.

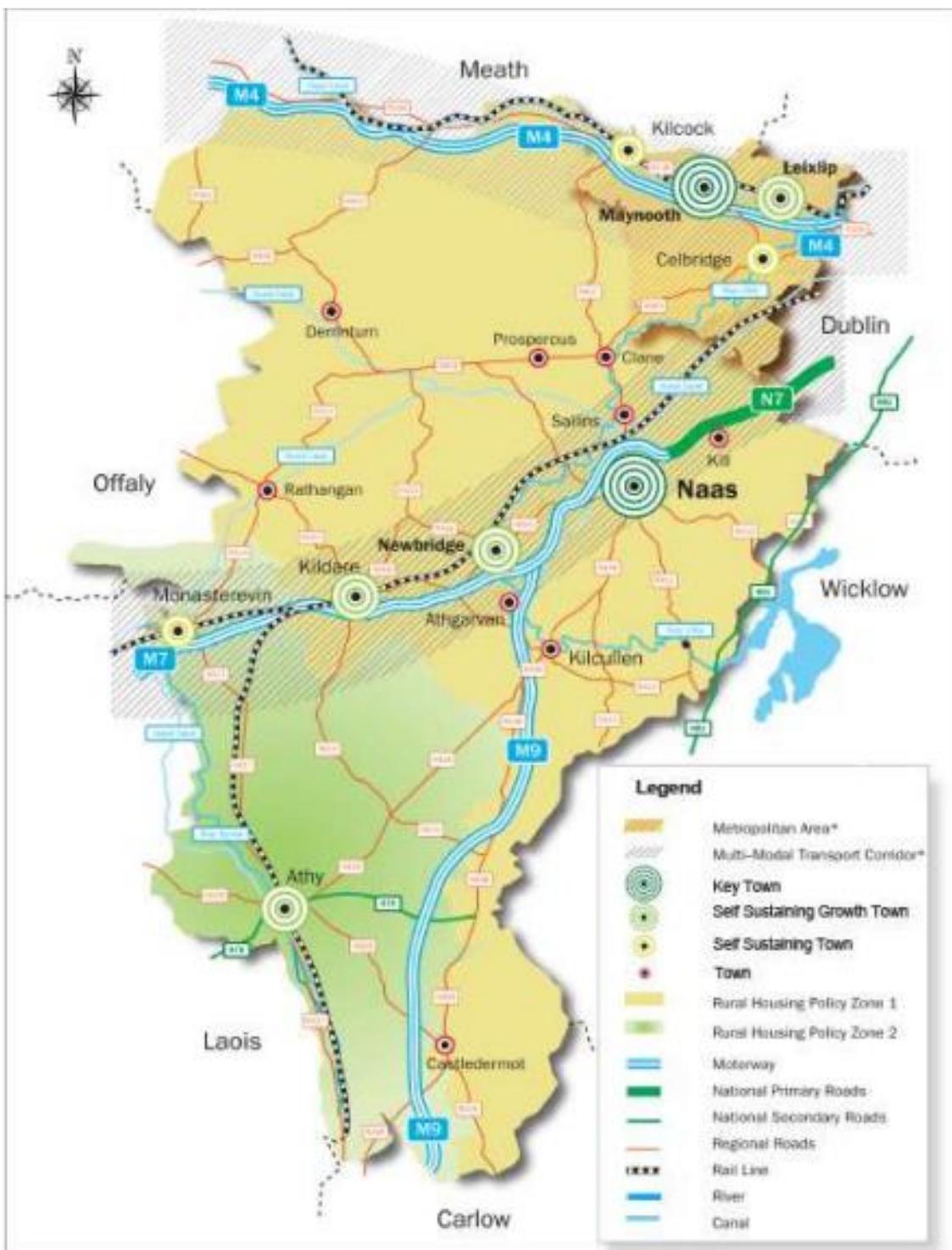


Figure 2.2: Core Strategy Map of the Kildare County Development Plan 2017 - 2023

In economic terms, Kildare has been designated as one of the Secondary Economic Growth Towns, which are expected to provide a complementary role in developing economic growth and sectoral interests in tandem with primary economic growth towns. In the case of Kildare Town, this means playing a complimentary role to the nearby Economic Clusters of Newbridge and Naas. The Development Plan highlights the sectoral strength of Kildare as being *‘the development of high value-added manufacturing sectors and internationally traded sectors, in tandem with IDA support around transport corridors and routes, are also supported, in tandem with continued investment in education and skills development’*. Also noting that Kildare has the opportunity to develop and promote itself as being an important tourism destination.

The Development Plan contains a number of transport policies that are relevant to the development of the Kildare Town Transport Strategy. Some of the most relevant include the following:

- MT1: Promote the sustainable development of the county through the creation of an appropriately phased integrated transport network that services the needs of communities and businesses;
- MT2: Support sustainable modes of transport by spatially arranging activities around existing and planned high quality public transport systems;
- MT3: Influence people's travel behaviour and choices towards more sustainable options by working closely with relevant organisations in improving and accessing public transport facilities;
- MT4: Develop sustainable transport solutions within and around the major towns in the county that encourage a transition towards more sustainable modes of transport, whilst also ensuring sufficient road capacity for trips which continue to be taken by private vehicles;
- MT7: Focus on improvements to the national, regional and local network that provide additional capacity in order to reduce congestion and provide for current and future demand; and
- MT8: Seek to address urban congestion with particular emphasis on facilitating improved bus transport movement and reliability and improved links to bus and railway stations.

The following Development Plan Movement and Transportation Objectives are also material to the development of Kildare Town Transport Strategy:

- MTO3: Review and implement Integrated Transport Studies for Maynooth, Leixlip, Celbridge, Naas, Newbridge, Kildare and Athy in conjunction with the DTTAS, TII and the NTA and to prepare new Integrated Transport Studies for other towns, villages and settlements as required, to provide a framework to cater for the movement of pedestrians, cyclists, public transport and private vehicles;

There is also a Traffic and Transportation Management objective in the Development Plan to:

- TMO 2: Carry out a review of Traffic Management Plans including the following towns in conjunction with the NTA: Maynooth, Naas, Newbridge, Kildare, Celbridge, Athy.

## 2.4.2 Kildare Town Local Area Plan 2012-2018

The aim of the Kildare Local Area Plan (LAP) is to:

*"To build on Kildare Town's strengths and to provide a focused approach to planning for future growth in a coherent sustainable, spatial fashion. The Plan aims to achieve a more consolidated urban form that facilitates a sustainable economic base and creates sustainable and integrated communities while balancing future development with the conservation and enhancement of the town's natural and built environment."*

The LAP notes that Kildare Town is well serviced by both public and private transport networks with the Train Station being less than 800m from the Market Square. Highlighting that Kildare Train station is connected to Dublin's Heuston Station via twin tracking with mainline rail services between Cork, Limerick, Dublin, Galway and Waterford and dedicated suburban rail services all operating via Kildare Train Station. The Plan outlines that the main bus stops in the town are located at Market Square, with some buses also stopping at the Kildare Retail Outlet. The LAP also outlines that the opening of the M7 motorway bypass in 2004 has resulted in a lot of unwanted through traffic being removed from Kildare Town Centre onto the Motorway. The former N7 still provides the main route through the town offering connection to Monasterevin.

The LAP also contains the long-term development strategy for Kildare Town for a 15-20-year horizon. Figure 2.3 outlines this development strategy which the Kildare Town Transport Strategy will have to take cognisance of. Figure 2.4 shows the transportation and infrastructure objectives which are summarised below and Figure 2.5 shows the walking routes.

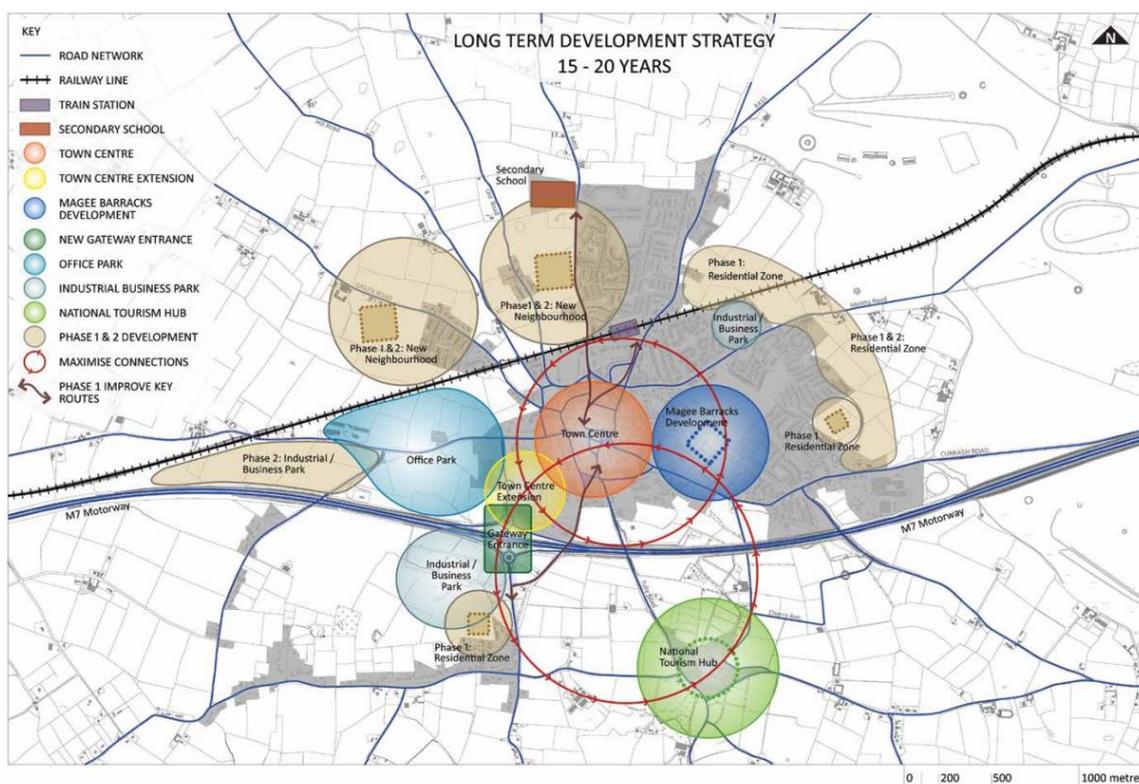


Figure 2.3: Long term indicative Development Strategy

The LAP contains 8 key strategic objectives, these are summarised as follows:

1. The Regeneration of Magee Barracks
2. Enhancing the Historic Town Centre by building on and promoting the town's unique heritage
3. Planning for Town Centre Expansion to create a new and vibrant urban expansion area that connects Kildare Retail Outlet and Tesco supermarket back to the historic core.
4. Enhanced Linkages to Kildare's National Tourism Hub
5. Development of high-density employment areas
6. The phasing of development lands to provide for an adequate amount of land for development with a focus on sequential development.
7. To provide additional transportation infrastructure and development of linkages which includes the following:
  - i. Maintain the principal spine routes serving the town.
  - ii. Provide for an outer relief road connecting the Rathbride Road (R415) and the Rathangan Road (R401) to the Monasterevin Road.
  - iii. Develop the Green Road, Dunmurry Road, Rathbride Road and Melitta Road as radial routes connecting residential neighbourhoods to the town centre.
  - iv. Develop distributor roads (including cycle routes and continuous footpaths) connecting proposed neighbourhoods to primary radial routes, proposed primary and post primary school sites and ultimately forming an orbital route connecting the Dublin Road and the Monasterevin Road in the longer term.
  - v. Develop a new street connection between the Dublin Road, the Tully Road and Grey Abbey Road.
  - vi. Establish new streets connecting the Kildare Retail Outlet to the Monasterevin Road and St. Brigid's Square.
  - vii. Develop an avenue at Magee Barracks connecting the Dublin Road and Mellita Road.
  - viii. Provide for connections between Magee Barracks and Melitta Road, Ruanbeg and Coolaghknock.
  - ix. Restrict the number of access points from proposed office and industrial parks onto the local road network.

- x. Investigate the potential of re-establishing the connection between the National Stud and the Dublin Road in consultation with the Irish National Stud and the National Roads Authority.
  - xi. Investigate the feasibility of identifying a route corridor to link the Melitta Road to the Rathbride Road.
  - xii. Investigate the possibility of re-locating the train station to a more appropriate site for modern commuter town (possibly Enterprise Centre on Melitta Rd.) in accordance with Objective LT 4 Section 6.5.3 of the CDP 2011–2017.
8. Creating a new gateway entrance into the town that reflects the new importance of the area and the character of the town

The LAP contains the following public transport policies:

PT 1: To ensure where possible, that all public transport is accessible to the disabled.

PT 2: To support the extension of the Kildare Route Project to Kildare Town subject to planning and environmental considerations.

PT 3: To support the enhancement of facilities at Kildare Train Station.

PT 4: To improve public transport facilities throughout the town including bus shelters and timetable information.

PT5: To have regard to Chapter 9 of the Draft National Transport Authority Strategy' or as amended during the period of this plan regarding cycling and pedestrian measures in Kildare Town.

For General Transport the LAP has the following objectives:

RI 1: (a) To review and update the Kildare Traffic Management Plan on an ongoing basis to ensure that the specific measures contained within it reflect the ongoing development of the town. Particular consideration is to be given to the lands in the vicinity of the M7 to ensure that these lands can be serviced without undue impact on the operational efficiency and capacity of the M7.

(b) To extend the traffic management plan to cover the extent of the LAP boundary in conjunction with RI 1(a).

RI 2: To continue to seek the implementation of the recommendations of the Kildare Traffic Management Plan, as may be amended.

RI 3: To monitor traffic movements within the town and to provide passive traffic calming measures at appropriate locations as the need arises.

RI 4: To investigate the role and use of lower speed limits within the town centre area to improve safety for pedestrians and cyclists.

RI 5: To extend/upgrade public lighting throughout the town as the need arises.

RI 6: All Local Authority development will be subject to the policies, objectives and development management requirements of this Plan and the Kildare CDP where appropriate.

In respect to sustainable transport, the LAP contains the following objectives:

RIO 1: 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 necessary and along the routes identified in Map 8.6

RIO 2: To provide appropriate public lighting and facilities for people with disabilities throughout the footpath network.

RIO 3: To provide/upgrade footpaths at the following locations along the routes identified on Map 8.6: a) Along Meadow road. b) Along Academy Street and Cleamore Road. c) Along Fair Green Cottages and Chapel Lane d) Along Melitta Road

RIO 4: To provide public lighting at the following locations on the routes identified on Map 8.6: a) Between Newtown Cross roads and Tully road. b) Along Firecastle lane

RIO 5: To provide a pedestrian/vehicular link from Grey Abbey to the Tully road to complete the Historic route as identified on Map 8.6.

RIO 6: To seek the provision of appropriate cycle facilities in accordance with the NTA National Cycle Manual, having regard to the routes identified in Map 8.6

RIO 7: To co-operate with public transport service providers to ensure that adequate public transport services are provided for the town.

RIO 8: To promote and secure the provision of bus stops and shelters at appropriate locations in the town.

RIO 9: To seek to ensure that all public transport services are accessible to people with disabilities.

RIO 10: To investigate the feasibility and promote the provision of a recreational pedestrian/cycle route through the National Stud including a new pedestrian/cycle bridge over the M7.

RIO 11: To rationalise signage within the town to promote a clearly defined signage network and avoid visual clutter.

RIO 12: To provide a permeable pedestrian network and to require the inclusion of measures to achieve same within the town centre. Development proposals shall be submitted at planning stage.

The town centre transport objectives are as follows:

RIO 13: To develop the North Link Street (Pigeon Lane, Bóthairín na gCorp, Shraud), identified on Map 8.2, to provide access to the motorway and railway station without the need to travel through the town centre.

RIO 14: To develop the South Link Street (Meadow Road and Grey Abbey Road), identified on Map 8.2, to provide access from the motorway and Hospital Street without the need to travel through the town centre.

RIO 15: To develop the following as Town Centre Streets by implementing appropriate physical measures to moderate vehicular movement function and achieve a high pedestrian movement function:

- Market Square
- Cork Road (east of Pigeon Lane)
- Claregate Street
- Dublin Street
- Station Road (south of Melitta Road)
- Nugent Street
- Bride Street
- Bangup Lane
- Cleamore Road/Academy Street

RIO 16: To develop an 'Environmental Traffic Cell' within the area surrounding the Cathedral and Round Tower, as identified on Map 8.2 (Figure 2.4), in order to improve this historic network of lanes and protect it from the future growth in traffic in the surrounding areas. To ensure this area develops high quality pedestrian and cyclist linkages from South Green to the town centre.

The roads and street objectives are as follows:

RIO 17: To preserve all indicative routes, listed below and identified on Map 8.2, free from development and to seek the construction of identified indicative routes, subject to environmental and conservation considerations as follows:

(i) To preserve the indicative route identified for the Outer Relief Road, from the Kildare Retail outlet roundabout (a) to the R415 Rathbride Road (i), free from development. To seek to construct a section of this road from the Kildare Retail Outlet roundabout (a) to the R445 Monasterevin Road (b), including the provision of new junctions/crossings at the following locations:

- The Kildare Retail Outlet roundabout (a)
- R445 Monasterevin Road (b)
- To preserve the remaining section of this indicative route free from development, including the provision of new junctions/ crossings at the following locations:
- A new crossing over the rail line (c)
- L7014 Green Road (d)
- The proposed Inner Relief Road (e)
- L7015 South Green Road (f )
- L7016 Old Road (g)
- R401 Dunmurray Road (h)
- R415 Rathbride Road (i)

(ii) To preserve the indicative route identified for the Inner Relief Road, from the Outer Relief Road (e) to the R401 Dunmurray Road (l), free from development, including the provision of new junctions/crossings at the following locations:

- The proposed Outer Relief Road (e)
- L7015 South Green Road (j) L7016 Old Road (k)
- R401 Dunmurray Road (l).

(iii) To preserve the indicative route identified for the partially developed School Link Road between the L7016 Old Road (m) and the partly constructed school link road off the R401 Dunmurray Road (n).

(iv) To complete the construction of the partially developed link road between the R401 Dunmurray Road (o) and the R415 Rathbride Road (p).

(v) To seek the construction of the North Internal East West Link (NIEWL), from the L7014 Green Road (q) to the R401 Dunmurray Road (t), including the provision of new junctions/ crossings at the following locations:

- L7014 Green Road (q)
- L7015 South Green Road (r)
- L7016 Old Road (s)
- R401 Dunmurray Road (t)

(vi) To seek the construction of the South Internal East West Link (SIEWL) from the L7015 South Green Road (u) to the R401 Dunmurray Road (w) including the provision of new junctions/crossings at the following locations:

- L7015 South Green Road (u)
- L7016 Old Road (v)
- R401 Dunmurray Road (w)

(vii) To seek the construction of the following new streets within the Magee Barracks Regeneration Site (refer to Section 7.6 – Magee Barracks Design Brief):

- From a new junction at R413 Melitta Road (x) to connect to the already constructed section of distributor road through the Ruanbeg residential development (z).

- From R445 Hospital Street (aa) to the junction with the proposed new street connecting Ruanbeg and Melitta Road (y)

(viii) To seek the construction a new street from Hospital Street to Tully Road, including the provision of new junctions/crossings at the following locations: • Hospital Street (bb) • Tully Road (cc)

(ix) To seek the construction of the following new streets within the Expansion Area (SWEA) (refer to Section 7.6 –SWEA Design Brief):

- From a new junction at Academy Street (dd) indicative location to the Tesco access road off Claregate Street (ee).
- From the Kildare Retail Outlet access road (ff ) to the Tesco access road off Claregate Street (ee).

The design of these streets shall ensure that vehicular movement function is moderated and that a high quality pedestrian movement function is achieved, in the context of the type of development that is proposed within the SWEA.

The configuration and interconnectivity of the internal street layout, within the SWEA shall be designed in accordance with the following principles:

- Pedestrian movement shall be prioritised
- Ease of movement within the area shall be facilitated by way of permeable and interconnected networks

The design parameters for individual links shall have regard to function and context.

(x) To preserve the route identified for a new connecting road from the R445 Monasterevin Road (b) to the L7014 Green Road (gg), including the provision of new junctions/ crossings.

RIO 18: To realign, widen and/or improve the following routes subject to environmental and conservation considerations, as identified on Map 8.2:

- (i) The L7014 Green Road from the Outer Relief Road to the junction with Bothairin na gCorp, including improvements to the crossing of the rail line.
- (ii) The L7015 South Green Road from the Inner Relief Road to the junction with Bothairin na gCorp, including improvements to this junction and the crossing of the rail line.
- (iii) The L7016 Old Road from the Inner Relief Road to the junction with Bothairin na gCorp, including improvements to this junction and the crossing of the rail line.
- (iv) The R401 Dunmurray Road from the Outer Relief Road to the junction with Bothairin na gCorp, including improvements to this junction and the crossing of the rail line.
- (v) The Northern Link Street as recommended in the Traffic Management Plan along Shraud, Bothairin na gCorp and Pigeon Lane.
- (vi) The Southern Link Street as recommended in the Traffic Management Plan along Meadow Road to Grey Abbey Road.

RIO 19: To seek to examine the likely future need for an Outer Orbital Road to the north of Kildare Town and to investigate the feasibility of providing same.

The following junction objectives are outline in the LAP:

RIO 20: To implement safety and/or capacity improvements as necessary at the following junctions, as shown on Map 8.2:

- (i) The junction of the R445 regional road and Pigeon Lane.
- (ii) The Pigeon Lane/Green Road/Bothairin na gCorp junction.
- (iii) The Bothairin na gCorp/South Green Road junction.
- (iv) The Bothairin na gCorp/Shraud junction.

(v) Market Square and associated junctions.

(vi) St. Brigid's Square and associated junctions.

The following parking objectives are outline within the LAP:

RIO 21: To examine the feasibility of providing additional off street public car parking within close proximity to the town centre and to seek the provision of same following the identification of suitable sites.

RIO 22: To provide accessible car parking spaces at appropriate locations throughout the town.

RIO 23: To ensure that all new development contains an adequate level of parking provision with regard to the policies outlined in the County Development Plan, and to the standards set out in Chapter 19 of the CDP, as may be amended.

RIO 24: To ensure that all public and private car parking facilities are constructed with a permanent durable surface.

RIO 25: To promote and facilitate the provision of secure cycle parking facilities within the town at all public facilities.

RIO 26: To implement a requirement for the provision of adequate cycle parking provision at all new developments in accordance with the standards set out in Chapter 19 of the County Development Plan.

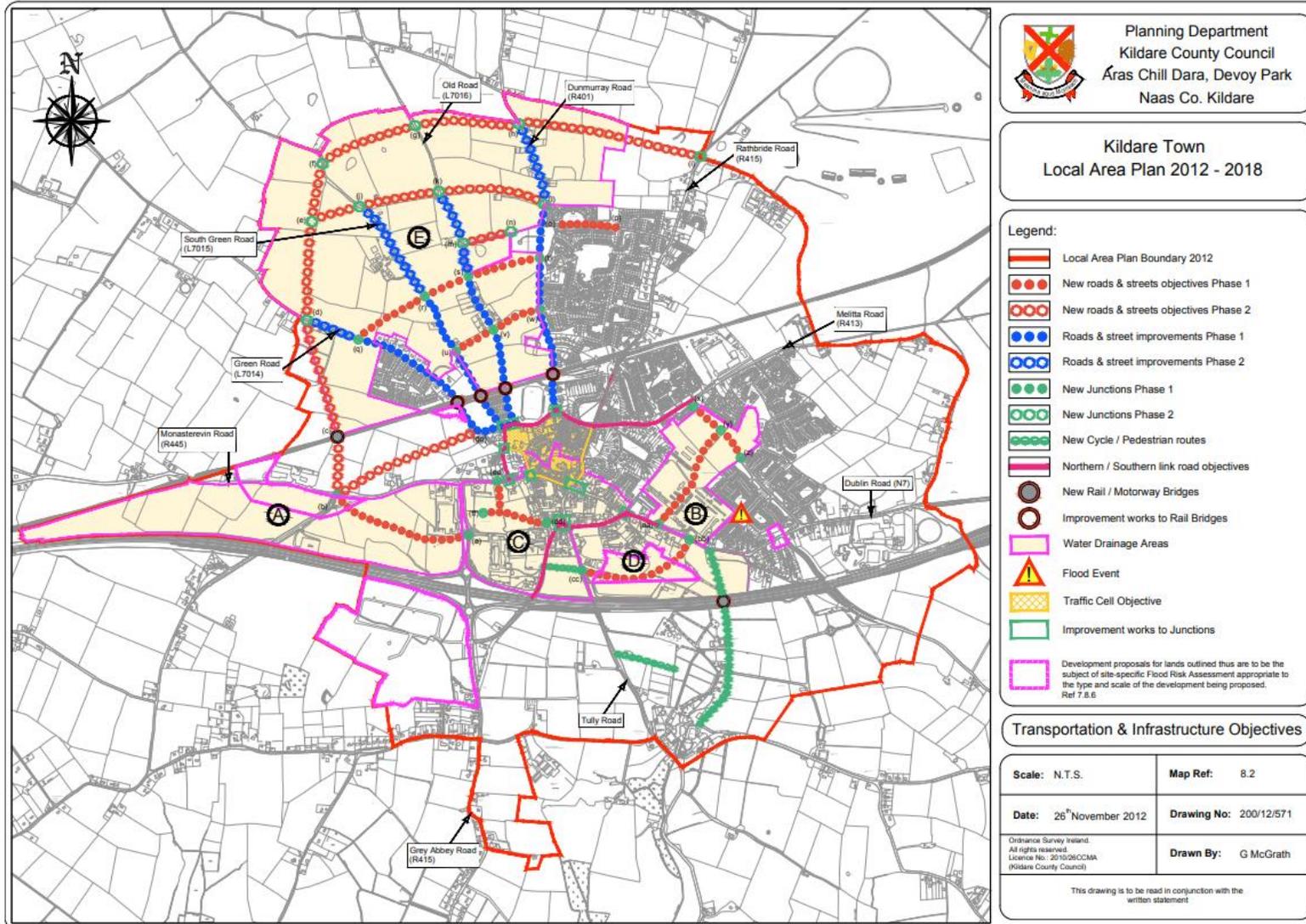


Figure 2.4: Local Area Plan Transportation & Infrastructure Objectives

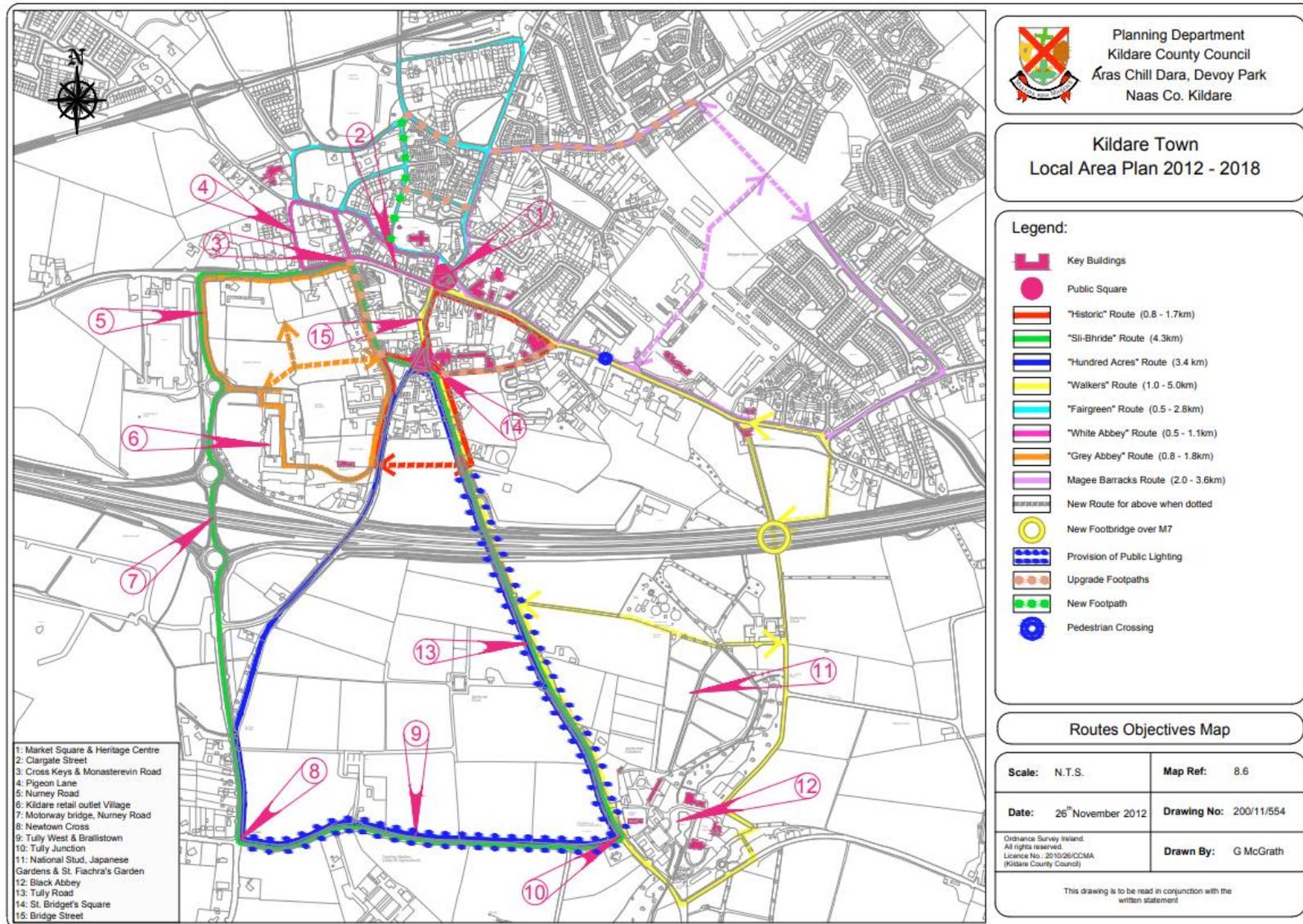


Figure 2.5; Local Area Plan walking routes map

### 2.4.3 Kildare 2016 Census Profiles (AIRO)

The All Island Research Observatory (AIRO) prepared a census profile for Kildare County Council (KCC) and Kildare Local Community Development Committee, the findings were presented under six key headings which are summarised below:

#### Demographics

- County Kildare contains a significant population base within the State. Census 2016 outlines that the total population within Kildare was 222,504. This represents 4.7% of the State total.
- Kildare has a rapidly growing population over a 20 year period (1996 to 2016), Kildare experienced a 64.8% (+87,512) increase in its population base. This is explained by high levels of natural increase (birth rate) and a strong performance in estimated net migration.
- Kildare has the highest rate of young people aged 0 to 24 years in the State
- Kildare has high levels of child and youth dependency over 28% of Kildare's population is aged '0-18' years
- Demand for child and youth services is building and set to grow, the county's population has not yet peaked, and that there is likely to be an increased demand for children's and young people's services over the next decade
- Kildare has a geographically varied population density approximately 72% of the county's population live on 5% of the county's total land area, with the northeast of the county having by far the highest population densities
- The '65 and over' age cohort has rapidly increased in Kildare representing 9.9% of the total population living in the county - the 2nd lowest rate in the State. Since 2011 this cohort has increased by 32%.
- Polish nationals are by far the largest non-Irish community living in Kildare 10.6% or 23,279 of the population residing in county Kildare are non-Irish nationals. Polish nationals make up the largest proportion of non-nationals in Kildare, representing 30% of all non-nationals or 3.3% of the total population
- Kildare has lower than national and regional rates of Travellers. There are 739 Travellers living in Kildare, with an observable spatial pattern. Most Travellers live in urban areas, with the highest rates in the towns of Newbridge and Athy
- Kildare has the 5th highest number of Lone Parent families (with children under 15) in the State. There are 4,795 lone parent families residing in Kildare.
- Deprivation levels have remained stable in Kildare between 2011-2016. The county experienced the third highest rate of increases in affluence levels nationally (+2.74) between 2011-2016. Most deprivation is clustered in the east and south of the county with the most disadvantaged areas within Athy.

#### Education

- Kildare has a very well educated population. 36.3% of the population have a third level degree or higher - the 5th highest rate in the country
- There are clear spatial variations in education attainment across Kildare. High levels of educational attainment (third level plus) mirror the main urban centres of Naas, Newbridge and in particular the north of the county in Celbridge and Maynooth (Maynooth University employment catchment)
- Most Kildare students study in Dublin. According to Department of Education and Skills data, a total of 7,279 Kildare resident students were attending third level education institutions in 2017. The majority of these students were attending third level institutes in Dublin (52.5%), followed by Kildare/Maynooth (23%) and Carlow (10%).
- In 2017, Kildare (7,879) had the 7th lowest number of childcare spaces available (vacant and filled). This figure equates to a rate of 455.1 spaces available per 1,000 population aged 0 to 4, the 7th lowest in the State.

- Kildare has a low rate of schools per student population. In 2017/18 there were 100 mainstream primary schools in Kildare. This figure equates to a rate of 3.4 schools per 1,000 population aged 5 to 12 years, the 4th lowest of all local authorities and considerably lower than the State (5.73) average.

## Housing

- Kildare is a significant residential base within the State with the eighth largest housing stock nationally
- Home ownership rates in Kildare remain high with the county having the 3rd highest rate of households with a mortgage in the State. According to the 2016 Census, 72% of households in Kildare are Owner Occupied, considerably higher than the State average (67.6%).
- The rate of private rented properties in Kildare (17.2%) is marginally lower than the State (18.2%) average. However, the rate of growth in Kildare (3.7%) is more than twice the State (1.4%) average.
- The private rental housing market is heavily subsidised by state funding in the form of Housing Assistance Payments (HAP), the Rental Accommodation Scheme (RAS) and Rent Supplement. In total, there are now 1,193 HAP tenancies in Kildare, 717 households linked to RAS (approximately €6.4m in Kildare in 2016) and 2,308 recipients of Rent Supplement (15.7% short term and 84.3% long-term).
- Rental accommodation in Kildare is relatively high in comparison to other eastern counties in Ireland. The average monthly rental in the county is now €1,023 (approx. 25% higher than 2014) with higher rates in the north-east of the county (Leixlip = €1,235, 23.5% higher than 2014).
- According to Census 2016 there were 4,650 vacant properties (excluding holiday homes) recorded in Kildare. This figure marks a reduction of 25.5% since Census 2011.
- In the period since the 2011 Census, 1,739 or 2.4% of all housing in Kildare was constructed. This was marginally higher than the State (2%) average and represents the 7th highest rate of all local authorities. Of all new housing constructed between 2011 and 2016, 36.5% was built in the Maynooth MD, 22.8% in the Naas MD, 18.2% in the Kildare/Newbridge MD, 11.4% in the Celbridge/Leixlip MD and 11.4% in the Athy MD.

## Health

- Census 2016 outlines that 63.1% of Kildare's population report their health status as 'Very Good'. This is higher than both the State and regional figures and is the third highest rate in the State.
- There are 27,768 people in Kildare with a disability, being the sixth highest number in the State and the fourth lowest relative to population size.
- There are low levels of GP practices in Kildare. In total, there are 81 GP practices in Kildare, this number equates to a rate of 0.36 practices per 1,000 population, considerably lower than the State (0.41) and EMRA (0.42) averages and higher than the Eastern Strategic Planning Area (SPA) (0.32) average.
- There are low levels of HSE listed Health Centres in Kildare. In total, there are 17 HSE listed Health Centres in Kildare, this number equates to a rate of 0.08 centres per 1,000 population, lower than the State (0.16) and Eastern SPA (0.09) averages and in line with the EMRA (0.08) average.

## Employment, Industry and Occupations

- The labour force participation rate in Kildare is 64.1%, the fourth highest rate in the country. However, there is significant spread around this figure throughout the county – the highest labour force participation rate in the county is Sallins (74.5%) and the lowest is Suncroft (52.3%).
- 88.6% of the labour force are 'At Work' in Kildare. This is the fifth highest rate in the country and is mirrored by low unemployment rates (see below). There is, however, an uneven distribution of the labour force 'At Work' throughout Kildare with a significant variance between the highest and lowest rates in the county. The highest rate recorded is found in Straffan (95.8%) and the lowest in Athy (73.4%).

- In 2015 there were 10,314 active enterprises in Kildare. Of these, only 15 enterprises (0.1%) employed more than 250 persons. A total of 9,598 (93.1%) enterprises employed less than 10 people. This figure is marginally higher than the State average of 92.2%.
- Kildare recorded the highest rate of employment supported by foreign owned (FDI) companies. In 2016, 18.6% or 10,377 of total employment in the Kildare enterprise sector was in foreign owned companies. This is the highest rate in the country followed by Cork (18%) and Galway (17.6%).
- Kildare has the 2nd highest rate of Managers, directors and senior officials (9%) and the 3rd highest rate of Associate professional and technical occupations (13.1%). Both rates exceed the national average for each occupational group by a considerable margin and are reflective of a well-educated and highly skilled workforce.

## Commuting

- Kildare has the 6th highest rate of outbound commuters in the State. Of the 95,345 workers residing in Kildare, 39.1% or 37,340 commute to local authorities outside the county. The top employment destinations for Kildare workers are; Dublin City (15,481), South Dublin (10,593), Fingal (3,324), Dún Laoghaire Rathdown (2,810) and Meath (969).
- 33% of Kildare's resident workers are employed in the Dublin Metropolitan Area. In total, 31,710 workers commute from Kildare into the Dublin Metropolitan Area. Highest rates are primarily located in the north-east of the county proximate to settlements; Naas, Celbridge, Leixlip and Maynooth, where many parts have in excess of 50% of workers commuting into the Dublin Metropolitan Area.
- In excess of 33% of all jobs in Kildare are filled by persons living outside the county. Of the 62,985 jobs located in Kildare, 21,195 are filled by persons commuting in to the county. The top worker origins are; Laois (3,189), South Dublin (3,141), Meath (2,480), Dublin City (2,462) and Offaly (1,607).
- Of the key settlements in Kildare, Naas (10,999) has the largest concentration of jobs. Naas accounts for 17.5% of all jobs in Kildare. Of this number 8,115 persons commute into Naas making it a key commuting destination in the county. Newbridge (6,526) has the second highest number of jobs followed by Leixlip (5,825).
- Commuting/Jobs Profile Kildare Town: There are 3,520 people in employment living in Kildare Town, 20% work in Kildare Town, 35% work elsewhere in Kildare and 24% commute out of Kildare - the remaining number of workers work in mobile or uncodable destinations. There are 2,166 jobs in Kildare Town, this accounts for 3.4% of all jobs in Kildare.

### 2.4.4 Kildare Traffic Management Plan 2008

The Kildare Traffic Management Plan (TMP) was formed from the recommendations of the Integrated Framework Plan for Land Use and Transportation (IFPLUTS). The requirement of the TMP was to review and refine the IFPLUTS recommendations and develop specific preliminary traffic management design recommendations for Kildare Town centre and the adjacent street network.

The TMP recommendations are set out below for the relevant squares and streets:

#### Market square:

- The existing north-south link through Market Square is to be closed to motor traffic and this space will be redistributed to the public realm.
- The existing car parking arrangement to the north-west of the square is to be reconfigured with a reduction in parking provision in this area. This is to maximise pedestrian space in the area. This loss of parking will be accommodated elsewhere in the town centre.
- The new Market Square area should be subject to a civic design scheme to enhance the quality of the public realm.
- A new staggered signalised junction arrangement is to be introduced at the junction of Claregate Street / Bride Street / Market Square / Dublin Street. These sets of signals will be linked via the MOVA system. Pedestrian crossing facilities are to be provided on all arms.

- The existing bus stops at Market Square are to be maintained and a new coach set-down bay will be provided to cater for tourist drop-offs. Kassel kerbing should be installed at all bus bays.
- The existing car parking and loading bay facilities to the east of Market Square are to be maintained.
- Cycle parking facilities are to be installed in Market Square by means of Sheffield Stands.
- Access to Fire Castle Lane (to become one-way westbound) is to be retained for cars and slow mode users.

#### **Northern Link Street:**

- The proposed northern link street has been designed with the consideration of the South Green Part 8 Road Scheme design.
- A 6.5 – 7.0m carriage will be provided to allow the passage of two articulated trucks along the entire length of the northern link street from the Cork Road / Pigeon Lane junction to the Shraud / Station Road junction. The existing horizontal alignment of the route will be maintained where possible.
- Traffic signals are to be installed at the Cork Road / Pigeon Lane junction. Dedicated left turn and straight through lanes will be provided on the Old Cork Road (west) arm of the junction. A small area of land acquisition is required to the east of Pigeon Lane on the approach to the junction to provide dedicated left and right turning lanes.
- Pedestrian crossing facilities are to be provided across the Old Cork Road (west) and Pigeon Lane arms of the junction.
- Traffic signals are to be installed at the Pigeon Lane / Green Road / Bóthairín na gCorp / Fire Castle Lane junction. This is to improve safety at the junction by overcoming the poor sightlines on approach to the junction on all arms.
- Pedestrian crossing facilities are to be provided on all arms except the Green Road arm of the junction.
- On road cycle lanes are to be introduced on Bóthairín na gCorp between the junctions of Old Road and Green Road / Fire Castle Lane.
- A 28.0m ICD roundabout is to be provided at the Bóthairín na gCorp / South Green Road junction. This roundabout will accommodate HGV turning movements on Bóthairín na gCorp by means of an overrun area around the central island.
- Bóthairín na gCorp is to be realigned at the junction with Dunmurray Road and Chapel Lane to allow two HGVs to pass around the bend. An area of land acquisition will be required to accommodate this street alignment.
- Dunmurray Road and Chapel Lane are to be locally realigned to form a new crossroads junction with priority to traffic on Bóthairín na gCorp and Shraud. This junction layout can be upgraded to a signalised junction in the future if required.
- A new pelican crossing facility will be provided across Shraud to the east of Dunmurray Road to accommodate pedestrian movements between the town centre and the proposed site for the future amalgamation of the secondary schools.
- The existing parking provision on the south of Shraud is to be formalised into a parking bay.

#### **Southern Link Street**

- The Southern Link Street on Meadow Road between the junctions with Hospital Street and Grey Abbey Road is to be upgraded to provide a 6.0m wide carriageway and minimum 2.0m wide footpaths on both sides.
- Traffic signals are to be installed at the junction of Dublin Street / Meadow Road / Hospital Street with pedestrian crossing facilities on all arms.
- The existing mature trees on the south of Meadow Road opposite the back of the hotel must be removed to accommodate the street upgrade. Access to the existing residences in this will require reconfiguration.

- Land acquisition is required to the south of Meadow Road to accommodate the new 6.0m carriageway and 2.0m footpaths.
- The existing priority junction of Meadow Road / Tully Road is to be altered with the priority given to traffic on Meadow Road.
- The junction of Meadow Road / Grey Abbey Road / Academy Street / Bride Street is to become a signalised junction with pedestrian crossing facilities on all arms.

### **Claregate Street / Dublin Street**

- The kerb lines are to be built out on the north side of Claregate Street to provide a 6.0m wide carriageway, 2.0m parking bays and minimum 2.0m footpaths on both sides.
- Street planting is to be provided to break up and soften the continuous lines of on-street parking and reduce forward visibility for vehicles on Claregate Street and Dublin Street.
- Raised pedestrian crossings with tactile paving are to be provided across the junctions of side streets at Malone's Lane, Heffernan's Lane, Bangup Lane and Beechgrove.
- Pelican crossing facilities with dropped kerbs and tactile paving are to be provided on pedestrian desire lines across Claregate Street outside the EuroSpar and on Dublin Street outside the girl's secondary school.
- The loading facility on the north of Claregate Street between Malone's Lane and Heffernan's Lane is to be retained. A new loading bay is to be provided on the south of Dublin Street outside the Post Sorting Office.
- Cycle parking facilities are to be provided on the north of Claregate Street opposite EuroSpar and on Dublin Street outside J&J Taxi's.

### **Bride Street and St. Brigid's Square**

- Bride Street is to be realigned to provide a 6.0m wide carriageway and minimum 2.0m footpaths on both sides. Horizontal curves are to be incorporated into the new street alignment to induce lower traffic speeds.
- The existing on-street parking on the east side of Bride Street, north of Bangup Lane, and on the west side, outside the medical centre, is to be reconfigured to accommodate the new street alignment.
- The existing perpendicular parking outside the primary school is to be removed and replaced with increased footpath space and parallel parking.
- The footpaths on both sides of Bride Street are to be built out to provide pedestrian congregation areas outside the boy's school. A new pelican crossing facility with dropped kerbs and tactile paving is to be provided at this location.
- A new loading bay facility is to be provided on the west of Bride Street, immediately north of the junction with Bangup Lane.
- The existing north-south link to the east of St. Brigid's Square is to be closed to through traffic and open for access to the church grounds only. Traffic will divert to the new signalised junction of Meadow Road / Grey Abbey Road / Academy Street / Bride Street.
- The existing parking layout at St. Brigid's Square is to be reconfigured to optimise the public space and accommodate the new signalised junction.
- Bollards are to be installed on the west side of the square and on the Academy Street approach to the junction to prevent unofficial parking on the footpath. This will create a large congregation area for pedestrians.
- A new dedicated school bus facility is to be provided at this congregation area to provide a large, safe landing point for school children.

### **Academy Street / Cleamore Road**

- Academy Street and Cleamore Road will be upgraded and realigned to provide a 6.0m wide carriageway with formal footpaths on both sides of minimum 2.0m width.
- A raised uncontrolled pedestrian crossing with tactile paving is to be installed across Cleamore Road at the junction with Claregate Street.
- The existing formal parking bays on the west side of Cleamore Road will be realigned as parallel parking and new bays will be provided outside residences on Cleamore Terrace.
- An area of land acquisition is required to the south of Academy Street to upgrade the street and provide a safer bend in the road with footpaths on both sides to the north-west of the CYMS Hall.

#### Station Road / Nugent Street

- Kerb build-outs and reduction in junction radii are to be provided at the junctions with Lourdesville, the public car park and Dara Park. This will shorten pedestrian crossing distances and induce slower vehicular turning speeds.
- There is the potential to make Nugent Street one-way between Dara Park and Market Square in the medium to long term when the link streets to the east through Magee Barracks are being developed.

#### Bang Up Lane

- The kerbs on both sides of Bangup Lane are to be built out to provide a 3.0m wide carriageway. This will induce lower traffic speeds on this one-way street.
- Raised uncontrolled pedestrian crossings with tactile paving are to be provided across Bangup Lane at both junctions with Claregate Street and Bride Street.
- Parking on the west side of the street is to be retained.

### 2.4.5 Kildare Town Renewal Plan

The Kildare Town Renewal Plan is an Urban Design Analysis and Town Renewal Plan funded by the Town and Village Renewal Scheme launched in 2016 by the Department of Arts, Heritage, Regional, Rural and Gaeltacht Affairs. As part of the implementation process, Kildare County Council were required to undertake the following steps:

- Step 1: Conduct a town 'Health Check' to assess the vitality and viability of the town centre.
- Step 2: Establish a Town Renewal Committee with the involvement of the Local Authority, Local Business representatives, residents and the wider community,
- Step 3: Prepare a Town Renewal Plan on the basis of the results of the Health Check, setting out in detail the measures to be taken to support the renewal and revitalization of the town;
- Step 4: Implement the Town Renewal Plan.

As part of the Renewal Plan a movement analysis of Kildare Town was undertaken the pertinent issues from this analysis are summarised as follows. The analysis was undertaken for pedestrian, cyclists, public transport and cars within Kildare Town.

Key issues for pedestrians were:

*"Widths of footpaths, quality of hard landscaping and provision for wheelchair users are all items which could be addressed in order to improve the pedestrian experience."*

*"One of the largest and most significant pedestrianised areas in the town is Kildare Village Outlet Centre which attracts approximately 4 million people every year. Pedestrian access between the Outlet Centre and Kildare Town could be strengthened if a route from recently granted phase 3 of the Kildare Village Outlet Centres development to Academy Street could be delivered."*

A number of pedestrian counts were also undertaken in the market square these counts found that most pedestrians moving through the square had a clear purpose to their journey. With most people stating their destinations as either the bus stop, the ATM at Bank of Ireland or one of the numerous

parking meters. The pedestrian analysis found that vehicular access into and through the town is prioritised over pedestrian movements. The strategy also highlights issues with accessibility in the town centre for people with mobility issues.

Figure 2.6 presents the findings of the pedestrian movement analysis through Kildare Town.

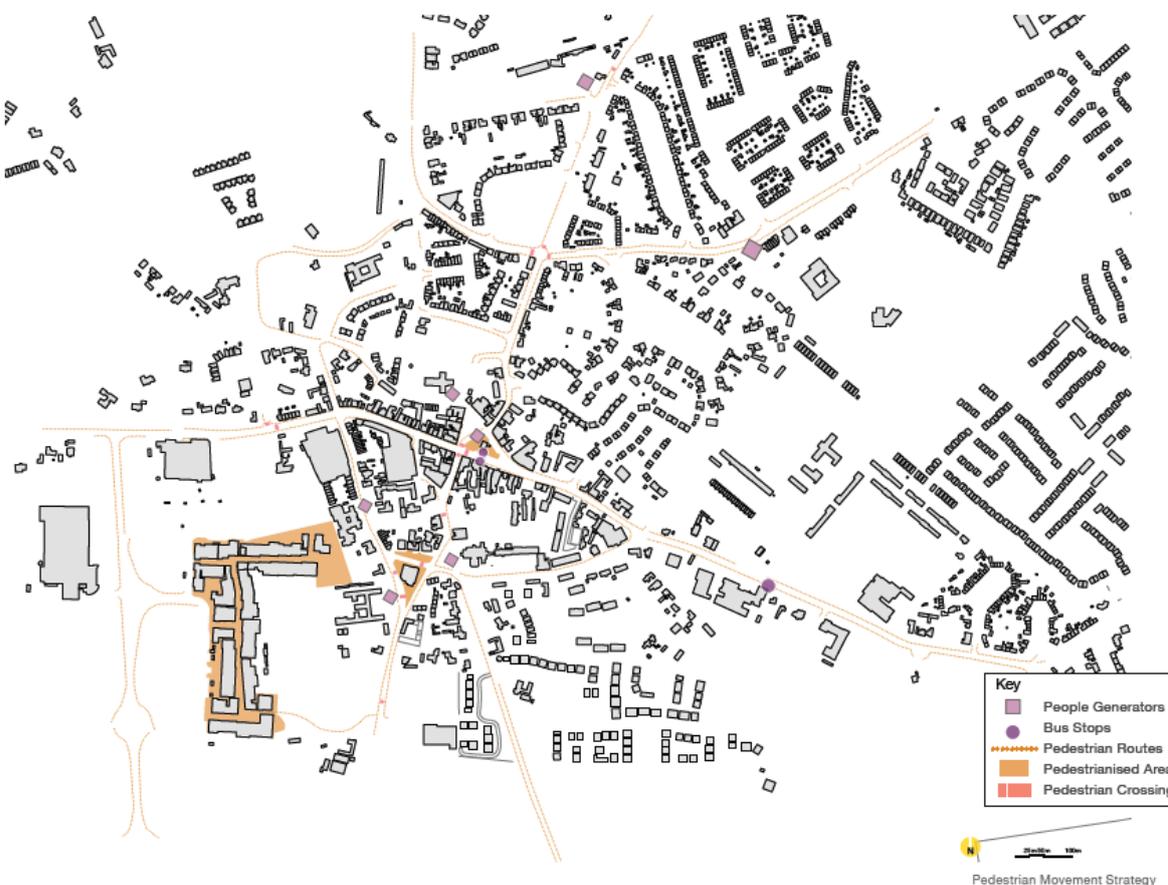


Figure 2.6: Pedestrian Movement Strategy KTRP

In relation to cycling, the Plan found that there were no cycle paths in the town with cyclist found to be using footpaths instead, however it is noted in the plan that not many cyclists were observed during surveys.

In relation to public transport, that plan notes that Kildare is well served by rail via “*slower moving suburban services and faster moving main-time services during peak periods*”. It also highlights the bus services that serve the town referencing the 126 which is now operated by Go Ahead and the service provided by South Kildare community transport, Figure 2.7 shows the public transport infrastructure in Kildare Town.

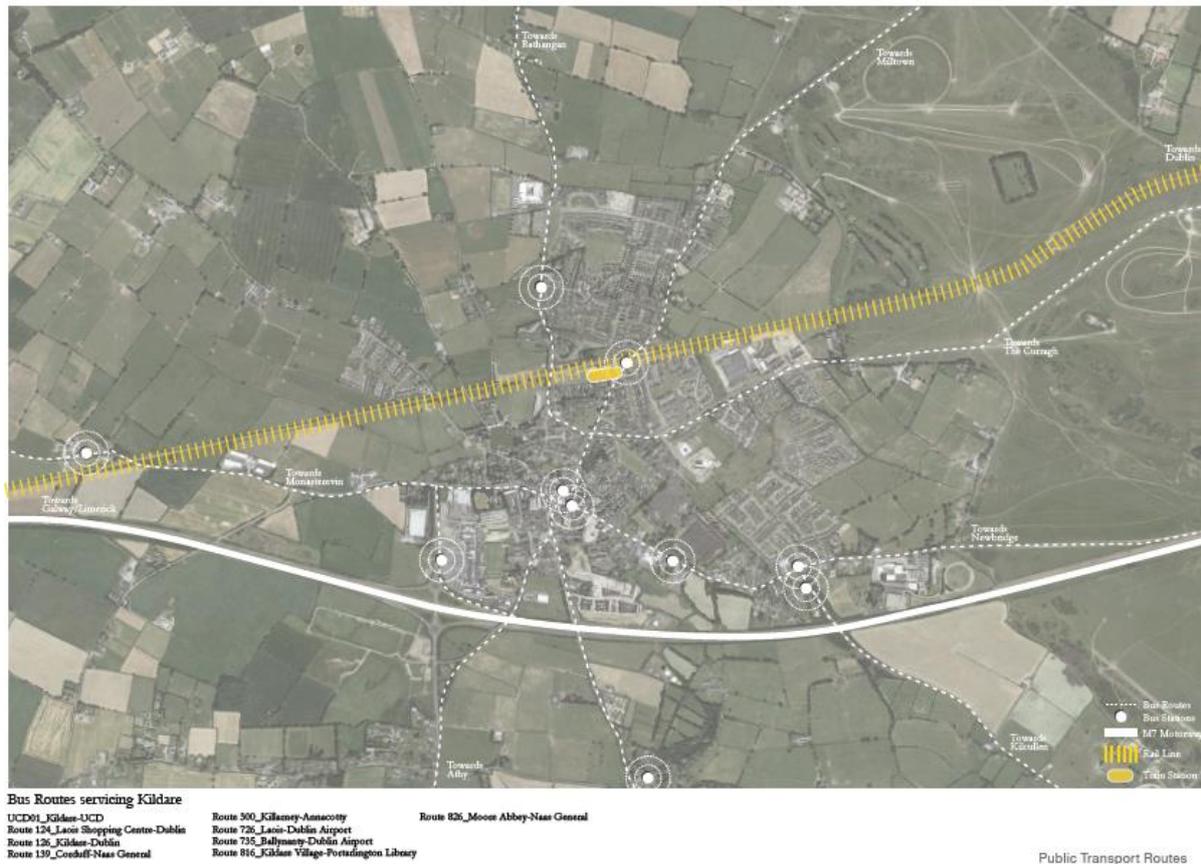


Figure 2.7: Public Transport Routes and Bus Stops Kildare Town

On vehicular movement, the renewal plan highlights the importance the N7 has played in taking unwanted through traffic out of Kildare Town which has benefited the town. However it notes the dominance of the car in Kildare Town and also notes the problem of HGV's using Kildare Town as a through route which is unsuited to the narrow streets of the town noting that:

*"consideration could be given to restricting times of access to maintain the quality of these spaces as streets rather than roads."*

The Renewal Plan also carries an analysis of parking in Kildare Town noting that car parking dominates the backlands of the town, Figure 2.8 shows the location of car parks in Kildare Town.



Figure 2.8: Kildare Town Car Parking

The Renewal plan proposes a number of measures to improve Kildare town for active modes, these include a wayfinding strategy to make the town more legible, a bike hire scheme and a lane strategy to make better use of the historic lanes to improve pedestrian and cycle permeability. The plan also includes a walking and cycling strategy which is shown in Figure 2.9 Figure 2.1. The plan also includes a proposal for a public realm strategy to investigate the potential to open up a vacant site on the northern side of the Train Station as parking and to enable an access to the Train Station from the North of the tracks from the (West Dunmurray) Road and East (Rathbride Road). Figure 2.10 shows the key development site which the town renewal plan has identified and includes details on how these sites could be developed to revitalise Kildare Town. Of particular interest to the Kildare Town Transport Strategy is the proposed link through the Magee Barracks site linking the Curragh Road to Melitta Road.



Figure 2.9: Proposed Pedestrian and Cycle Network



Figure 2.10: Development sites within Kildare Town

### 3 Settlement Context

This section provides a review of key demographic, employment, building-use and school location datasets within Kildare Town.

#### 3.1 Population Change

The Central Statistics Office (CSO) Settlement boundary for Kildare Town contained 8,634 people in the 2016 Census. Figure 3.1 shows the change in population between the period between the 2011 census and 2016 census on a square kilometre grid for the areas surrounding Kildare Town. This analysis shows that Kildare Town is densifying at a faster rate than its surrounding hinterland areas with the rural areas to the south of Kildare Town experiencing small levels of population decline. This is in line with the NPF which favours growth within existing urban settlements and a move away from rural one-off housing. Throughout Kildare County, it can be observed that the surrounding urban areas are experiencing similar densification of population while their surrounding hinterland areas are either stable or experiencing population decline.



Figure 3.1: Regional Population Change on Square km Grid (Census, 2011-2016)

Figure 3.2 shows the areas of residential construction in Kildare during the period 2001 to 2016. The analysis shows the Town Centre has experienced little new residential development since 2001. The areas that have seen the highest levels of residential development over this period are to the north of the train station in the Whitesland housing estates with greater than 101 housing units completed in this area. Adjoining areas have also experienced high levels of housing growth, with aerial imagery showing that residential development has continued since the 2016 Census. Another part of Kildare Town that has experienced high levels of residential growth is to the south of Melitta Road in the Coolaghknock area and adjacent neighbourhoods.

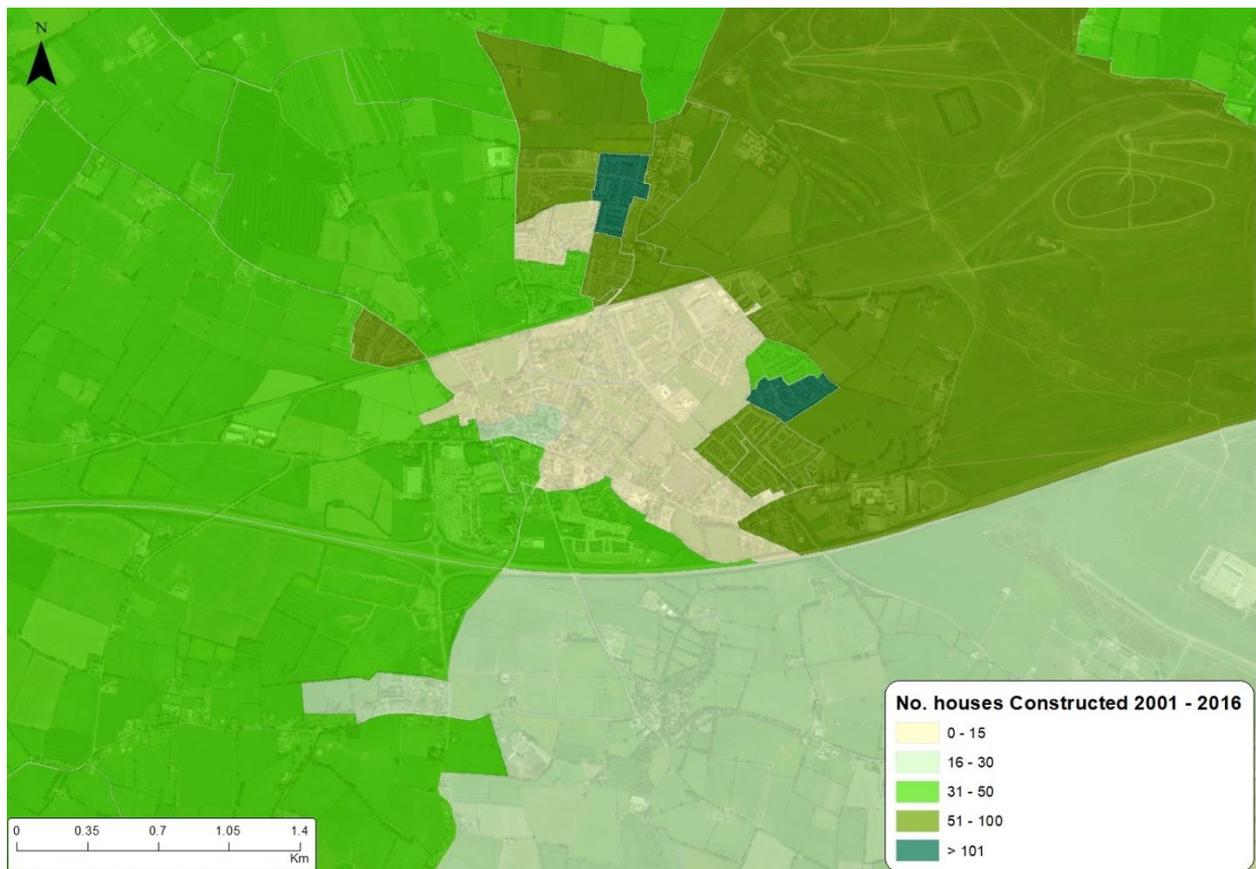
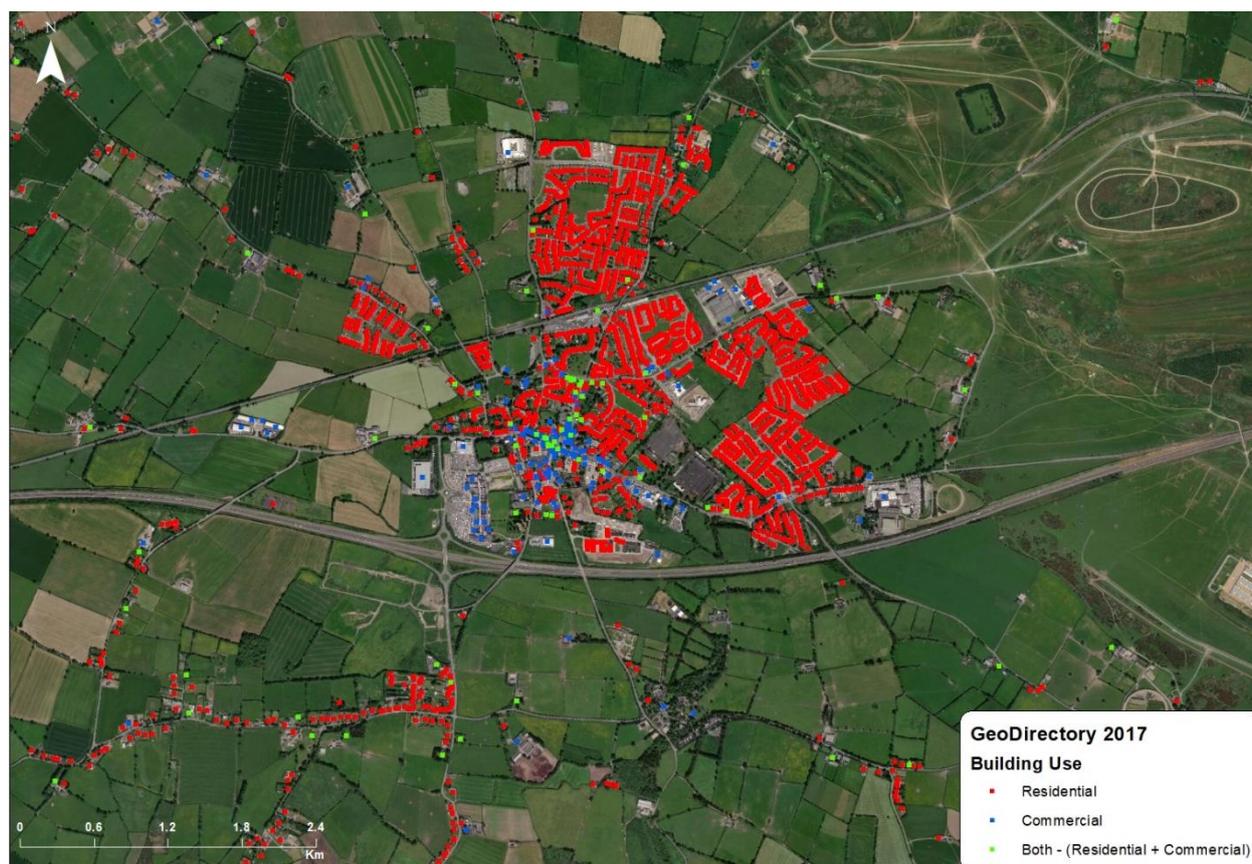


Figure 3.2: Number of Houses Constructed During 2001-2016 (Census, 2016)

## 3.2 Land Use Composition

Figure 3.3 shows the land use composition of Kildare Town using GeoDirectory (2017) to show residential, commercial and buildings used for both residential and commercial purposes. Commercial Buildings are primarily located in the Town Centre, extending south west to Kildare Retail Village which is sited near M7 Junction 13. There are also concentrations of commercial buildings along the Dublin Road and Melitta Road in the east of the town.

Residential buildings are spread throughout the town with significant clustering to the north and east of the town centre in large housing estates. To the south of the M7, residential development takes the form of ribbon type development predominantly along R415 and L7024. When analysing land use, it is important to note the lack of commercial buildings in the areas to the North of the town centre and the peri-urban area along the R415 and L7024, which may indicate a reliance on the private car for a large number of trip purposes such as childcare and convenience shopping.



*Figure 3.3: Residential and Commercial Buildings in Kildare Town (GeoDirectory, 2017)*

Figure 3.4 shows the housing density in the study area according to the number of residential units per hectare (UPH). This highlights that residential densities are extremely low throughout Kildare Town, with many areas containing less than 10 units per hectare. Low residential density has implications for the provision of local public transport and the potential patronage a future bus route might attract. The highest densities are located in CSO Small Areas in central Kildare and the east of the town where housing density levels of 20-30 units per hectare are achieved. The areas surrounding the train station have some of the lowest densities, which may present an opportunity for densification.



Figure 3.4: Census Small Areas (2016) – Housing Density

### 3.3 Job Density

Figure 3.5 shows the density of jobs in Kildare Town according to CSO workplace zones. As expected, the Town Centre has the highest density of jobs, with job densities reducing significantly outside of this pocket which contains Kildare Village, Tesco and St Brigid's Primary School. While the National Stud and Japanese Gardens may be a large employer in the Kildare Town study area, they are located in a geographically large workplace zone which dilutes the job density displayed in the map. A more accurate assessment of job locations within the study area is provided in the POWSCAR analysis outlined in Section 4.2.2.1.

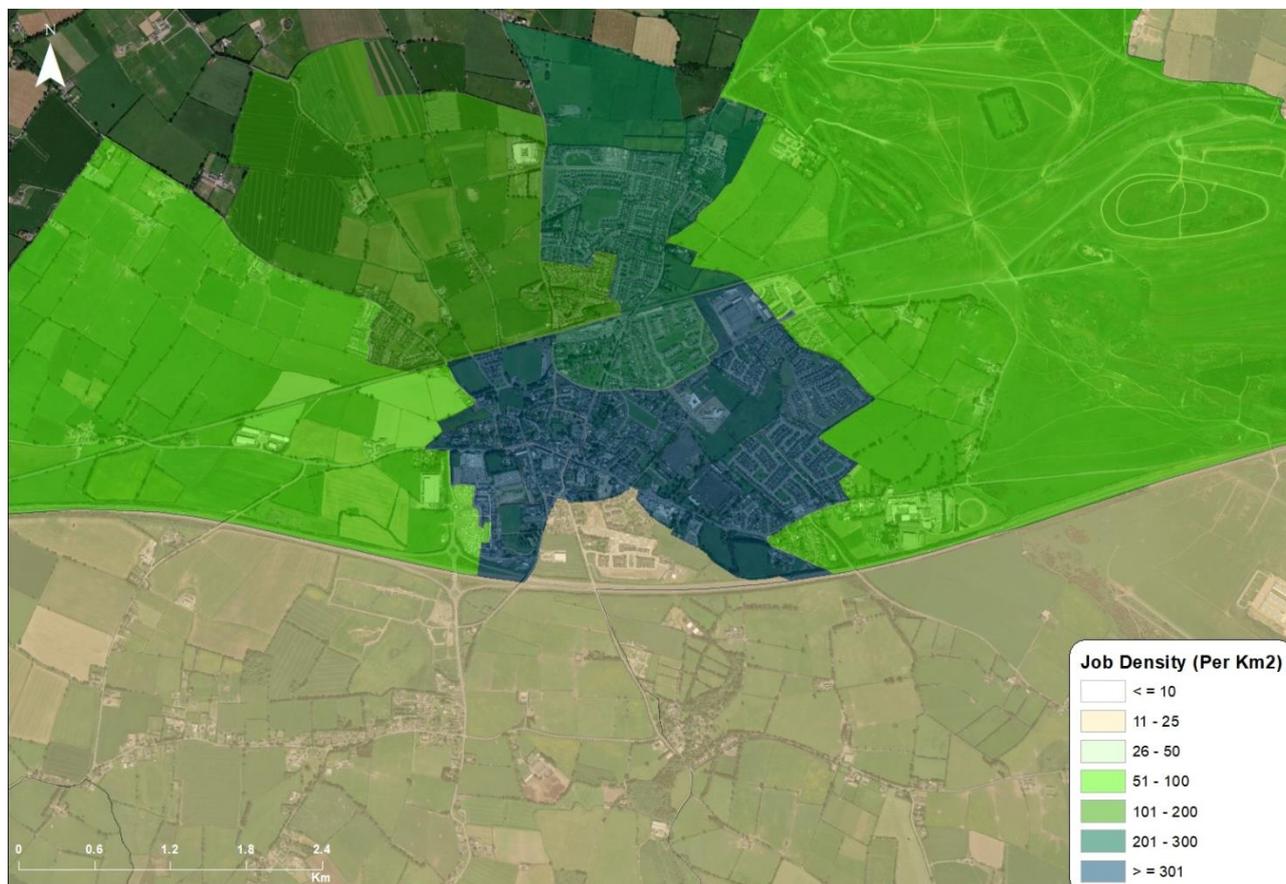


Figure 3.5; Census Workplace Zones (2016) – Number of Jobs Per Sq. KM

### 3.4 Deprivation Index

The Pobal Deprivation Index (2016) is used to determine the relative affluence or disadvantage of geographical areas in the study area. A map of the 2016 Pobal HP Deprivation Index at CSO Small Area level is shown in Figure 3.6. This shows that most of Kildare Town is rated as marginally above or marginally below average, with a number of pockets of disadvantaged and very disadvantaged areas throughout the Town. However, overall the study area is not characterised by extreme disadvantage or affluence.

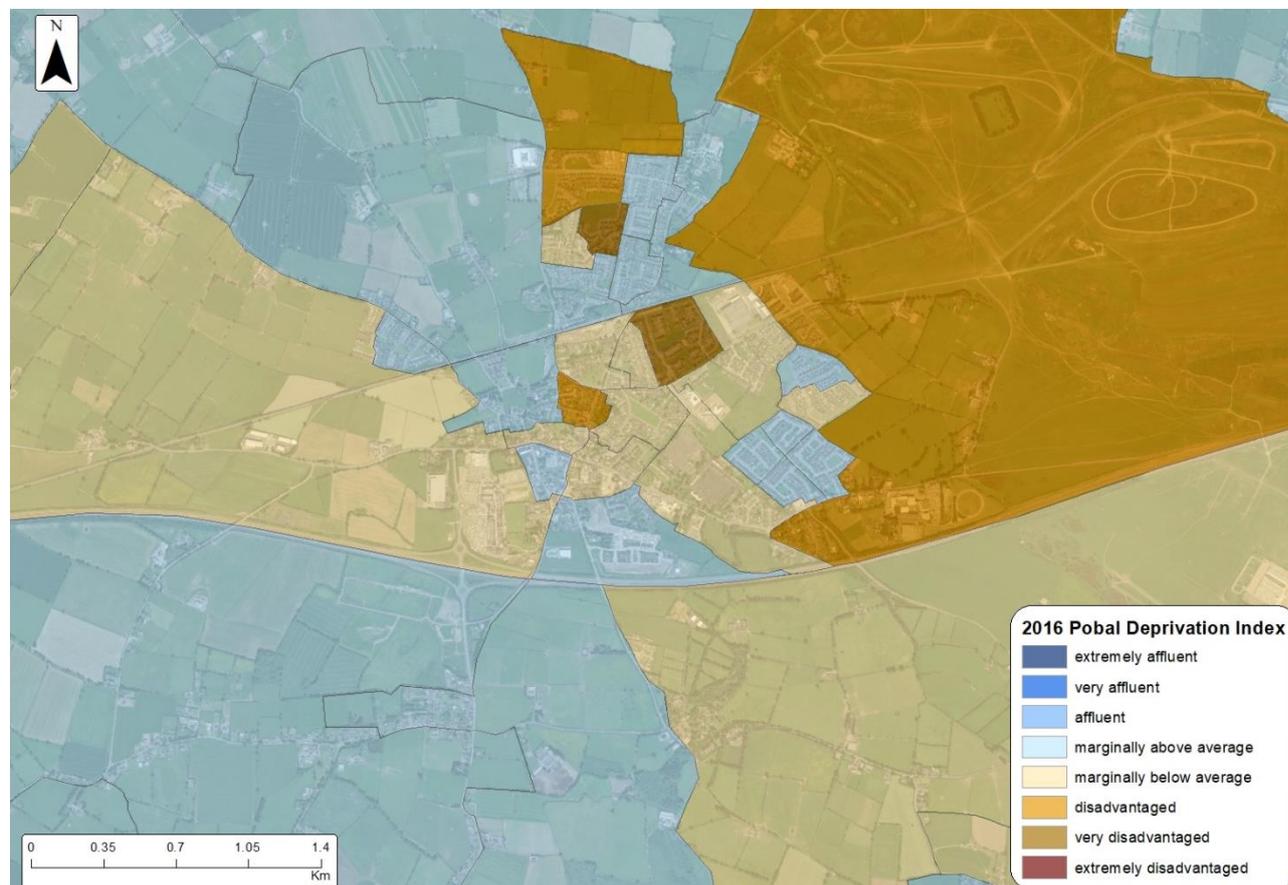


Figure 3.6: Pobal Deprivation Index 2016 – Kildare Town (CSO Small Areas)

### 3.5 Schools and Education Facilities

Kildare Town has 3 primary schools; Kildare Town Educate Together, Gaelscoil Mhic Aodha and St Brigid's Kildare Town Primary School. The location of these schools is shown in Figure 3.7. Table 3.1 provides a breakdown of the number of pupils attending each primary school as reported to the Department of Education and Skills. The largest of the 3 schools in terms of pupil numbers is St Brigid's with over 1,000 pupils, while the other two schools are substantially smaller.

Table 3.1: 2019 - 2020 Primary Schools Pupil Numbers

School Name	No. Of Pupils
Kildare Town Educate Together	415
St Brigid's Kildare Town Primary School	1,001
Gaelscoil Mhic Aodha	148

In addition to the 3 Primary Schools, Kildare Town has one Secondary School called the Kildare Town Community School which is located on the northern side of the town on the Dunmurray Road. Figure

3.7 shows the location of the Kildare Town Community School and Table 3.2 shows that 925 pupils attend this secondary school.

*Table 3.2: 2020 Secondary School Pupil Numbers*

School Name	No. Of Pupils
Kildare Town Community School	925

The primary schools are located within close proximity to Kildare Town centre, located less than 1km from the Market Square. Their central location makes them easily accessible on foot or bike from most of the Town which is positive in terms of sustainable travel. The location of the Secondary school on the northern periphery of the Town is a less than ideal location in terms of access by walking or cycling. However, at just under 1.5km from Market Square, it is under a 24-minute walk from the centre of town and given the relatively flat gradient it is quite cyclable. It is also well positioned in the context of future expansion of Kildare Town with the north-west suburbs likely to see significant housing expansion.



*Figure 3.7: Location of Education Facilities in Kildare Town*

## 4 Transport Context

This section provides an overview of the modal split for travel, the origin-destination of trips, public transport services, the road network and collisions in the study area.

### 4.1 Modal Split Analysis

#### 4.1.1 Work Trips

Figure 4.1 shows the modal split for work trips by Kildare Town residents. This highlights that Kildare residents are highly car dependent with 74.1% of commuters travelling by private motor vehicle. Public transport use is relatively low with a combined figure of 11.6% of trips made this way which breaks down as 5.6% and 6% using bus and rail respectively. The percentage walking to work is quite high at 11% while cycling is quite low at 1.7% cycling to work.

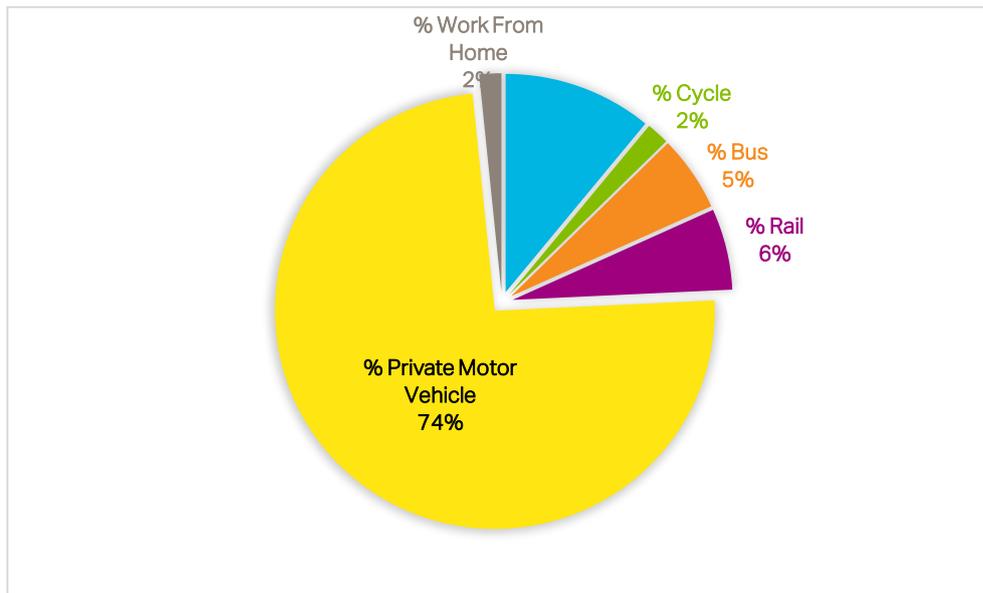


Figure 4.1: Kildare Town Modal Split – Work Trips

Figure 4.2 compares the modal split for work trips in Kildare Town with the county average and other similar urban centres across the Greater Dublin Area. The levels of car use in Kildare Town are below the county average by 4.1%. In general, the amount of sustainable travel in Kildare Town is 24.3% across all modes which compares favourably with other Kildare towns, such as Maynooth which has much lower levels of car dependency (65.5%), primarily due to its city centre (Connolly) rail service and its access to the Dublin Bus network. Notably, Kildare town has the third highest modal share for walking out of the comparison towns with only Athy and Newbridge performing better. Kildare has a relatively high rail mode share when compared with the comparator towns and this reflects the high frequency services at Kildare station and the direct inter-city services offering a quick journey into Heuston Station.

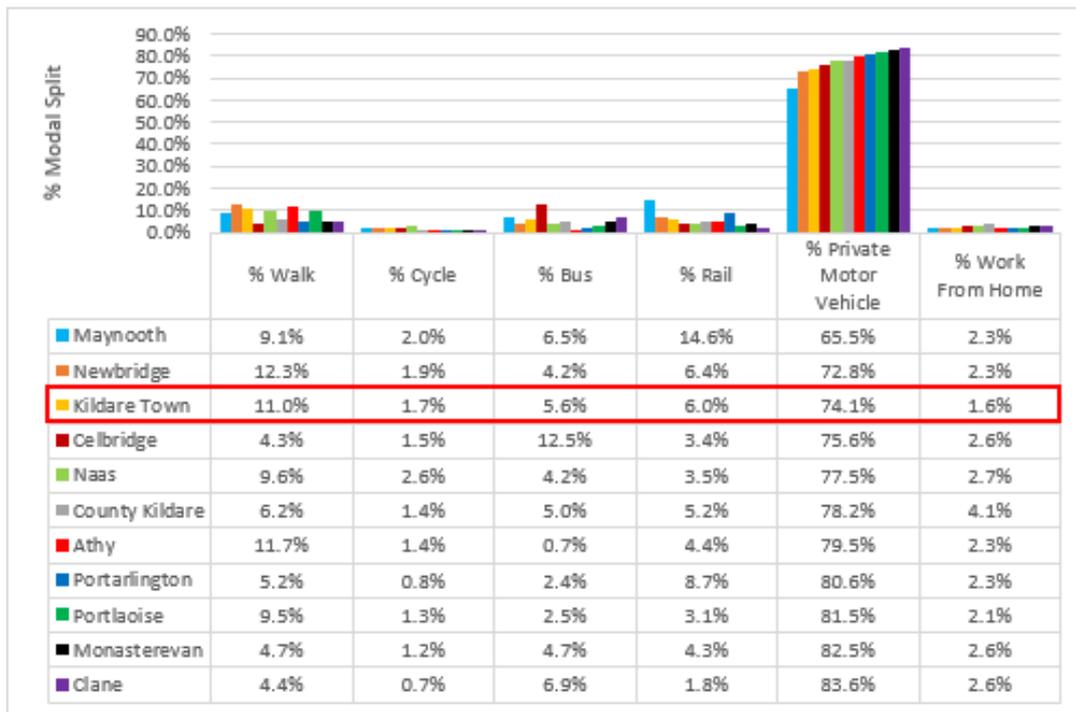


Figure 4.2: Modal Split Comparison – Work Trips

#### 4.1.2 Education Trips

Figure 4.3 shows the modal split for education (school and college) trips by Kildare Town residents. This shows that the primary mode of travel for education trips is the private motor vehicle (54.4%), followed by bus (22.9%) and walking (19.2%). Very few students use rail or cycle to reach school or third level education facilities.

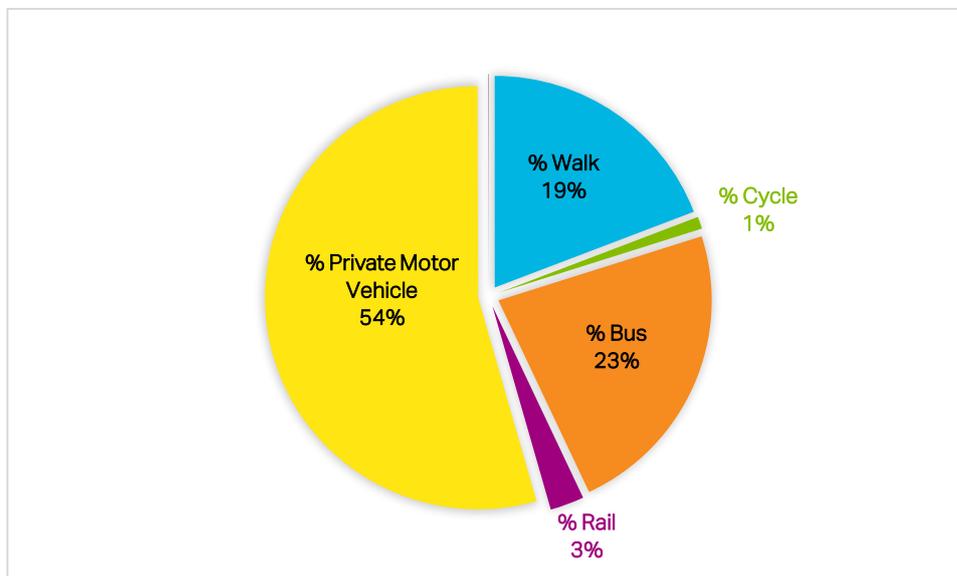


Figure 4.3: Kildare Town Modal Split – Education Trips

Figure 4.4 compares the modal split for education trips in Kildare Town with other similar urban centres in the Greater Dublin Area. Car use is higher in Kildare Town than the county average for education trips, this is due to the low pedestrian mode share, which is the lowest of all the comparator towns. Of the towns under study in this figure, Kildare has the highest level of bus travel for education trips.

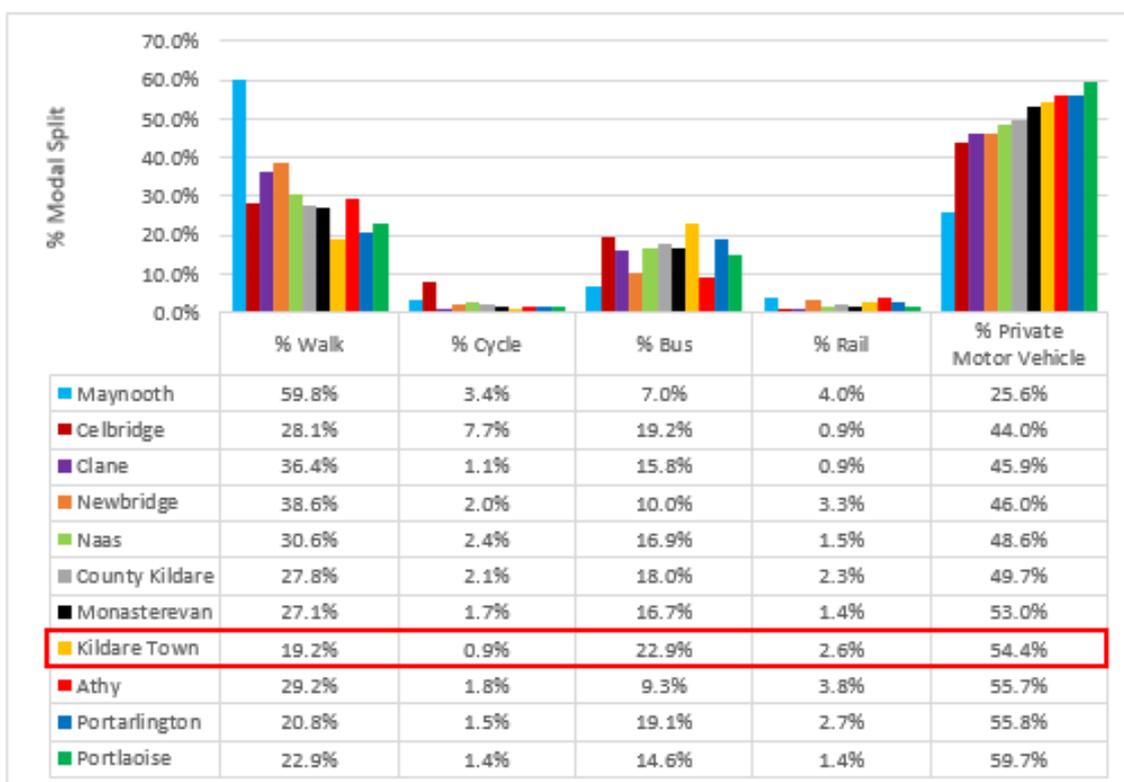


Figure 4.4: Modal Split Comparison – Education Trips

## 4.2 Origin-Destination Analysis

The Place of Work, School or College - Census of Anonymised Records (POWSCAR, 2016) dataset was used to assess the origin and destinations of trips to and from the study area.

### 4.2.1 Trips from Kildare Town

#### 4.2.1.1 *Work and Third Level Education Trip Destinations*

Figure 4.5 shows the work and third level education destinations for residents of Kildare Town across all travel modes. A breakdown of key destinations according to their CSO 'POWSCAR Town' category which includes settlements as well as rural areas within counties is also provided in Table 4.1.

A large volume of work trips are internal to Kildare town (16.8%) or its immediate surrounds (14.6%). There are also a high number of trips to the nearby towns of Newbridge (8.3%) and Naas (6%).

Almost one fifth of work and third level education trips (19.3%) are to destinations in the area defined by the CSO as 'Dublin City and Suburbs', with more than half of these being to the Dublin City Council local authority area. There is also a clear concentration of trips to the Tallaght area and to a lesser extent, to the Clondalkin/Red Cow area, both of which are relatively accessible from the M7/N7.

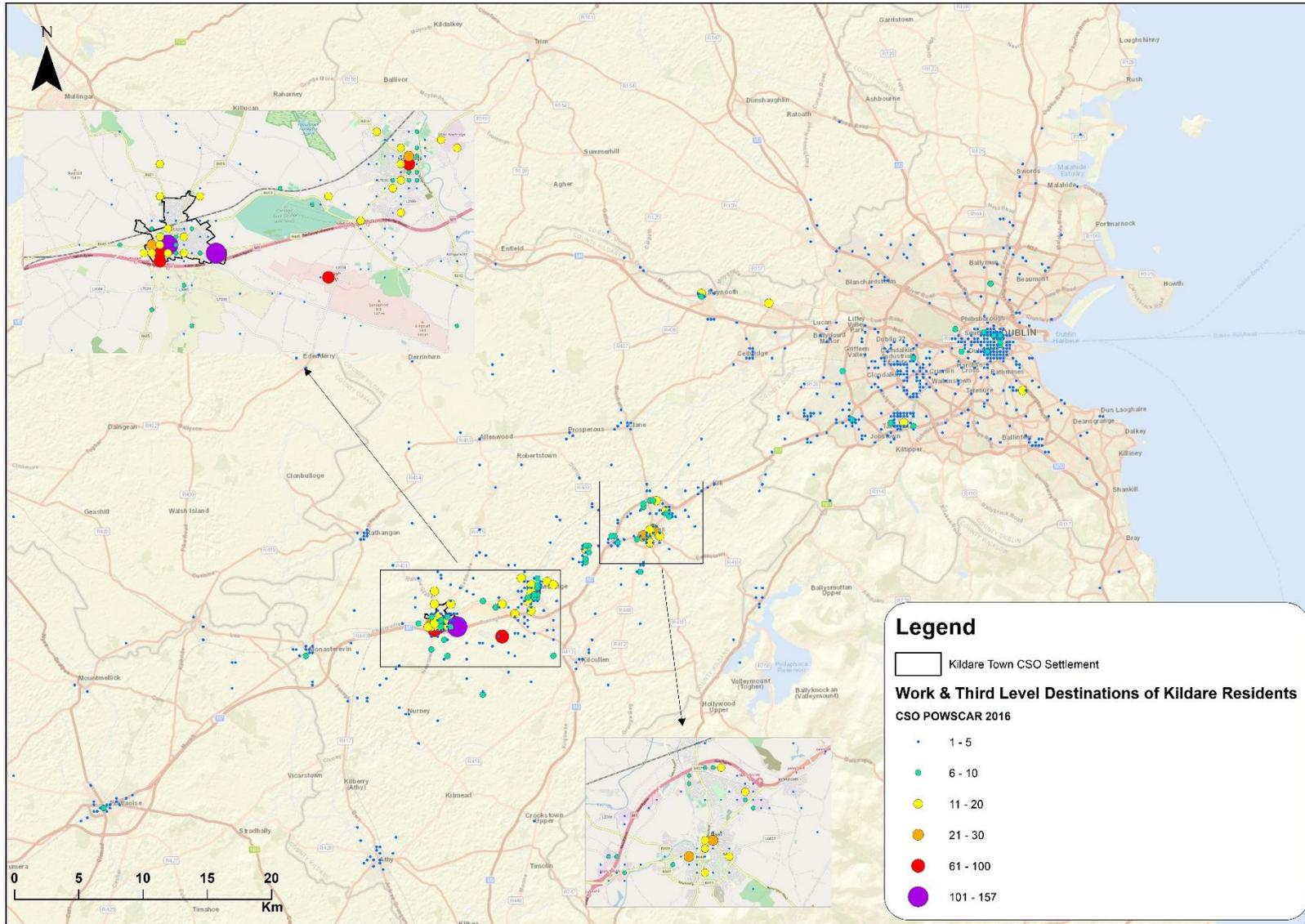


Figure 4.5: Destination of Work and Third Level Education Trips from Kildare Town (CSO Settlement - POWSCAR, 2016)

Table 4.1: Destinations of Work and Third Level Education Trips from Kildare Town  
(CSO Settlement - POWSCAR, 2016)

Destination of Work and Third Level Trips (POWSCAR Town)		Number of Trips	Percent of all Work and Third Level Trips from Kildare Town
Dublin City and Suburbs		721	19.3%
<i>Administrative Area within Dublin City and Suburbs</i>	<i>Dublin City</i>	415	11%
	<i>Dun Laoghaire Rathdown</i>	66	2%
	<i>Fingal</i>	24	1%
	<i>South Dublin</i>	216	6%
Kildare Town		629	16.8%
Kildare Rural		546	14.6%
Newbridge		309	8.3%
Naas		236	6%
Dublin Rural		59	2%
Maynooth		34	1%
Portlaoise		27	1%
Carlow		26	1%
Athy		18	0.5%
Monasterevin		18	0.5%
Rathangan		17	0.5%
Other destinations		260	7%
<i>Blank or uncodeable</i>		477	13%
<i>Mobile worker</i>		278	7%
<i>Works mainly at or from home</i>		74	2%
<i>Destination overseas</i>		5	0.1%
Total		3736	

#### 4.2.1.2 *Primary and Secondary Level Education Trip Destinations*

Figure 4.6 shows the primary school destinations for residents of Kildare Town. This highlights that most primary school trips are internal to Kildare Town. There are also a substantial number of residents who attend schools in the Newbridge area, with the most significant destinations in Newbridge for primary school pupils being Newbridge Educate Together and Gaelscoil Chill Dara, both of which share a campus south of the M7. A smaller number of pupils attend schools located at the Curragh Camp and in the village of Milltown to the north east of Kildare Town.

It is important to note that Gaelscoil Mhic Aodha has moved to the same site as Kildare Town Educate Together school since the Census 2016 was completed and the POWSCAR data will not capture this change.

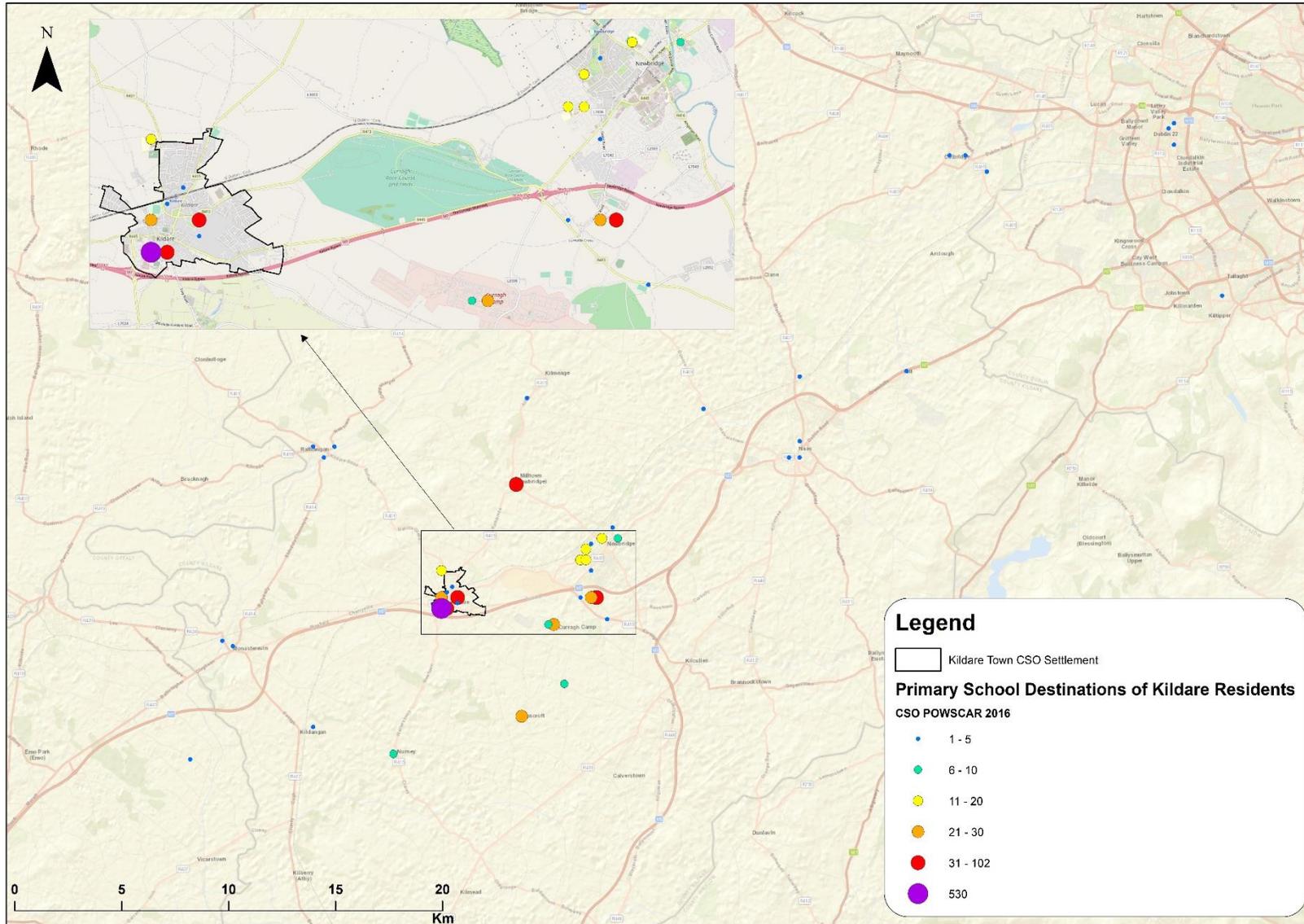


Figure 4.6: Destination of Primary School Trips from Kildare Town (CSO Settlement - POWSCAR, 2016)

Figure 4.7 shows the secondary school destinations of residents of Kildare Town. This highlights that the vast majority of secondary school trips are to Kildare Town Community School which is located just marginally outside the formal CSO Settlement boundary. There are also small clusters of pupils travelling to secondary schools located in the northern part of Newbridge, in the centre of Naas and at Curragh Camp. Small numbers of pupils resident in Kildare town commute longer distances to attend secondary schools scattered throughout the Dublin City and Suburbs area.

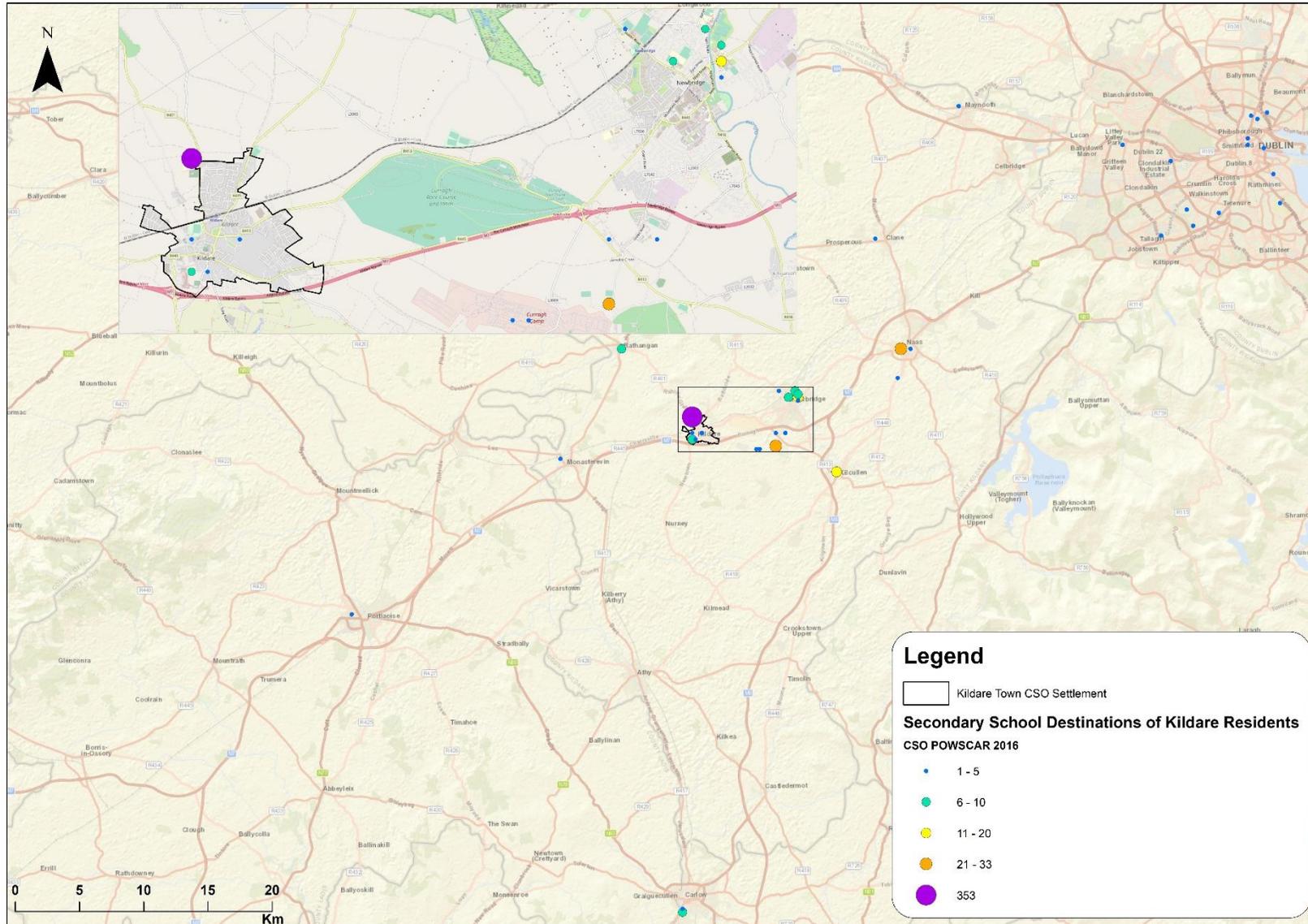


Figure 4.7: Destination of Secondary School Trips from Kildare Town (CSO Settlement - POWSCAR, 2016)

## 4.2.2 Trips to Kildare Town

### 4.2.2.1 Work Trips

Figure 4.8 and Figure 4.9 show the origin of work trips to the Kildare Town electoral division based on the electoral divisions from which people employed within the town are commuting from. These figures highlight that the employment catchment of Kildare Town extends into surrounding counties, including Dublin. However, the majority of trips are either internal or come from areas relatively close to Kildare Town, in particular Newbridge from which there are a significant number of trips. There are also concentrations of trips from some of the other towns within the local region including: Portlaoise; Portarlington; Monasterevin and Naas.

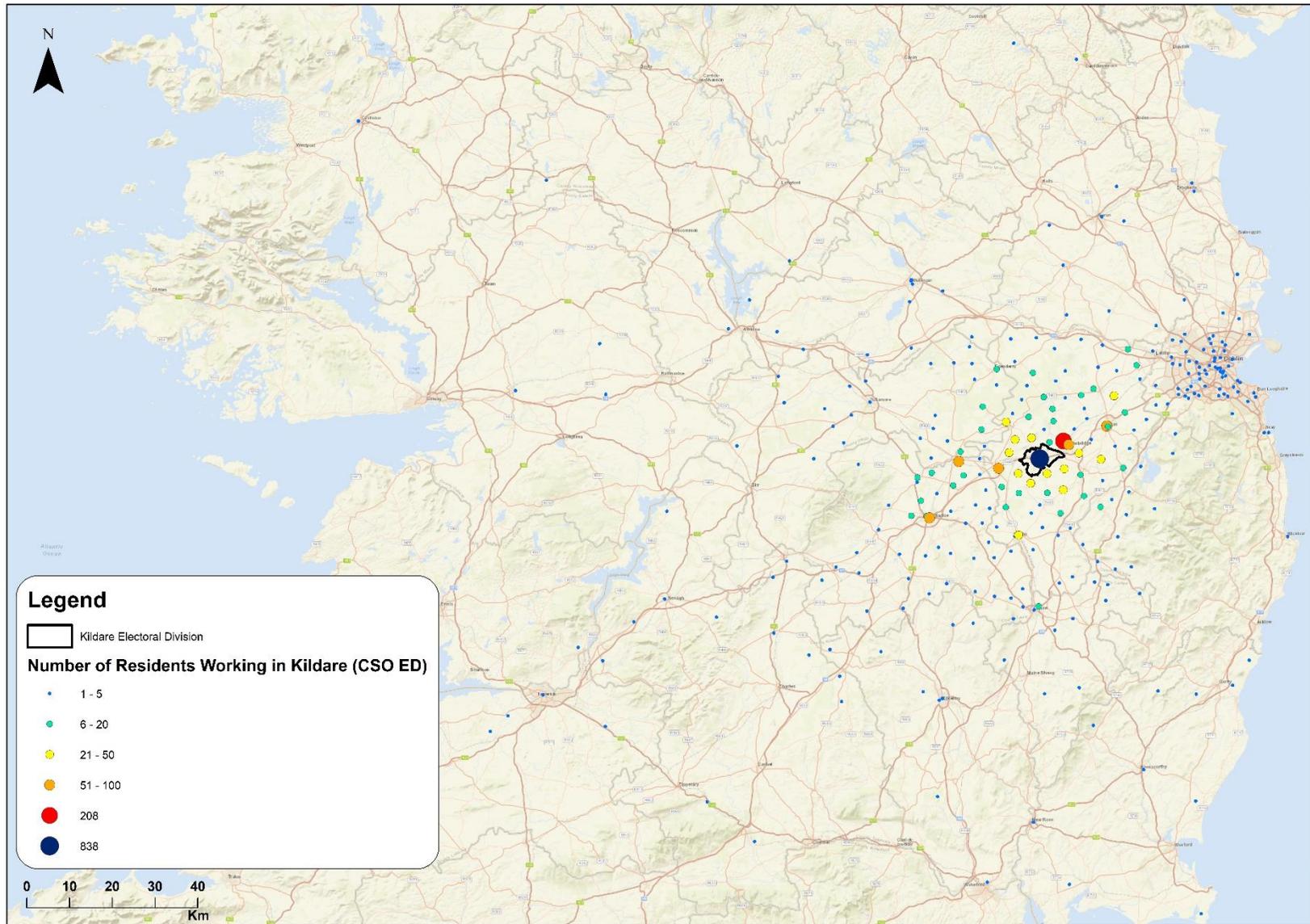


Figure 4.8: Origin of Work Trips to Kildare Town Electoral Division (POWSCAR, 2016)

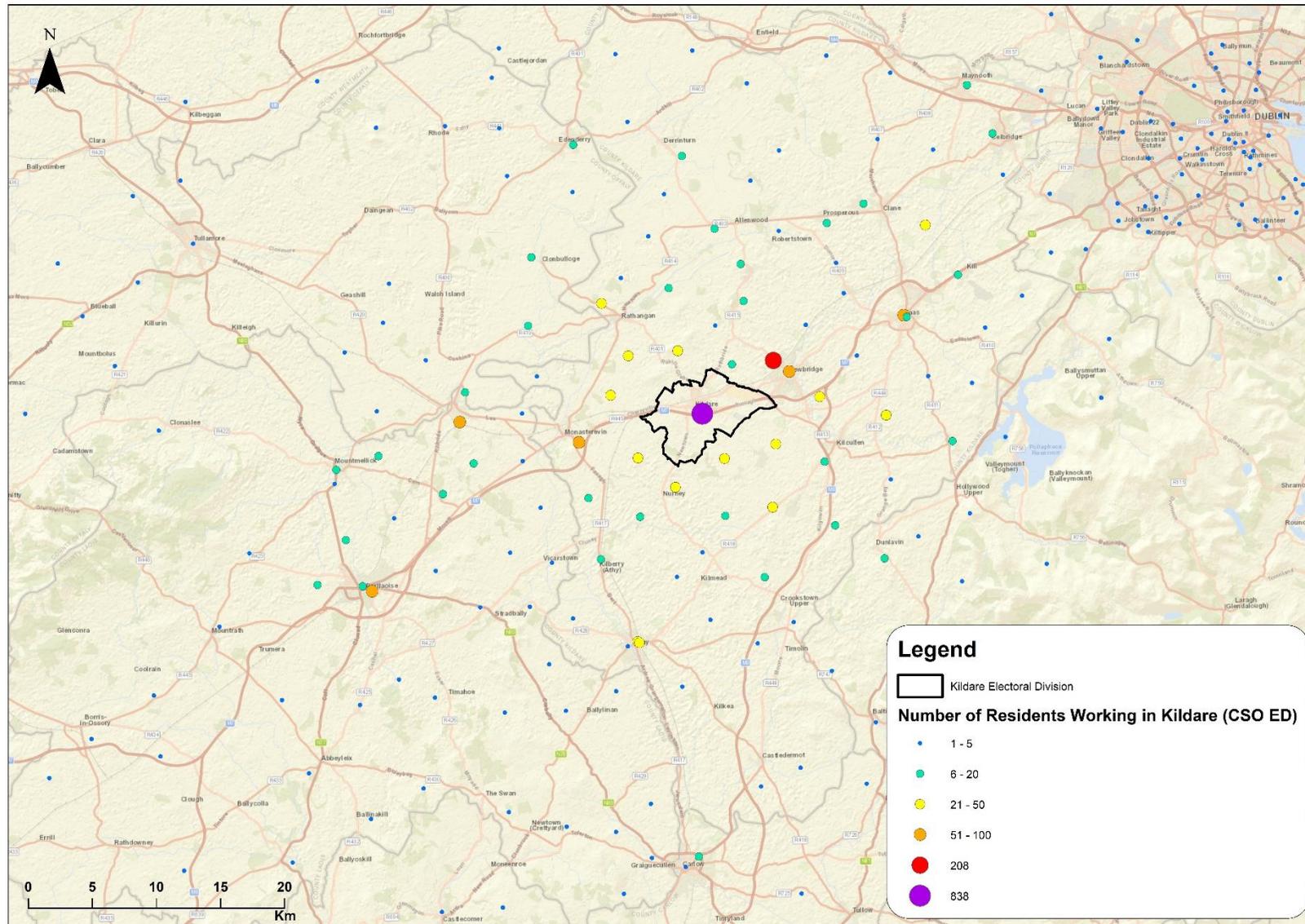


Figure 4.9: Origin of Work Trips to Kildare Town Electoral Division – Detailed Extent Showing Local Area (POWSCAR, 2016)

Figure 4.10 shows the main work destinations within the Kildare Town electoral division. This highlights that the largest concentration of jobs is located to the south west of the town centre and includes Kildare Village and the ModusLink Global Solutions campus. There are also a large number of jobs located on the east side of the town south of the R446 where Kildare Chilling Company is based, although some of the jobs in this area may also be related to the adjacent Racing Academy and Centre of Education (RACE) premises. The key remaining concentrations of jobs within the study area away from the town centre include; Kildare Town Community School; the Irish National Stud & Gardens; Ashley Lodge Nursing Home; Lourdesville Nursing Home; and Whitesland West Business Park north of the Monasterevin Road (R445).

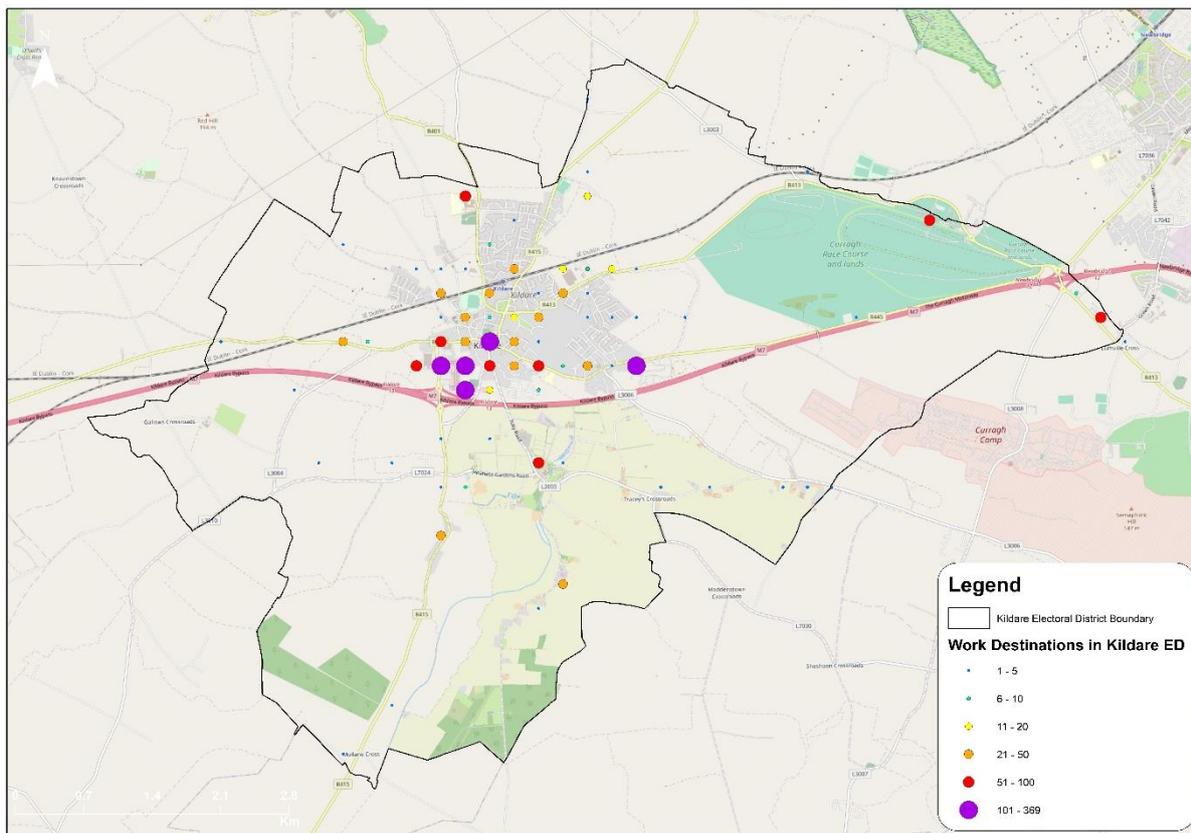


Figure 4.10: Destination of Work Trips in Kildare Town Electoral Division (POWSCAR, 2016)

#### 4.2.2.2 Education Trips

Figure 4.11 shows the origin of primary school trips to Kildare town based on the CSO Small Area in which pupils’ live. A summary of pupil origins according to their CSO ‘POWSCAR Town’ category (which includes settlements as well as rural areas within counties) is also provided in Table 4.2. This table shows that most trips to primary schools in Kildare town originate within the town itself (76%) or in the ‘Kildare Rural’ area (13%). The largest single concentration of pupil origins outside of Kildare town is found in Monasterevin, from which there were 39 pupils travelling to primary school in Kildare town in 2016.

Within Kildare town, the most significant concentrations of primary school pupils are found in the residential estates to the east and north.

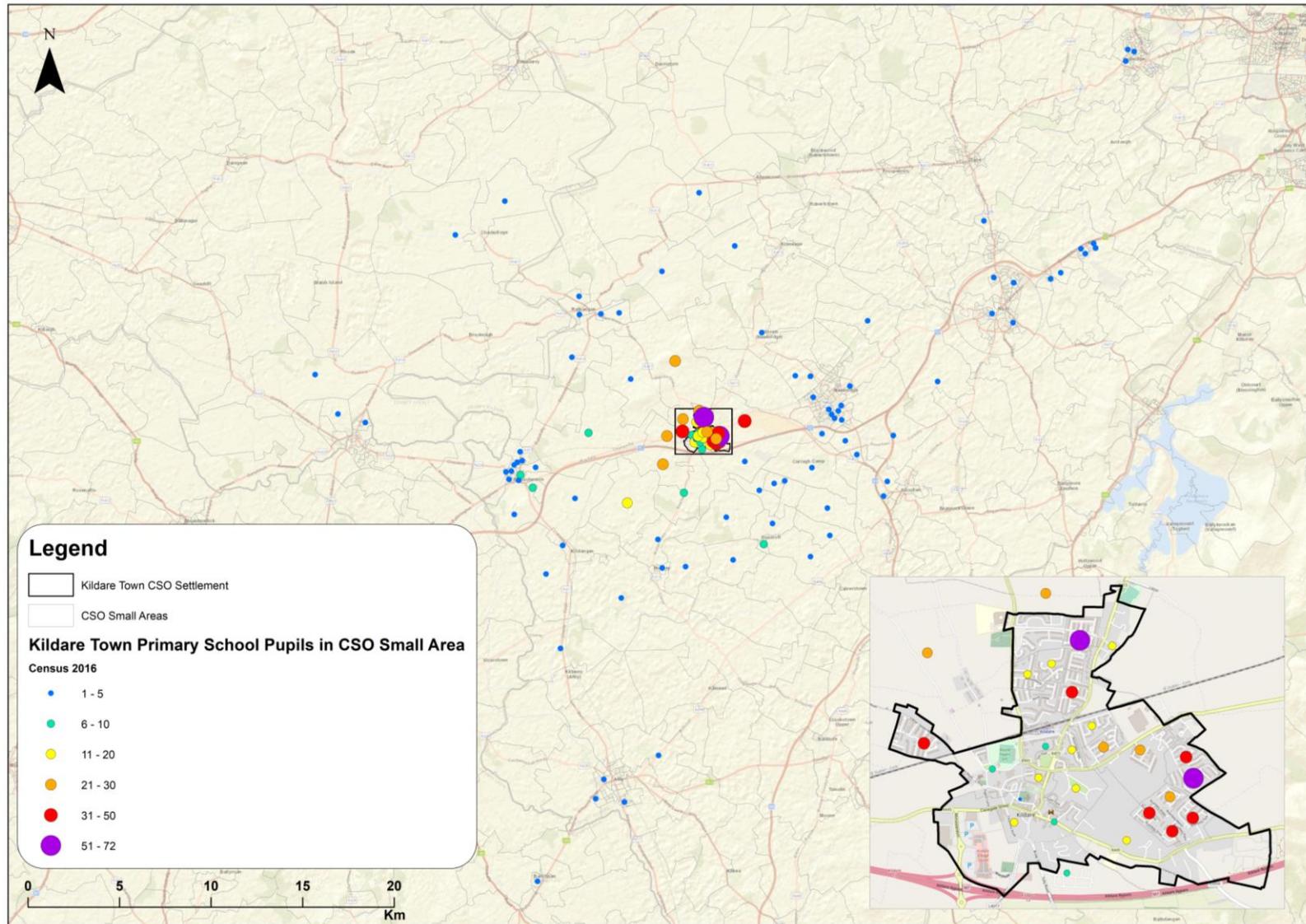


Figure 4.11: Origin of Primary School Trips to Kildare Town (POWSCAR, 2016)

Table 4.2: Kildare Town Primary School Catchment (CSO Settlement - POWSCAR, 2016)

CSO Settlement – Pupils' Residence	Number of Trips	Percent of all Secondary School Trips to Kildare Town
Kildare	746	76%
Kildare Rural	128	13%
Monasterevin	39	4%
Newbridge	9	1%
Suncroft	7	1%
Rathangan	6	1%
Kill	6	1%
Other	44	4%
Total	985	100%

Figure 4.12 shows the origin of secondary school trips to Kildare town based on the CSO Small Area in which pupils' live. A summary of pupil origins according to their CSO 'POWSCAR Town' category (which includes settlements as well as rural areas within counties) is also provided in Table 4.3. Unsurprisingly, the secondary school catchment is more dispersed than for the primary schools in the town, with just over half of pupils (53%) coming from Kildare Town itself, compared to almost three quarters of pupils in the case of primary schools. Almost one third of pupils attending secondary school in Kildare town come from areas outside of defined settlements within the 'Kildare Rural' area. The largest concentrations of pupil origins with respect to defined settlements outside of Kildare town include: Nurney (5%); Newbridge (3%); Suncroft (2%) and Kildangan (2%).

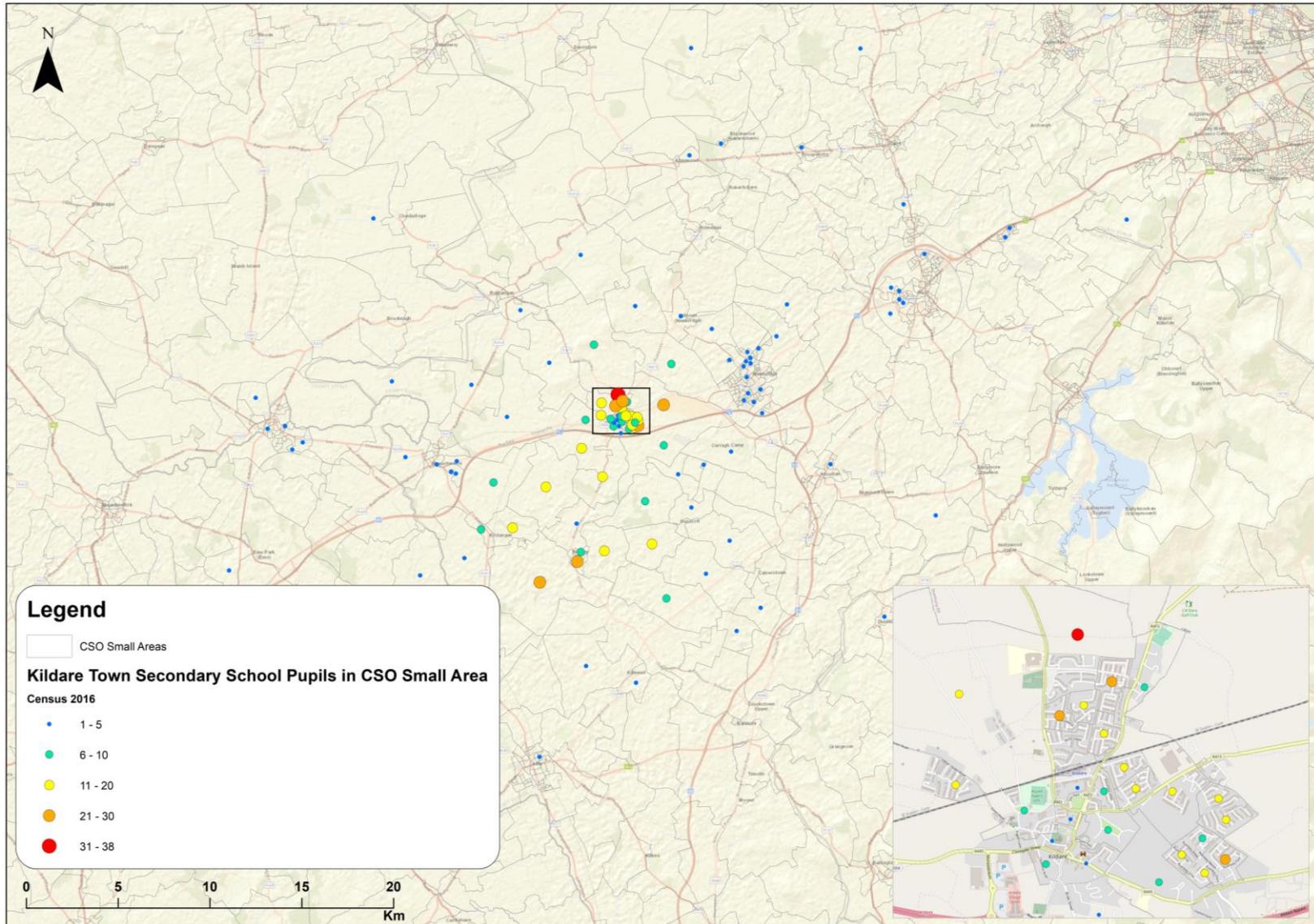


Figure 4.12: Origin of Secondary School Trips to Kildare Town (POWSCAR, 2016)

Table 4.3: Kildare Town Secondary School Catchment (CSO Settlement - POWSCAR, 2016)

CSO Settlement – Pupils' Residence	Number of Trips	Percent of all Secondary School Trips to Kildare Town
Kildare	372	53%
Kildare Rural	201	29%
Nurney	35	5%
Newbridge	21	3%
Suncroft	13	2%
Kildangan	12	2%
Monasterevin	9	1%
Naas	7	1%
Other	31	4%
Total	701	100%

## 4.3 Public Transport

### 4.3.1 Bus Services

Kildare Town is served by a number of bus services offering connections to towns within Kildare, Dublin and the rest of Ireland. Table 4.4 provides an overview of the origin and destination of each of the bus services that serve Kildare Town and Figure 4.13 to Figure 4.21 show the routing of each of the services through the study area. Later in the report, Section 6.5.1 contains a review of existing bus stop infrastructure in the town.

Table 4.4: Summary of Bus Services Serving Kildare Town

Operator	Route No.	Origin	Destination	< 07:00	07:00 - 10:00	10:00 - 17:00	17:00 - 19:00	> 19:00	No. Services Daily
Local Link Kildare	883	Athy	Newbridge	0	1	3	0	0	4
		Newbridge	Athy	0	1	2	1	0	4
Kyanitedale Ltd	826	Monasterevin	Naas General Hospital	1	2	5	1	0	9
		Naas General Hospital	Monasterevin	0	2	5	1	1	9
GoAhead	126	DCU Collins Avenue	Kildare	0	1	1	2	3	7
		Kildare	Connolly Station	1	1	3	1	2	8
	126d	Connolly Station	Kildare (Via Suncroft)	0	0	1	0	0	1
	126b	Kildare	Connolly Station (via Suncroft)	0	1	0	0	0	1
	126a	Connolly Station	Kildare	0	1	0	0	0	1
		Rathangan	Connolly Station	0	0	1	0	0	1
Dublin Coach	726	Laois	Dublin Airport	6	6	14	2	6	34
		Dublin Airport	Laois	6	3	14	4	7	34
	300	Ennis / Killarney / Tralee / Limerick	Dublin City - Bachelors Walk (via Kildare Village)	3	6	14	4	8	35
		Dublin City - Burgh Quay	Ennis / Killarney / Tralee / Limerick	2	6	14	4	9	35
	816	Portarlington Library	Kildare Village	1	2	7	2	4	16
		Kildare Village	Portarlington Library	0	3	7	2	4	16
Kenneally's / JJ Kavanagh	Num14	Maynooth	Kildare	0	0	0	0	3	3
		Kildare	Maynooth	0	2	1	0	0	3

### 4.3.2 Bus Route Maps

Sections 4.3.2.1 to 4.3.2.4 display the route maps for the bus services listed in Table 4.4. Where both directions of the bus service use the same route, this is shown as overlapping lines, and any divergence from the shared route is shown as individually coloured lines.

#### 4.3.2.1 Local Link Route Map

The route for the Local Link 883 bus service is shown in Figure 4.13.



Figure 4.13: Local Link Route 883 – Athy to Newbridge

### 4.3.2.2 *Kyanitedale Ltd Route Map*

The route for the Kyanitedale 826 bus service is shown in Figure 4.14.



Figure 4.14: Kyanitedale Ltd Route 826 – Monasterevin to Naas General Hospital

### 4.3.2.3 *Go Ahead Route Maps*

The route for the Go Ahead 126 bus service is shown in Figure 4.15.



Figure 4.15: Go Ahead Route 126 – Kildare to Connolly Station

The route for the Go Ahead 126a bus service is shown in Figure 4.16.



Figure 4.16: Go Ahead Route 126a – Rathangan to Connolly Station

The route for the Go Ahead 126b bus service is shown in Figure 4.17.



Figure 4.17: Go Ahead Route 126b – Kildare to Connolly Station (via Suncroft)

The route for the Go Ahead 126d bus service is shown in Figure 4.18.



Figure 4.18: Go Ahead Route 126d - Connolly Station to Kildare (via Suncroft)

#### 4.3.2.4 Dublin Coach Route Maps

The route for the Dublin Coach 300 bus service is shown in Figure 4.19.



Figure 4.19: Dublin Coach Route 300 – Dublin City Centre to Ennis / Killarney / Tralee / Limerick

The route for the Dublin Coach 726 bus service is shown in Figure 4.20.



Figure 4.20: Dublin Coach Route 726 – Laois to Dublin Airport

The route for the Dublin Coach 816 bus service is shown in Figure 4.21.



Figure 4.21: Dublin Coach Route 816 – Kildare Village to Portarlington Library

### 4.3.3 Rail Services

Kildare Town station is located on the main southern rail line which connects Dublin with the regional cities of Cork, Galway, Limerick and Waterford. All inbound services that stop at Kildare Town station terminate at Heuston station and do not use the Phoenix Park tunnel; these inbound services are listed in Table 4.5. Commuter rail services that avail of the Phoenix Park Tunnel commence at Newbridge station. In the outbound direction, Kildare Town has a number of daily services to regional cities and also a large number of trains to Portlaoise, the outbound rail services are listed in Table 4.6.

*Table 4.5: Summary of Inbound Services to Heuston Station– Time serving Kildare Town Station*

Origin	< 07:00	07:00 - 10:00	10:00 - 17:00	17:00 - 19:00	> 19:00	No. Services Daily
Portlaoise	2	4	7	2	4	<b>19</b>
Athlone	1	1				<b>2</b>
Kildare	1					<b>1</b>
Carlow		1			1	<b>2</b>
Limerick		2				<b>2</b>
Galway		2		1	1	<b>4</b>
Waterford		2	3	1	1	<b>7</b>
Westport		1				<b>1</b>
<b>Total Number of Inbound Services:</b>						<b>39</b>

*Table 4.6: Summary of Services Outbound from Heuston Station – Time serving Kildare Town Station*

Destination	< 07:00	07:00 - 10:00	10:00 - 17:00	17:00 - 19:00	> 19:00	No. Services Daily
Portlaoise		3	7	3	5	<b>18</b>
Waterford		1	2	2	1	<b>6</b>
Galway & Westport		1	1			<b>2</b>
Limerick			1	1		<b>2</b>
Athlone				1		<b>1</b>
Kildare					2	<b>2</b>
<b>Total Number of Outbound Services:</b>						<b>31</b>

Figure 4.22 shows the boarding and alighting profile along the Kildare Line, this data comes from the most recent Heavy Rail Census which was carried out in 2018. The data shows that Kildare Town train station has just under 900 daily boarding's with the average number of daily boarding's for stations along the line being 799 a day. In respect to alightings, just over 1,000 daily alighting's occur at Kildare Town station and the average number of daily alighting's is 810 a day along this railway line. Kildare Train Station ranks 4<sup>th</sup> overall in terms of the number of daily boarding's and 8<sup>th</sup> overall in terms of alighting's along the Kildare Line.

Excluded from Figure 4.22 is Heuston station which has by far the highest number of daily boarding's at 11,505 and 11,660 alighting's. Heuston station was excluded to compare Kildare Town station with similar village/town-based stations along the Kildare line. As can be seen in Figure 4.22, Kildare Town compares favourable in terms of daily boarding's with Sallins/Naas and Newbridge stations.

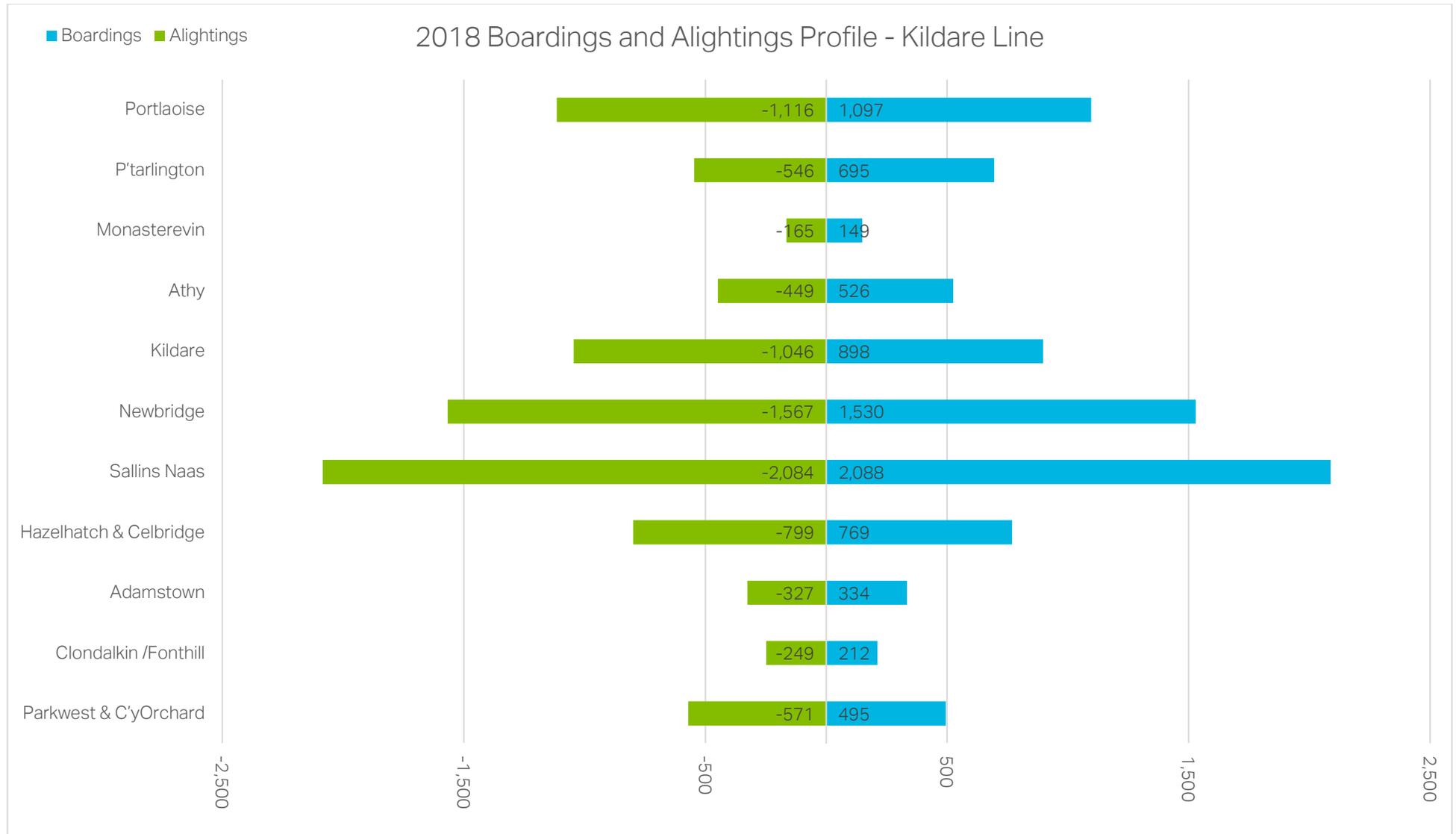


Figure 4.22: Boarding and Alighting Profile along the Kildare Line (Heavy Rail Census, 2018)

### 4.4 Road Network

The major roads in Kildare Town are shown in Figure 4.23. The main east-west access road through Kildare is the R445, Newbridge Road / Monasterevin Road. The main north-south route through the town is provided by the R415, the R401 ties in with the R415 and also provides for north-south movements in particular for the residential area of Bishopsland. The R413 departs for the R445 just west of Newbridge and skirts the Curragh to the north entering Kildare Town to the north east and linking up with the R415 in the centre of Kildare Town. The opening of the M7 Motorway has had a big impact on Kildare Town, bypassing it to the south and taking a lot of passing traffic out of the Town Centre. As can be seen in Figure 4.23, Kildare Town lacks an orbital distributor road in particular to the north and west of the town centre. Instead in order to make orbital movements people are required to travel into the Town Centre in order to travel out again.

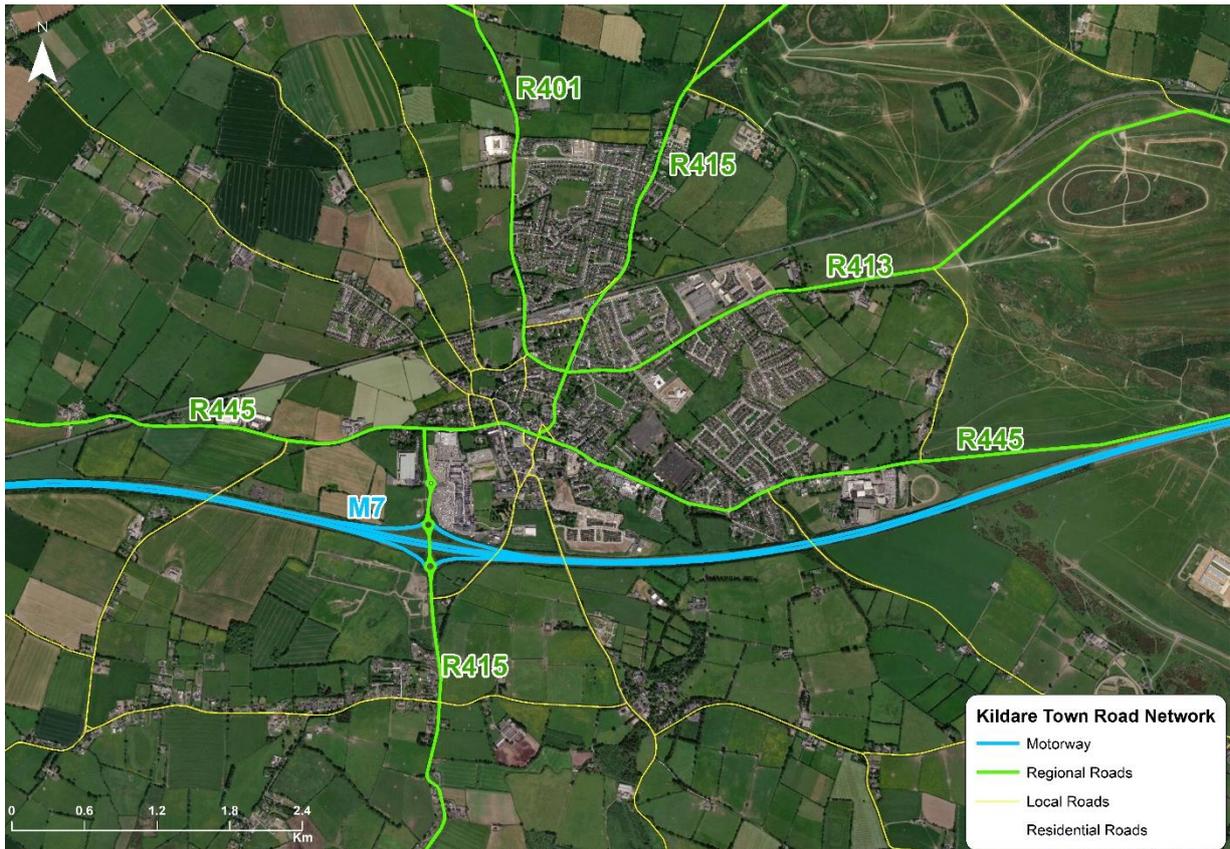


Figure 4.23: Road Network Kildare Town

### 4.5 Collisions

Figure 4.24 and Table 4.7 show the Road Safety Authority (RSA) database of collisions in Kildare Town during 2008-2016. Collision severity is divided by the RSA into; fatal, serious and minor collisions.

Table 4.7: RSA Collisions 2008 – 2016 in Kildare Town

Data	Kildare Town		
	Fatal	Serious	Minor
Collisions	3	4	63
Casualties	3	16	91

In respect of fatal collisions, there have been 3 fatal collisions within the study area; one on the R445, one on the M7 just east of junction 13 and one on the L3004. There have been four serious collisions within the study area which resulted in 16 casualties. In relation to Minor collisions there were 63 recorded in the 8-year period which resulted in a total of 91 casualties.

KCC have provided information relating to collisions that are too recent to be recorded in the RSA statistics. There was an accident approximately a year ago, at Gallagher’s Cross (junction of the R401 and The L7018 – north of Kildare Town). This accident involved a motorcycle and a car. In addition, the Garda Roads Policing Unit made KCC aware of the following problem areas around Kildare Town:

- The first issue relates to the L2032 which is the road between the Athgarvan Inn and Scoil Bride Athgarvan and relates to speed:

*“This Road has been enforced by ourselves (Garda Roads Policing) and motorists are reporting not seeing speed signs which are either too small or hidden behind bushes. Speeding on this road is of Major concern and has not eased since the Roadworks on the M7 have been almost completed. This Road carries high pedestrian / cyclists volumes etc. to and from the School from the village.”*

- The second issue relates to Gallagher’s Cross, reports suggest the following behaviour:

*“Some vehicles coming from the minor road (Nursing home direction towards Kildare) which should stop (Stop sign and line) at this junction are failing to stop and driving straight out into oncoming traffic. Residents are quite concerned re this location.”*



Figure 4.24: RSA Collisions 2008 – 2016 in Kildare Town

## 4.6 Active Modes and Permeability

### 4.6.1 Permeability Analysis

In order to assess permeability and walking catchments in Kildare Town, an accurate path network was developed. An example of this network is shown in Figure 4.25 with the pedestrian paths shown as green lines. The advantage of this path network is that it can accurately assess pedestrian movement; rather than simply representing walking distances on the road network.

The path network covers all of the Kildare Town zone of influence study area. The baseline path network ends where pavements cease on the approach roads to the study area. The network was originally extracted from Open Street Map and then extensively modified using aerial photography, Google Street View and Ordnance Survey of Ireland mapping to identify paths, cut-throughs and public tracks. The path network is used to assess the walking distance catchment for key destinations in Kildare Town.



Figure 4.25: Example of Path Network in Kildare Town

## 4.6.2 Key Permeability Barriers

Kildare Town has a number of spatial barriers, such as the rail line, M7 Motorway and the former Magee Barracks site which act as barriers to pedestrian movement in Kildare Town. Although there are several crossings points, the motorway and rail line act as north-south barriers which constrain pedestrian movements. Within the town, there are also large impermeable blocks which can cause longer indirect trips for cyclists and pedestrians. Examples of this include; the former Magee Barracks site and several housing estates which have a single entrance and are surrounded by boundary walls. Figure 4.26 shows the key permeability barriers identified in Kildare Town, the areas highlighted in yellow are single entrance housing estates.

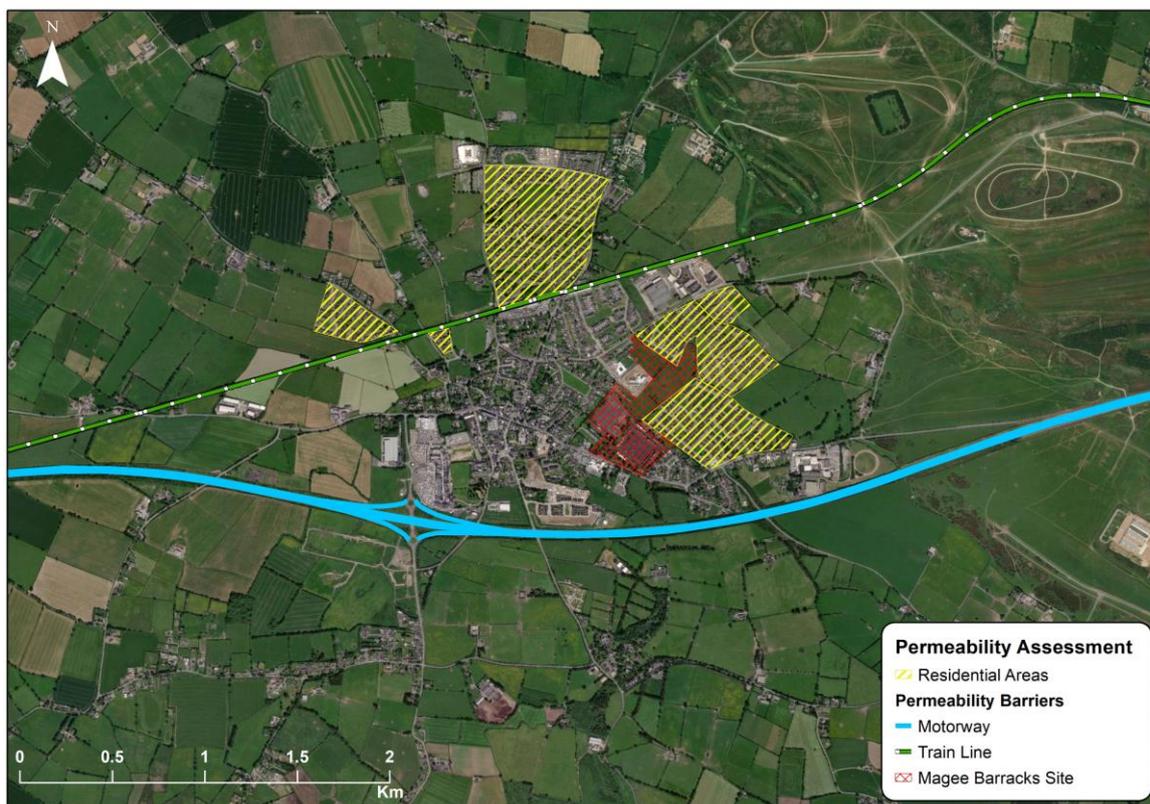


Figure 4.26: Identified Barriers to Permeability in the study area

Within Kildare Town, the primary issue affecting permeability is the prevalence of cul-de-sac housing estates with high perimeter walls. An example of this is shown in Figure 4.27 where a residence is spatially adjacent to the Train Station, but the actual walking distance is significantly longer due to the routing of the existing path network. These situations create longer trip distances which encourage car use and inconvenience pedestrians.



Figure 4.27: Example of Indirect Travel due to Cul-De-Sac Design and Boundary Walls

Another example of impermeable design is the Woodside park development, which is adjacent to the Train Station, but there is no direct link to the station provided. This has resulted in residents having to traverse a wall to access the nearby Train Station, creating a clear desire line, as shown in Figure 4.28.



Figure 4.28: Example of Informal Walk Link to Train Station – Woodside Park

### 4.6.3 Town Centre

Figure 4.29 shows the actual walking catchment for 1km trips to the town centre. Furthermore, a circular 1km as-the-crow-flies circular catchment shows the theoretical catchment area that could be achieved if there were no permeability restrictions. The town centre has a good network of radial paths and lanes stretching out from the town centre, which has resulted in good permeability to this location. As can be seen in Figure 4.29, the town centre catchment is constrained to the north and east and would benefit from additional walk links in these areas.



Figure 4.29: 1km Walking Distance to Kildare Town Centre

### 4.6.4 Kildare Village

Figure 4.30 show the 1km walking catchment for Kildare Village, which is a site which is very accessible via the M7 for vehicular access, but not as accessible by foot for local residents. The Kildare Village catchment is constrained to the east and north, presenting scope for improvement. There is poor accessibility between the eastern areas of the town centre and Kildare Village in particular. Kildare Village would benefit from additional walking links which would better integrate this shopping area into the urban fabric of Kildare Town.

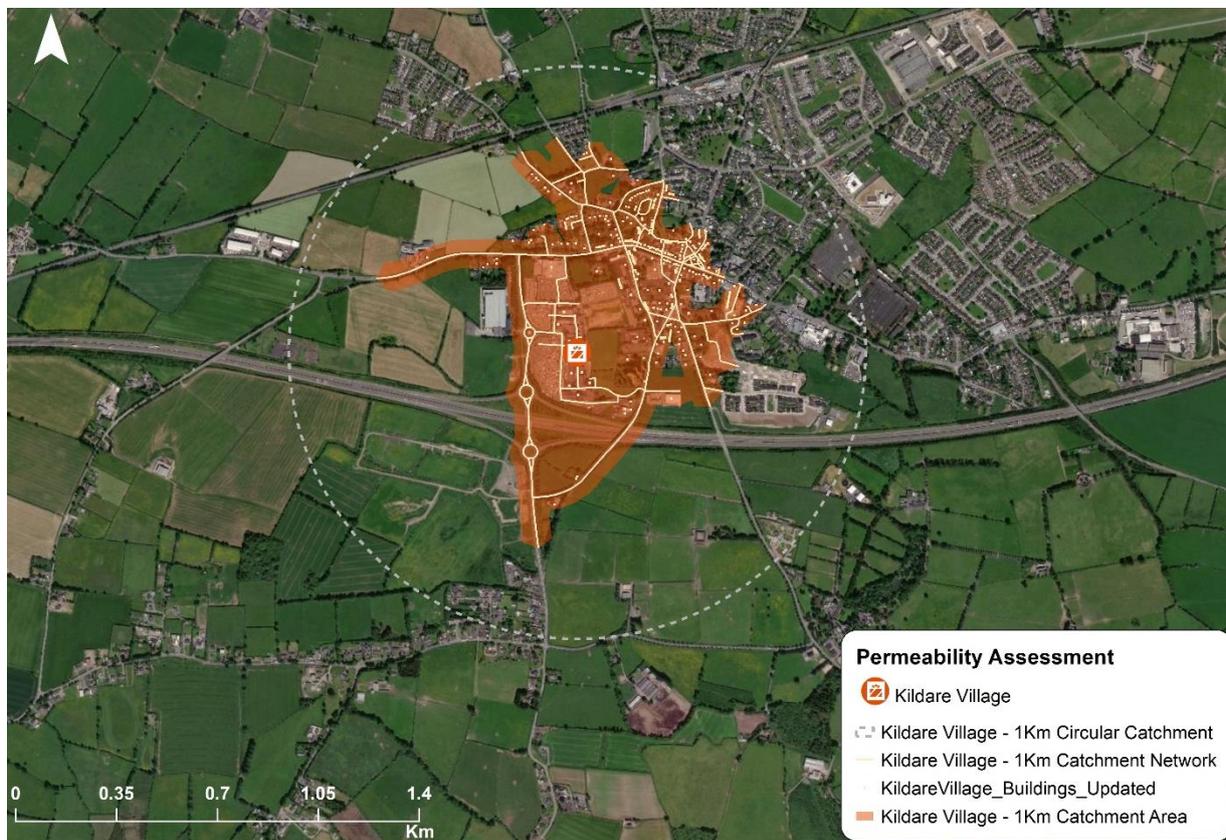


Figure 4.30: 1km Walking Distance to Kildare Village

### 4.6.5 Supermarkets

Figure 4.31 shows the location and catchments of the three supermarkets in Kildare Town. This highlights the lack of access to the residential areas to the north and east of Kildare town which are outside the catchment. The supermarkets are well located in close proximity to the town centre, however, the east of the town is poorly served despite the fact most of the residential developments in this area are within the unconstrained 1km catchment. Development in this area would benefit from the proposed road link through the former Magee barracks site to improve permeability. All residences north of the railway line are beyond the 1km walking catchment for existing supermarkets.

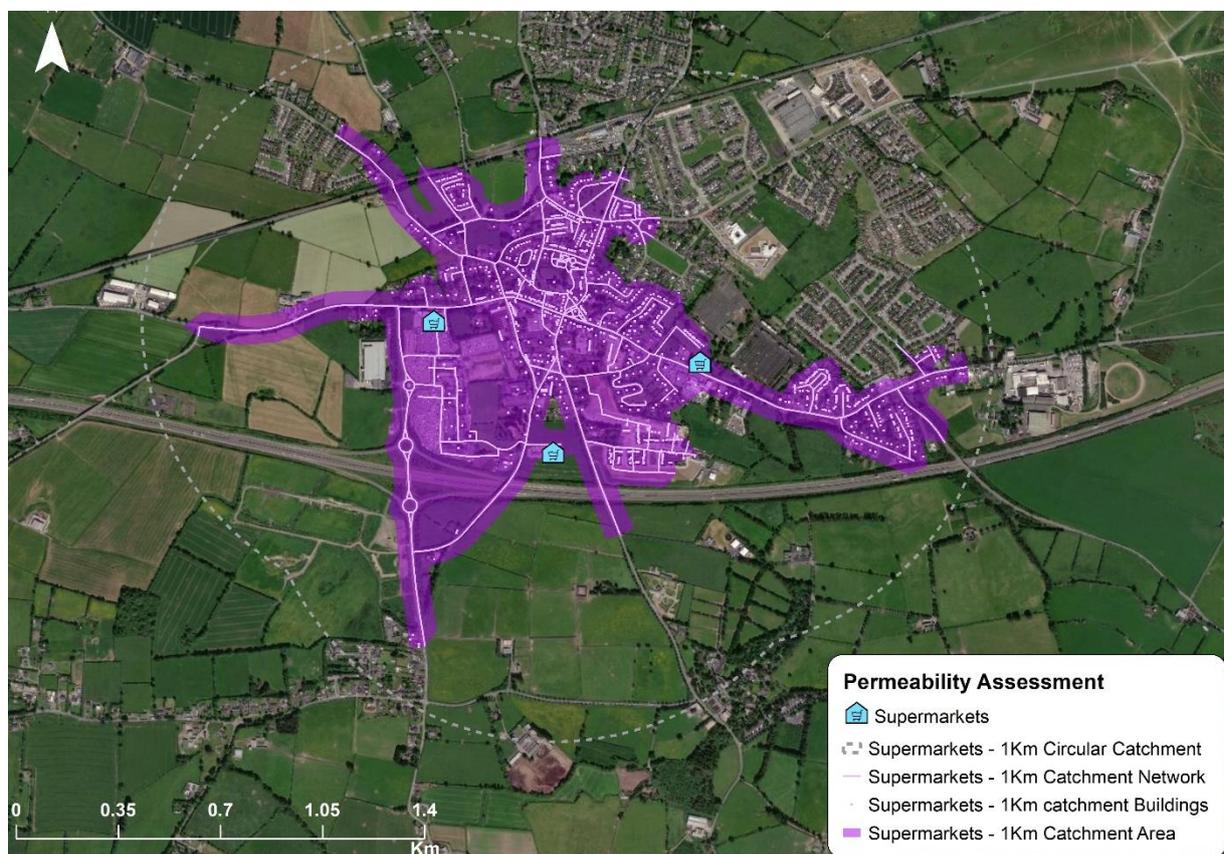


Figure 4.31: 1km Walking Distance to Supermarkets

### 4.6.6 Train Station Catchment

Figure 4.32 shows the actual walking catchment for 1km trips to the train station. Access to the station is relatively good to the south as the station is located next to the main north-south approach roads. However, the catchment is constrained from penetrating into the residential developments to the north due to cul-de-sac housing estates which are not connected to the station. There is scope to expand the train station catchment to the residents in the north, west and east with permeability improvements.

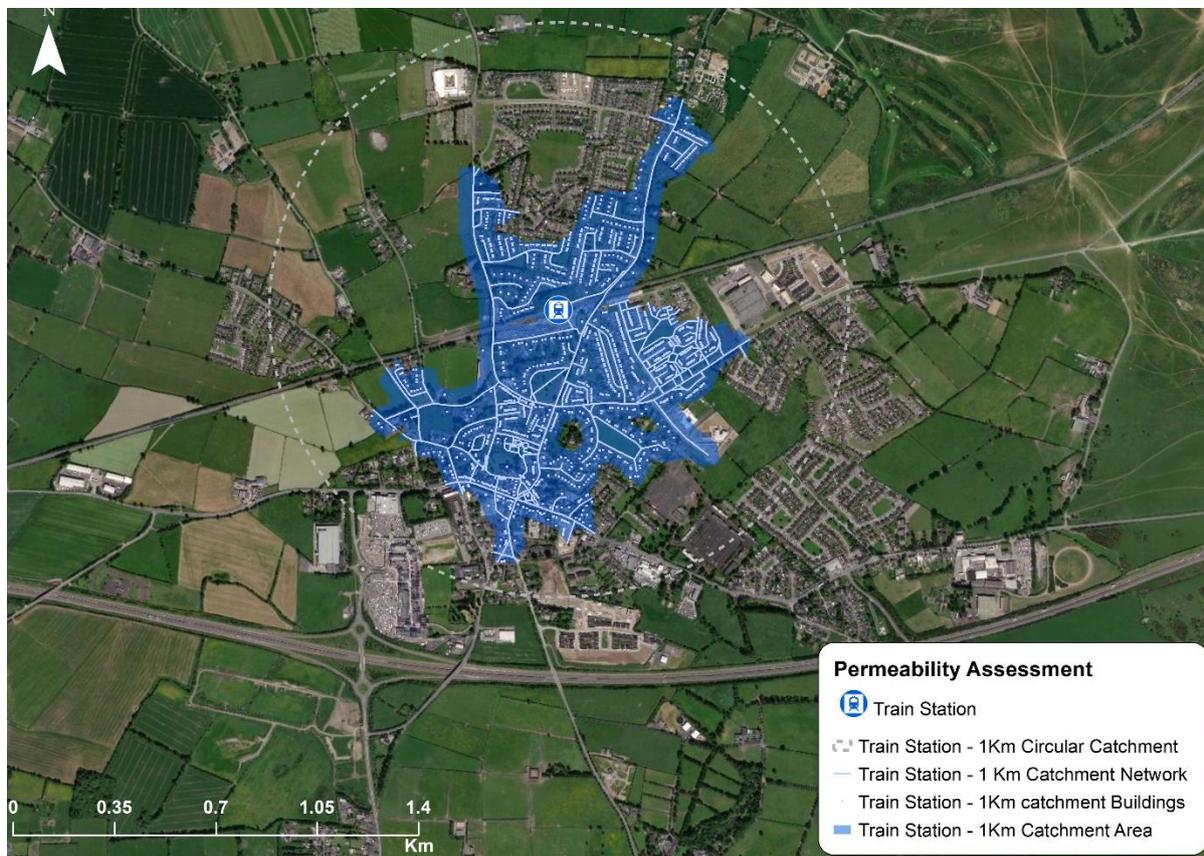


Figure 4.32: 1km Walking Distance to Kildare Town Train Station

### 4.6.7 Bus Stop catchments

Figure 4.33 shows the location and 500m catchment of the bus stops within Kildare Town. The catchment distance is based on the Sustainable Residential Development in Urban Areas (2009) guidelines<sup>3</sup>, which define a public transport corridor as 500 metres for a bus stop or 1km for rail.

There are a large number of bus stops across the study area and the catchment encompasses most residential areas. An exception is Green Road where there is no bus service even though there is residential development along the road. The housing estate along the northern section of the R401 near the community school and The Plains housing estate on the R413 are also outside the bus catchment. To the north of the town, the prevalence of boundary walls around housing estates restricts access to bus stops located on main roads. The quality of bus stop infrastructure and the bus route service frequency varies considerably across the study area. The quality of public transport infrastructure will need to be improved in tandem with permeability to encourage greater patronage.



Figure 4.33: 500m Walking Distance to Bus Stops

<sup>3</sup> Page 43, 'Walking distances from public transport nodes (e.g. stations / halts /bus stops) should be used in defining such corridors. It is recommended that increased densities should be promoted within 500 metres walking distance of a bus stop, or within 1km of a light rail stop or a rail station.' Link: <https://www.housing.gov.ie/sites/default/files/migrated-files/en/Publications/DevelopmentandHousing/Planning/FileDownload%2C19164%2Cen.pdf>

### 4.6.8 Primary Schools Catchments

Figure 4.34 shows the walking catchment for 1km trips to primary schools in Kildare Town. The primary schools in Kildare Town are located in the central part of the town and this aids walking and cycling access by shortening trip distances. The residential areas to the east, while being within the 1km unconstrained catchment, are poorly connected to the primary schools and would benefit from the proposed link through the former Magee barracks site. The residential areas to the north of the railway line would benefit from additional walk links to improve their connection to the Primary Schools.



Figure 4.34: 1km Walking Distance to Primary Schools

### 4.6.9 Secondary School Catchment

Figure 4.35 shows the actual 1km catchment for walking trips to Kildare Town Community School. The catchment is relatively small, which reflects its location on the northern periphery of the town and the limited number of walking connections. However, the areas surrounding the school have been zoned for future residential development which will increase the number of accessible residences over time. The cul-de-sac design of the residential developments to the south-east of the school have constrained access to the community school and this could be improved.

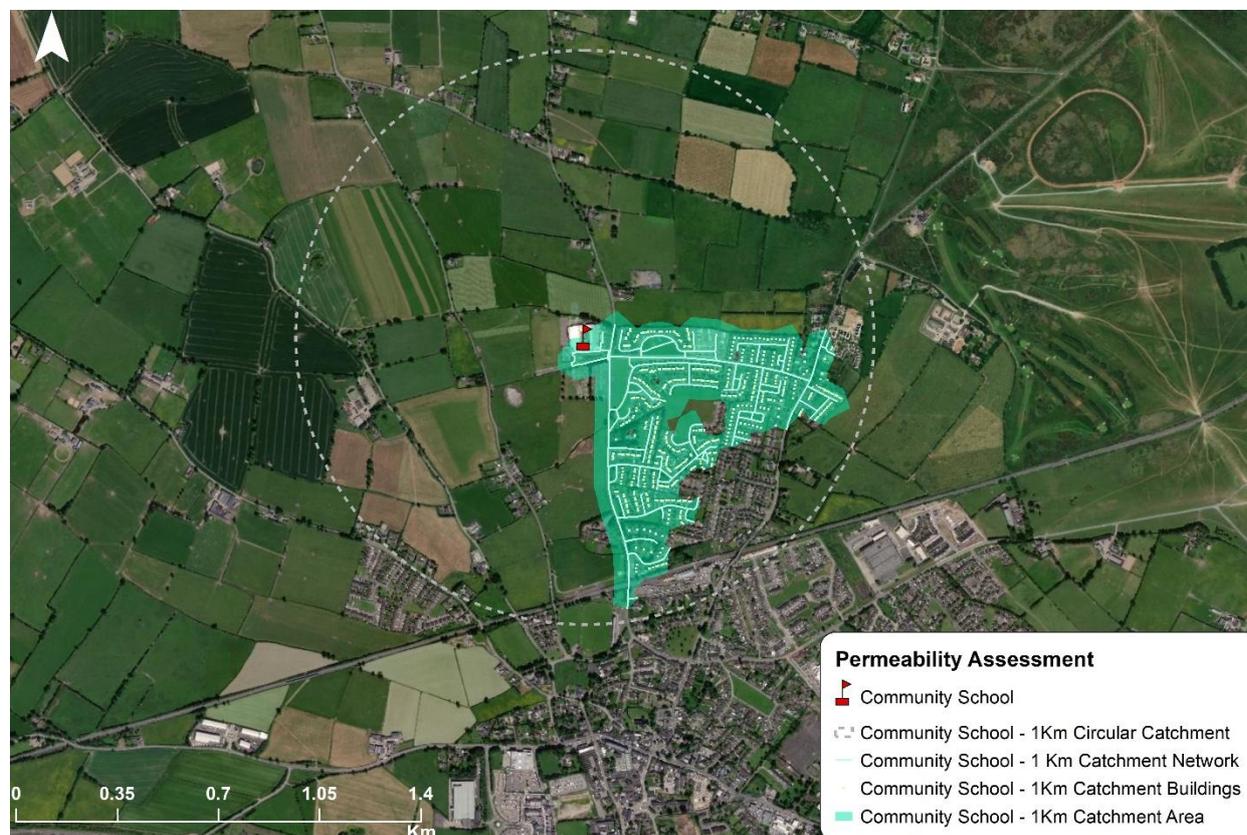


Figure 4.35: 1km Walking Distance to Community School

#### 4.6.10 Permeability Statistics

Table 4.8 provides an overview of the walking catchment for key locations within Kildare Town. This table provides a count of the number of residential and commercial addresses in each catchment area using the GeoDirectory (2018) database. Furthermore, the table provides a breakdown of the percentage of total buildings in the zone of influence study area which are within walking distance of each location. This highlights that the Community School and Kildare Village catchments are very small and capture less than 20% of residential buildings in the study area. In comparison, the primary school's catchment is larger, covering 45% of residential buildings. The bus catchment is reasonably strong at 43% of residential buildings, which is larger than the train station catchment which services only 33% of houses due to the poor connections to surrounding residential areas. The town centre has a large catchment area, but the table shows only 34% of residences are within 1km of the town centre due to the construction of a large number of buildings on the periphery of the settlement beyond this distance.

*Table 4.8: GeoDirectory Statistics for Building Coverage of Key Services*

Catchment	Existing Path Network Catchment		% of Total Study Area Buildings	
	Residential Addresses	Commercial Addresses	Residential Addresses	Commercial Addresses
Town Centre - 1km	1,209	343	34%	80%
Train Station - 1km	1,172	182	33%	42%
Bus Stops - 500m	1524	332	43%	77%
Kildare Village - 1km	345	273	10%	64%
Supermarkets - 1km	1,006	337	29%	79%
Community School - 1km	556	5	16%	1%
Primary Schools - 1km	1,583	355	45%	83%

## 5 Public and Stakeholder Consultation

Early engagement with key stakeholders and the general public prior to developing the Kildare Transport Strategy was considered essential in order to gain an appreciation of existing transport issues and opportunities and ensure that the proposals which will be contained within the strategy will meet community needs. Consultation undertaken to date has included: an online survey open to members of the public and to individuals completing it on behalf of an organisation or group; a meeting with councillors (via Microsoft Teams); and the issuing of direct invitations to submit feedback by email to over one hundred primary stakeholders.

### 5.1 Online Public Consultation Survey

#### 5.1.1 Introduction

An online public consultation survey was launched on the on Kildare County Council's Consultation Portal on the 12<sup>th</sup> of June 2020 and remained open for five weeks. The purpose of the online public consultation was to hear from people who live, work, shop, spend leisure time or attend education within the Kildare Town Transport Strategy study area to understand current issues related to transport and obtain views on potential solutions. The survey was promoted by Kildare County Council through social media, local newspapers and the council's own website.

In total, 190 respondents completed the survey, which included five respondents who said that they were representing an organisation or group. These responses on behalf of organisations are analysed separately to those from individuals in the sections below. Skip logic was designed into the survey to ensure that respondents were only asked questions which would be relevant to them based on their previous responses. Respondents representing an organisation or group were not asked questions relating to their individual circumstances or travel behaviour.

As the Covid-19 pandemic was ongoing at the time of the survey and significantly impacting travel behaviour, all respondents were asked to provide feedback which reflected their travel patterns and issues prior to the start of the Covid-19 crisis. With the exception of individuals responding on behalf of an organisation or group, the survey was conducted anonymously, and no personal data was collected from respondents. Before commencing the survey, respondents were also notified that their comments may be published.

#### 5.1.2 Respondent Characteristics

A significant majority of all individual respondents (83%) said they live within the study area, while just 21% work within the study area, which is reflective of the commuter nature of Kildare Town. Fifteen percent of respondents said they live elsewhere in Kildare, while 2 percent live in Laois.

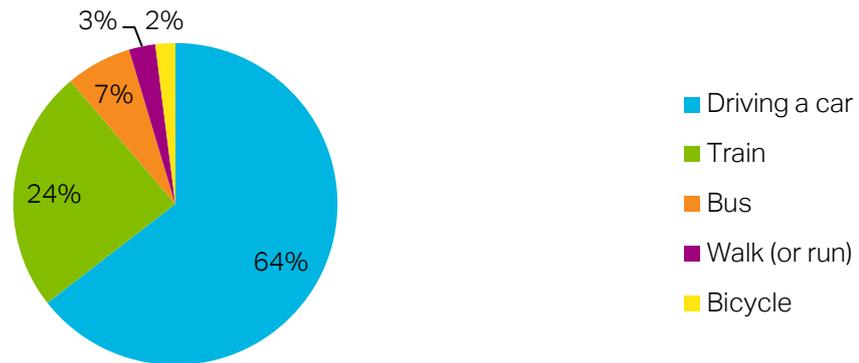
Approximately four fifths (79%) of the survey sample work, while ten percent are carers or stay at home parents. Retired people are underrepresented in the survey sample, making up just four percent of respondents, as compared to 11 percent of the population of the Kildare Electoral District based on Census 2016 data.

Only 63% of respondents selected that they shop or spend leisure time within the study area when asked this is as part of a multiple choice question where multiple answers could be selected. However, respondents were separately asked where they do the largest amount of their grocery shopping. Ninety-one percent do their grocery shopping in Kildare town, while eight percent do their grocery shopping in Newbridge. One percent do their grocery shopping elsewhere in Kildare and outside Kildare.

#### 5.1.3 Modes Currently Used by Respondents

The survey asked respondents about the travel modes they currently use for both commuting trips (where applicable) and non-commuting trips to/from and within the study area. As shown in Figure 5.1, almost two thirds of respondents who are currently working or attending education usually travel by car for the longest part of their commute, while close to one third usually travel using public transport.

**What mode do you use for the longest part, by distance, of your usual journey to work or education?**



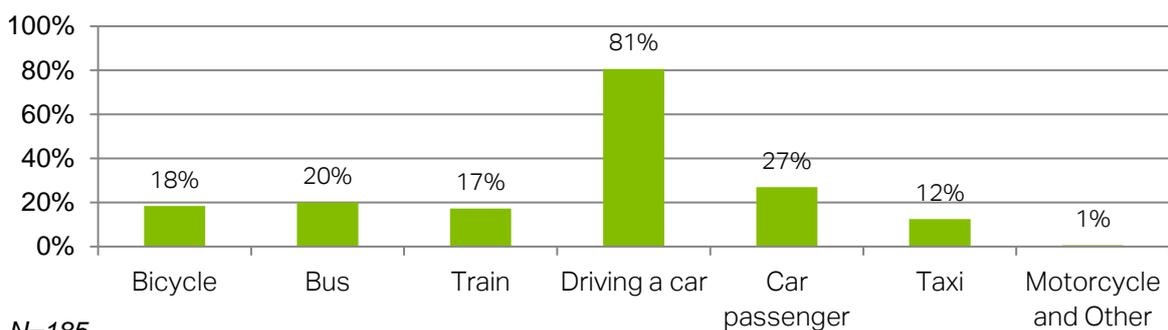
N=152

Figure 5.1: Respondents Main Commuting Modes

Respondents were also asked if they use more than one mode of travel as part of their usual journey to work or education. Approximately one quarter of respondents said they did use more than one mode, with the vast majority of these being people who commute by train. Of these train commuters, just under half (49%) said they walk as part of their usual commute, while 49% also drive. The next most commonly used additional modes among train commuters were Luas (43%), Bus (27%) and Bicycle (24%). The high proportion of train commuters who currently travel by car for part of their commute highlights the importance of improving connectivity to the train station by other modes.

Respondents were also asked how they travel for 'non-commuting' trips. 'Non-commuting' trips are all trips which are not for the purpose of travel to work or to education and could include, for example, trips for shopping or other personal business, visiting friends or family and trips to leisure activities or walking/cycling for leisure. Figure 5.2 shows the modes used for 'non-commuting' trips to or from the study area, which were defined as trips which cross the study area boundary, while Figure 5.3 shows the modes used for 'non-commuting' trips within the study area.

**Modes used by respondents for 'non-commuting' trips to/from the study area**



N=185

Figure 5.2: Modes used for 'Non-Commuting' Trips to/from the Study Area

**Modes used by respondents for 'non-commuting' trips within the study area**

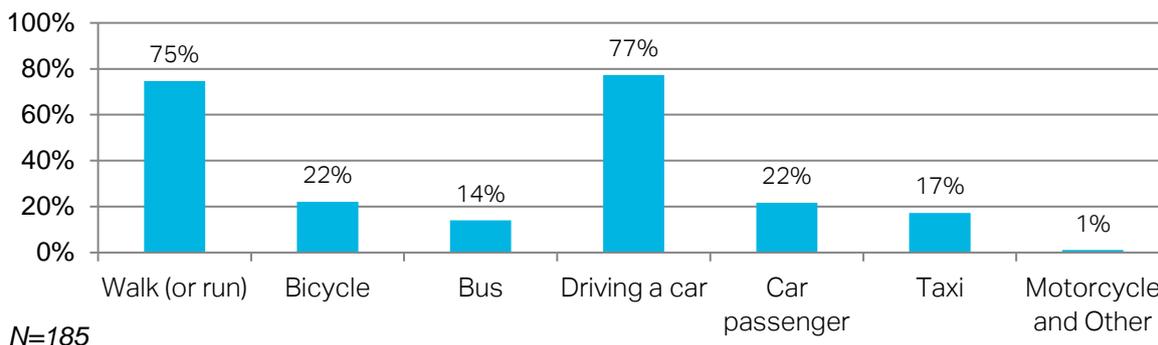


Figure 5.3: Modes used for 'Non-Commuting' Trips within the Study Area

5.1.4 Transport in Kildare Town

All respondents were asked to rate Kildare Town's existing transport infrastructure for each of the main modes of travel. The worst rated travel mode is cycling, with a combined 71% of respondents rating existing infrastructure for cycling as either poor or very poor. Infrastructure for bus travel is also rated relatively poor, with a combined 40% of respondents rating it as poor or very poor. The travel modes with the highest proportion of good and very good responses were train and driving a car, at 51% and 44% respectively.

**How would you rate Kildare Town's existing transport infrastructure for each of the following modes of travel?**

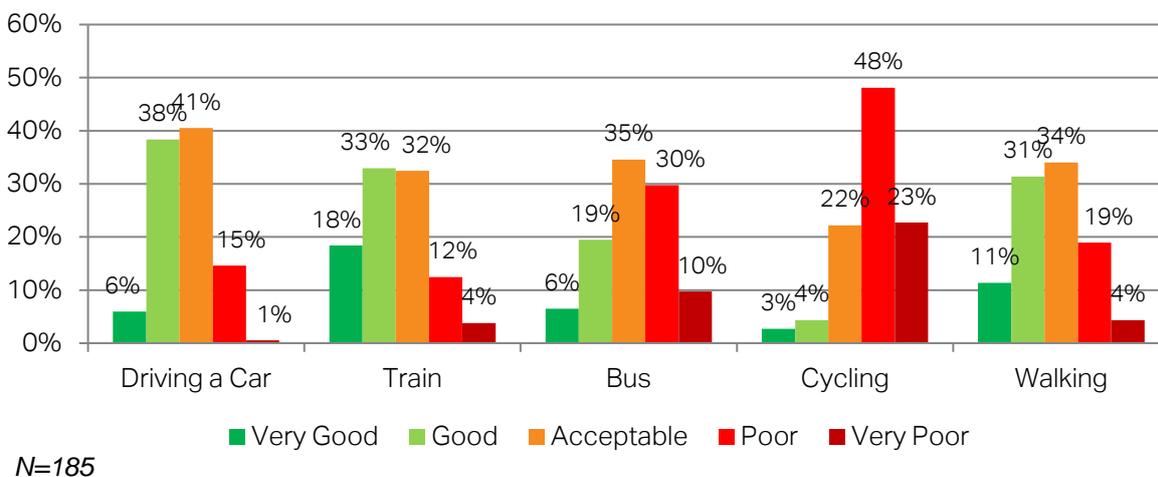


Figure 5.4: Rating of Kildare Town's Existing Transport Infrastructure

The ratings given by respondents to different transport modes have also been examined for the subset of respondents who use each mode as their main commuting mode as shown in Figure 5.5. Comparing the two sets of results shows that a higher proportion of respondents who commute by bus and by bike rate the infrastructure for these modes as poor or very poor when compared to the sample overall. However, this difference may simply be a factor of the small number of bus and cycling commuters in the sample. Existing infrastructure for travelling by car and by train is rated similarly among the full sample and the groups of respondents who use these modes as their main commuting mode.

**How would you rate Kildare Town's existing transport infrastructure for each of the following modes of travel?  
(Respondents who use each mode as their main commuting mode)**

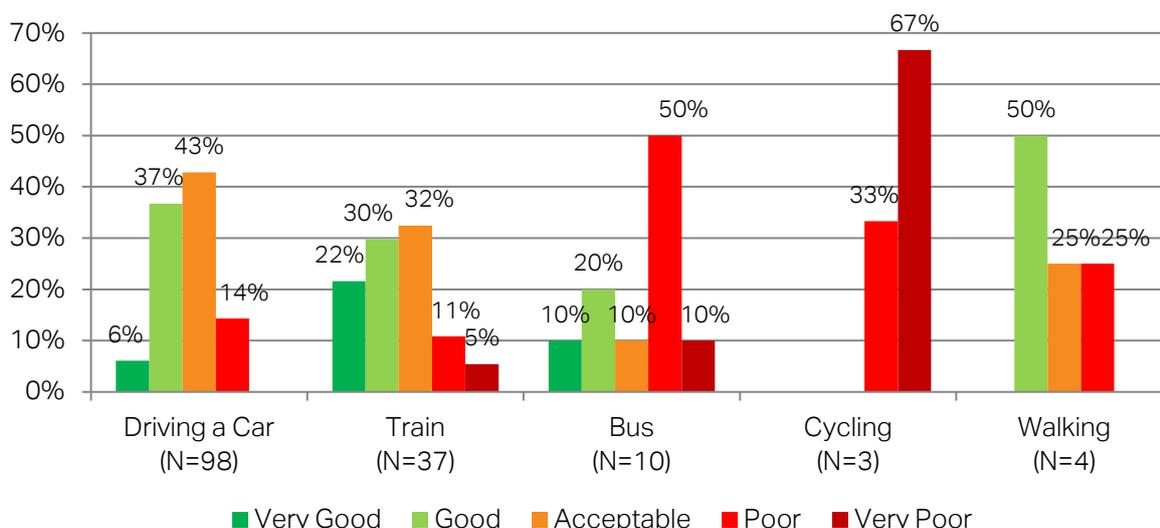


Figure 5.5: Rating of Kildare Town's Existing Transport Infrastructure by Mode Users (Usual Commute)

Respondents were asked to rate a wide selection of potential future changes to transport infrastructure from 'extremely important' to 'not at all important' as shown in Figure 5.6. Note that public transport related improvements were excluded from this question as these were covered in the following question. All potential changes were perceived to be either extremely important or very important by a significant proportion of respondents (between 34% and 89%). Improved public realm and walking/cycling environments in the town centre and improved walking and cycling links on main routes to the town centre were the options rated as extremely important or very important by the largest proportions of respondents.

The potential changes which were rated as least important included a reduction in on-street car parking in the town centre and the provision of real time car parking occupancy data. However, a majority of respondents still rated these potential measures to be at least 'slightly' important, with only one third rating reduced on-street car parking to be 'not at all important' and 17% rating real time car parking occupancy data as "not at all important".

Figure 5.7 illustrates how respondents rated the importance of different potential improvements to public transport. Almost all of the options were rated as either 'extremely important' or 'very important' by at least two thirds of respondents. The highest rated potential changes were: measures to reduce anti-social behaviour at bus stops; improved facilities at the train station; an extension of the 'short hop' rail fare zone; and changes which make it easier to transfer from public transport services available in Kildare Town to other public transport services.

**Which of the following transport improvements would you like to see implemented within Kildare Town?**

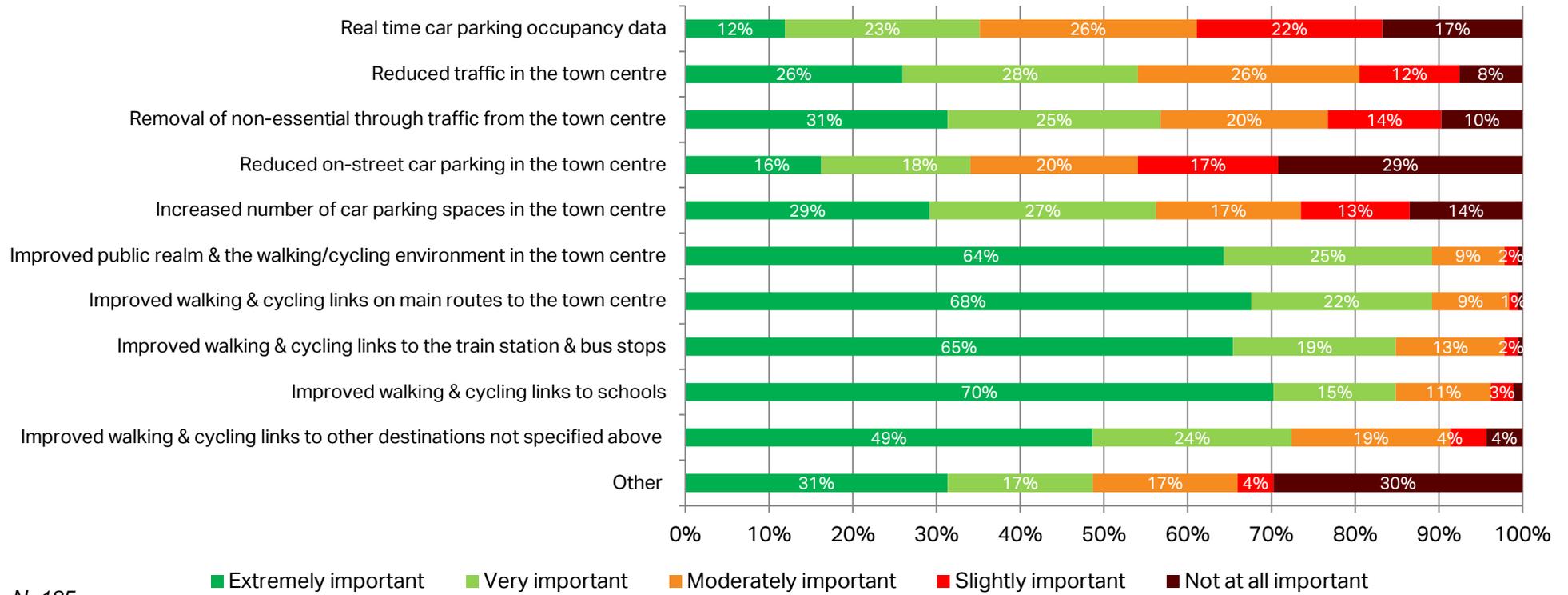


Figure 5.6: Importance of Different Potential Transport Improvements (within Kildare Town) to Respondents

### How important are the following public transport improvements to you?

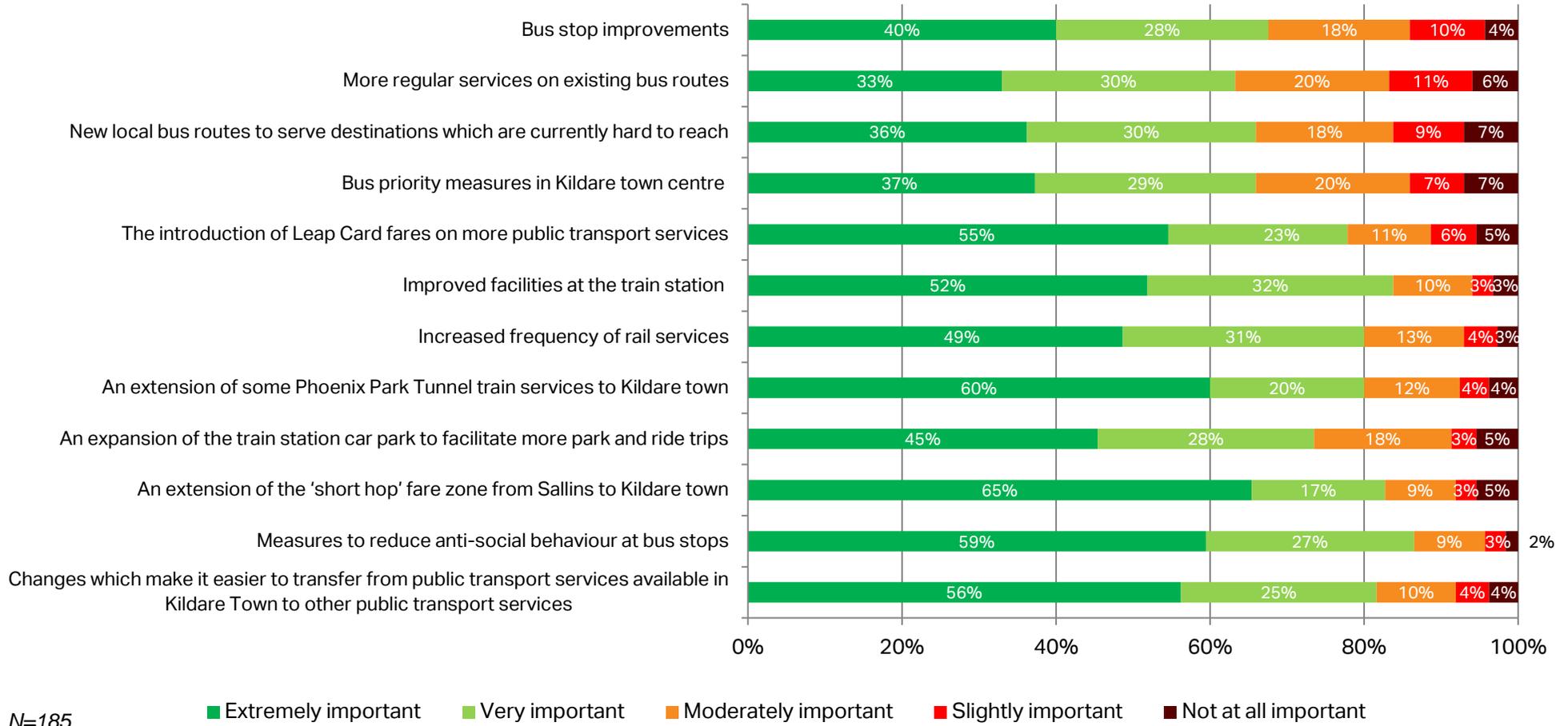


Figure 5.7: Importance of Different Potential Public Transport Improvements to Respondents

### 5.1.5 School Travel

There is potential for the Kildare Town Transport Strategy to reduce car-based trips during peak hours by making it easier for more school pupils to travel to school by active modes as well as by bus. As many trips to school are relatively short, this section of the survey focused on understand existing uptake of active travel modes for school trips, perceptions of barriers to active travel to school and the potential changes which would be most likely to encourage respondents to allow their children to use active travel modes. All respondents who said they were a parent or guardian of a child attending either primary or secondary school in Kildare Town were asked these questions. This includes 25 respondents with children within both age groups; 45 respondents with children attending primary school; and 18 respondents with children attending secondary school.

As shown in Figure 5.8, just over one fifth of parents/guardians of primary school aged children said their primary school aged children travel to school using active modes every day, as compared to 37% of parents/guardians of secondary school aged children. More than 40% of parents/guardians of children in both groups said that their children rarely or never use active travel modes to travel to school. This suggests that there is likely to be significant potential for change.

Many children do not travel the same way every day, with a significant minority of respondents with children in each age group saying that their children use active travel modes one or two times a week. This variation is not captured through the Census, which only collects data on pupils' 'usual' travel modes to education.

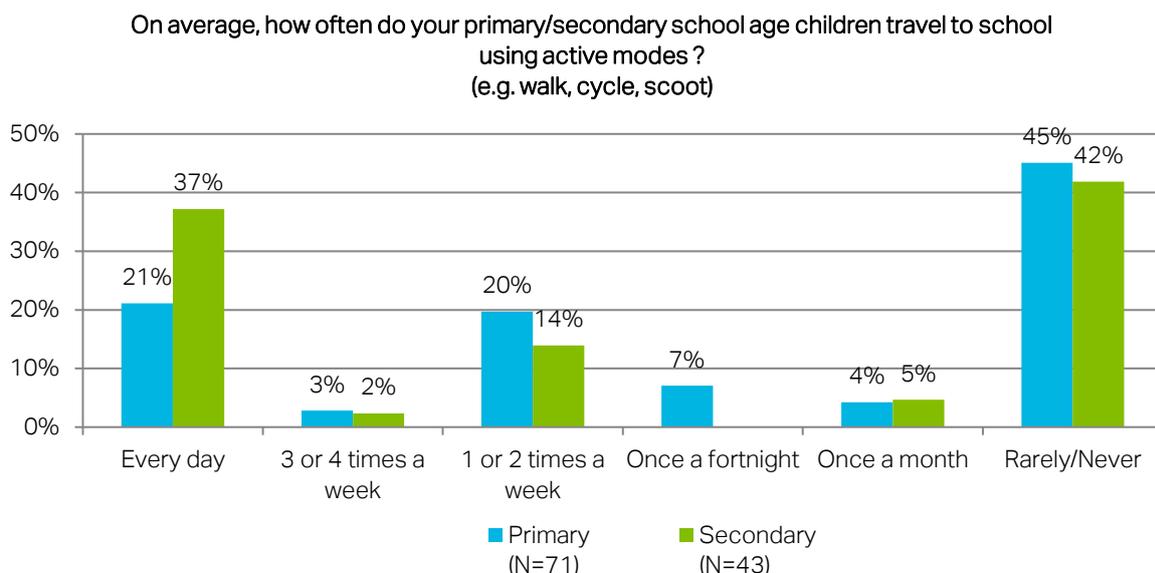


Figure 5.8: Frequency of using Active Travel Modes for School Trips

Figure 5.9 illustrates how respondents' who are parents or guardians of a child in school in Kildare Town perceive different barriers to active travel to school. As shown, the barriers which most stand out include walking distance, lack of cycle facilities, lack of time and road safety/traffic risk.

Eight percent of respondents selected 'other' as a major barrier. A number of respondents who didn't select 'other' also left a comment. Most of the 13 comments respondents made in connection with their responses to this question (separate to other open comment questions) focus on aspects of current road infrastructure provision or driver behaviour which in their view make active travel difficult or dangerous. However a few comments highlight issues not covered by any of the specific options within Figure 5.9 including dirt and animal waste on walkways, heavy schoolbags, a lack of parking to facilitate 'park and walk' and lack of interest among children.

**Barriers to active travel to school as perceived by respondents who have children attending primary or secondary school in Kildare Town**

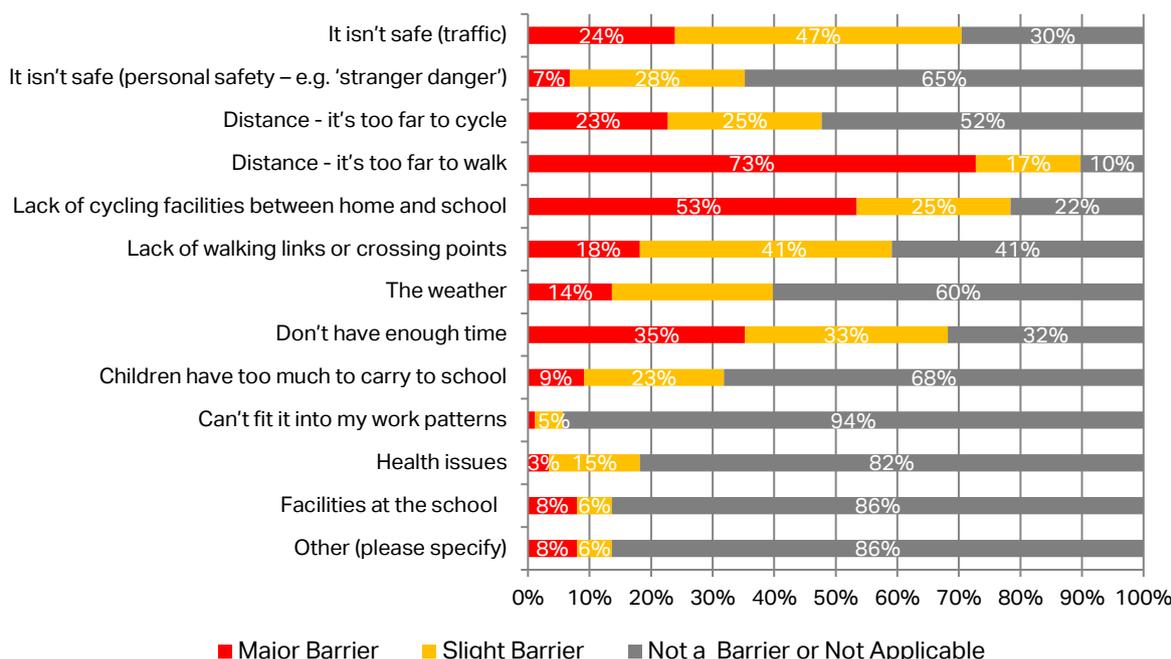


Figure 5.9: Barriers to Active Travel to School

Figure 5.10 illustrates how respondents' who are parents or guardians of a child in school in Kildare Town rate potential changes aimed at encouraging more active travel to school from 'important' to 'not important'. Unsurprisingly considering the responses to the previous question, the potential changes which received the highest number of 'important' ratings included 'safer cycle routes', 'safer walking routes' and 'slower traffic speeds near school'.

**How important would the following factors be in encouraging you to allow your child/children to use or continue to use active travel modes to travel to school?**

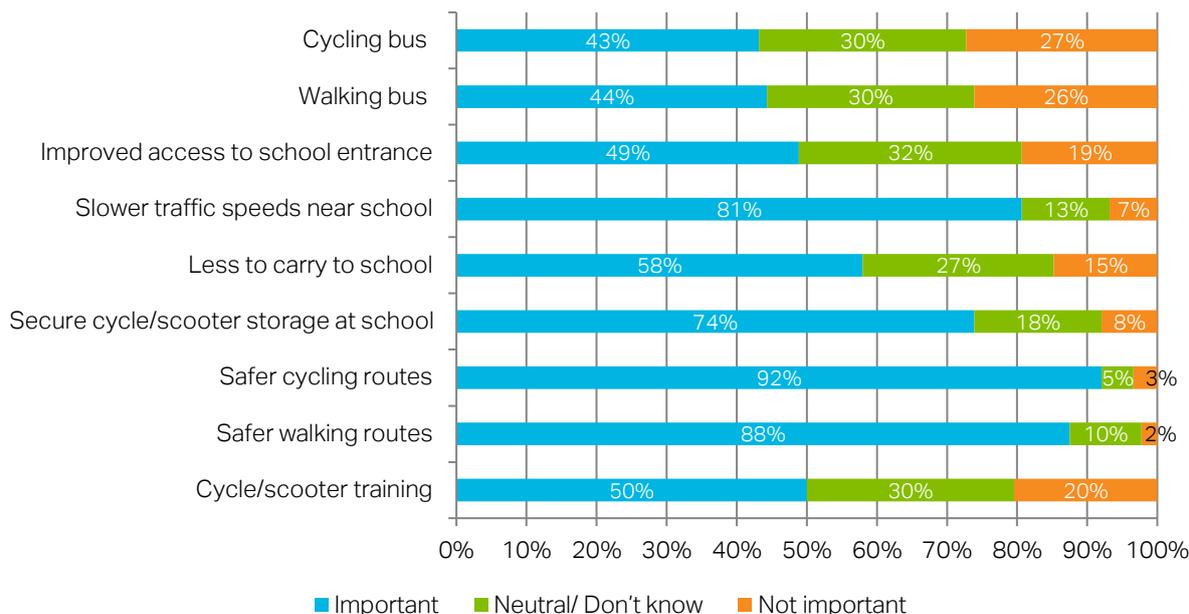


Figure 5.10: Encouraging Factors for Active Travel to School

### 5.1.6 Additional Comments

There were a number of questions in the survey where respondents had the opportunity to provide an 'open' comment or further detail related to an option they selected in a multiple choice question. An open comment box was provided with the two questions where respondents were asked which transport improvements they would like to see implemented within Kildare Town and how important different potential public transport improvements were to them. A separate question at the end of the survey also invited any additional comments which respondents felt were relevant to inform the Kildare Town Transport Strategy. The latter question asked respondents to be as specific as possible in their comments. As there is substantial overlap between responses to these three questions, comments from all three were analysed together.

Over 132 individual respondents provided a comment in response to at least one of the questions, indicating the overall high level of interest amongst respondents in improving access for all transport modes within the study area. These open comments were then coded into fifteen main categories as outlined below. Comments from each individual respondent were coded to as many of these themes as were applicable. Table 5.1 below summarises the number of respondents who made a comment related to each theme.

Open Comment Themes	Number of Respondents
Cycling	47
Walking	46
Bus (services & fares)	38
Bus infrastructure	12
Train (services & fares)	31
Train station car parking or cycle parking	9
School drop off issues	16
Other parking issues	13
Public realm and town centre traffic management/reduction	16
Road safety issues (not specific to walking/cycling infrastructure - e.g. driver behaviour, traffic calming, HGV safety)	19
Road network changes for vehicles (new links, junction upgrades etc.)	11
Public lighting	8
Other	25

*Table 5.1: Number of Respondents Mentioning Key Themes in Open Comments*

Some comments provided by respondents were quite general while other respondents provided some very specific comments in relation to existing transport issues they encounter within the study area, and/or their personal suggestions for how these issues should be addressed. The main issues raised by respondents are summarised below.

#### Cycling

- There is a very significant demand for safe cycling facilities throughout the study area.
- Cycling at present is considered in general to be unsafe throughout the study area. Some specific locations mentioned which respondents perceive to be dangerous for cycling include: the Rathbride Road, particularly at the bridge over the rail line where signal phasing means there is insufficient time for cyclists to cross the bridge; Rathbride Demesne connecting the Rathbride Road and the Dunmurray Road; Melitta Road; the area around St. Brigid's Primary School; the Green Road and Old Road (close to Round Towers GAA club).

- Numerous respondents would like to see safe cycling connections to the Curragh, while a smaller number mentioned they would like a cycle route to the National Stud.
- Numerous respondents mentioned the need for safe cycling connections to schools, particularly the secondary school (KTCS).
- One respondent mentioned that in their experience most traffic lights in the town do not recognise that there is a cyclist waiting and do not change in their favour.
- One respondent mentioned that there is a problem with drivers dangerously overtaking children when they are cycling, while many mentioned that their children can only cycle on the footpath at present.

### Walking

- There were many comments about the condition of footpaths in the town with regard to width, surface quality and how this impacts accessibility, including for people with disabilities and people pushing a buggy.
- Respondents would like to see footpaths provided at various locations on the outskirts of the town such as near Newtown Cross on the Nurney Road and on the Kildangan Road. These connections are considered important to facilitate workers walking to the nursing home and children going to school.
- Respondents would like to see gaps in existing footpaths addressed such as on Pigeon Lane and on Rathbride Road.
- There is a strong demand for improved walking links to the Curragh.
- Driving behaviour creates a barrier to walking, including parking on footpaths and double yellow lines and driving too fast.

### Bus (services & fares)

- The reliability and capacity of the existing bus services is considered to be a problem, with multiple respondents stating that they or members of their family often cannot get a place on a bus because it is full or that buses are often late.
- The cost of the 126 bus route is considered to be prohibitive by some as it can mean it is cheaper to drive and some respondents would like to see more integration supported by LEAP card features which are available in Dublin, such as fare capping and transfer discount.
- There is some demand for a bus service which connects to the train station.
- There is some demand for a bus service to Kilcullen.
- One respondent highlighted the need for a bus service for children attending school at the Curragh Camp.
- One respondent feels strongly that timetable changes introduced during 2019 when commuter services transitioned from Bus Éireann to GoAhead has resulted in diminished connectivity to Kildare Town.

### Bus infrastructure

- There is demand for improved shelter, seating and Real Time Information at bus stops generally.
- There is demand for additional bus stops on the Dublin Road (R445) at Ruanbeg or Heffernan Tyres and on the Monasterevin Road at Cherryville Cross.
- There is demand for a designated school bus stop for Newtown Cross with safe waiting facilities and shelter.
- There is demand for a designated school bus stop for Newtown Cross with safe waiting facilities and shelter for children travelling to the Gael Colaiste in Naas.
- There is a lack of information on bus services which some respondents feel should be advertised better. This is particularly the case with regard to Local Link buses.

### Train (services & fares)

- There is significant demand for an extension of the short hop zone to Kildare, with respondents feeling that current prices for travel from Kildare Town are very unfair in comparison to fares applicable from Maynooth and Sallins. A number of comments refer to the fact that it is cheaper to drive to Dublin and that many people drive for this reason despite it being slower than the train.
- There is demand for a tax saver ticket that allows commuters to work a flexible number of days in the week, such as a 10 journey ticket.
- There is a demand for services using the Phoenix Park tunnel to be extended to Kildare with some respondents stating that they or a family member currently drive to Newbridge to access these services.
- Overcrowding is an issue which is perceived to be exacerbated by the reservation system on mainline trains such as those going to Waterford or Limerick. It was suggested that reserved seats on those trains should be curtailed or eliminated at peak times as it leads to tension and confusion.

### Train station car parking or cycle parking

- Car parking at the train station is perceived by some respondents to be expensive considering the price of train tickets.
- There is some demand for more car parking at the station, with one respondent suggesting a multi-story car park is required.
- There is a problem with commuters parking cars in residential areas and some demand for measures to address this.
- There is a need for a significantly increased quantity of cycle parking at the train station and also more security measures.

### School drop off issues

- A large number of respondents feel strongly that improvements to drop off arrangements at St Brigid's Primary School are required with the current situation described by many as 'dangerous', 'stressful', 'a nightmare'; 'chaos', 'appalling' etc.
- School run related traffic congestion and the blocking of footpaths close to the Gaelscoil and Educate Together school campus was also mentioned by one respondent.

### Other parking issues

- There is demand for additional parking spaces outside of the town centre but within walking distance of the town centre.
- There is demand for increased enforcement of parking offences such as parking on footpaths and double yellow lines, which is perceived to contribute to congestion in a number of locations in addition to creating safety issues for people walking and cycling.
- There is demand for measures to address commuter parking in inappropriate areas.

### Public realm and town centre traffic management/reduction

- There is support for measures to reduce traffic in the town centre in order to increase the space available for walking and social interaction and to improve the public realm.
- There is some support for diverting heavy vehicles such as HGVs and buses away from the town centre.
- Some respondents feel that there are too many traffic lights in the town centre and/or an excessive level of signs and street clutter.

### Road safety issues (not specific to walking/cycling infrastructure - e.g. driver behaviour, traffic calming, HGV safety)

- There are road safety concerns for horse riding on the South Green Road and Green Road due to increased traffic volumes and speeds connected to a recently constructed housing estate and road improvements. There have also been incidents with cyclists travelling too fast around horses.
- Sightlines and traffic speed are a problem exiting Assumpta Villas onto Melitta Road.
- There is a suggestion that road markings need to be improved at the junction of Fairview Cottages and Station Road.
- Drivers parking on footpaths is perceived to be a problem at numerous locations throughout the study area.
- A number of respondents suggest speed reduction measures are required on main roads while one would like to see a 30km/h limit introduced in built-up areas.
- One respondent believes there is a need for more enforcement of traffic going through red lights.

### Road network changes for vehicles (new links, junction upgrades etc.)

- A number of respondents mentioned the need for the completion of the planned road link through Magee Barracks.
- One respondent would like to see Newtown Cross junction upgraded to a roundabout or traffic lights.
- There is concern that road infrastructure planned as part of the planning permissions granted in the South Green area will be inadequate to cater for anticipated increases in traffic volumes.
- There is demand to upgrade the railway bridge on Station Road.

### Public lighting

- There is demand for improved lighting throughout the study area to facilitate walking and running for transport but also for recreation.
- Some specific locations where respondents feel lighting upgrades are required include: Tully Road; St. Bridget's Well Road; Nurney Road; between the train station and the town centre; and laneways close to St. Brigid's Cathedral.

### Other

- A number of respondents are concerned about the planning of recent and ongoing residential development and the importance of ensuring suitable transport infrastructure and amenities are in place before developments are built.
- One respondent feels that a lack of community facilities in the town discourages people from using the town and that this combined with the commuter nature of the town is a barrier to creating a vibrant community.
- One respondent feels that public liaison and engagement with regard to new developments and infrastructure projects needs to be improved.
- One respondent is concerned about anti-social behaviour on public transport while another highlights it as a barrier to walking between car parks and the town centre.
- One respondent is concerned about the design of recently undertaken path and road improvements in the town and feels these contribute to congestion.

## 5.2 Input from Stakeholders

The following sections summarise feedback received from Councillors and from other stakeholders on the transport issues which they wished to see considered as part of the development of the Transport Strategy.

### 5.2.1 Councillor Meeting

A briefing for Councillors and subsequent discussion in relation to the Transport Strategy was held on the 1<sup>st</sup> of July 2020 via Microsoft Teams. This was attended by eight Councillors representing the Kildare and Newbridge Local Electoral Areas in addition to staff from Kildare County Council and AECOM involved in the preparation of the Transport Strategy. The main issues raised by Councillors are summarised below.

- The need for improvements to footpaths and for cycle facilities, including the need to prioritise safety for children when designing cycle facilities.
- A suggestion that cycle facilities be considered along the R445 as far as Newbridge.
- The difficulty of delivering cycling infrastructure due to the width of streets in the town centre and the potential to implement one-way systems in the town in order to create space for footpaths and cycle facilities.
- Concern about whether children would cycle to school even if the infrastructure was put in place – a concern about the perception that cycling is not cool.
- The need for a pedestrian link to the Curragh along the R413 Melitta Road which could potentially form part of a Slí na Sláinte walking route.
- The importance of securing a pedestrian link from Kildare Village to the Town Centre.
- The potential benefits of a local bus service for children living in estates far from their school and for older members of the community.
- The need for bus shelters in rural areas surrounding the town to encourage children to get the bus to school in Kildare Town.
- The need for more bus stops and the potential for an orbital bus route.
- The need for improved facilities at the train station – e.g. lift and shelter, but also the need to prioritise requests to Irish Rail rather than asking for a long shopping list.
- Parking issues in the town centre.
- The importance of the planned link within the Magee Barracks development.
- Vehicular access to the train station, including whether a one-way loop could be introduced around the narrow existing road bridges and whether the train station could be moved to the former Black and Decker site (to the east of the current station).
- A suggestion that Newtown junction needs to be signalised for safety reasons.
- Safety issues at Moore's Bridge behind the Curragh Racecourse and the possible need to look at moving HGV routes.
- A suggestion that junction improvements should be implemented in a consistent way to create a pattern which is easier for people to navigate.
- A suggestion that there are too many traffic signals in the town centre.
- Concerns about the cost of some of the potential strategy objectives and whether inexpensive and quick measures such as improvements for walking and cycling can be prioritised.
- Suggestions relating to traffic management issues at particular locations such as a yellow box at the junction of Pigeon Lane and Monasterevin Road, a potential turning lane from the Monasterevin Road towards Kildare Village and/or reorganisation of traffic light poles.

- The need to consider Kildare Town in its wider context within South Kildare and close to the Offaly and Laois border and to consider links to towns such as Suncroft and Rathangan.
- Concern that asking too much of potential developers in terms of new infrastructure requirements may hinder investment in the town.
- The need for more clarity around who can use the existing bus which links Kildare Village to the National Stud.
- Interest among people living in the hinterlands of the town for a Park & Ride facility on the outskirts of the town so that they can use the town's amenities.
- The potential for an encased walkway along the train line similar to a facility in Galway.
- Queries in relation to the traffic modelling being undertaken as part of the Transport Strategy.

### 5.2.2 Written Responses from Stakeholders

More than one hundred primary stakeholders with a possible interest in the Transport Strategy were identified prior to the consultation period. These included: public representatives; schools; staff based in other departments of Kildare County Council; bus operators; Irish Rail; state agencies and government departments; utility companies; large employers and retail groups; sports clubs; and other local community organisations and service providers. All identified primary stakeholders were contacted by email or phone in June and invited to submit feedback by email to help inform the preparation of the Transport Strategy. Eight of these organisations subsequently submitted feedback by email. In addition, another five organisations completed the online public consultation survey, including three which had been directly contacted as primary stakeholders. All comments received from organisations through either of these channels are summarised.

#### National Transport Authority (NTA)

- The preparation of a Kildare Transport Strategy will provide an opportunity to create a holistic transport approach to support the proper planning and sustainable development of Kildare.
- There is a requirement to ensure future growth areas are located in close proximity to public transport services which will in turn support the continued improvement of these services.
- Travel patterns between Kildare, Naas and Newbridge and opportunities to serve them by sustainable modes should be considered.
- The preparation of the Kildare Transport Strategy should be guided by the Transport Strategy for the Greater Dublin Area 2016-2035 and the Local Planning Principles contained within. These include:
  - Planning at the local level should promote walking, cycling and public transport by maximising the number of people living within walking and cycling distance of their neighbourhood or district centres, public transport services and other services;
  - New development areas should be fully permeable for walking and cycling and walking and cycling facilities should be implemented retrospectively in existing neighbourhoods to give a competitive advantage to these modes;
  - Where possible, developments should provide for filtered permeability; and
  - Proposals for right of way extinguishments should only be considered where these do not result in more circuitous trips for local residents to public transport or local destinations.
- The continued provision for and enhancement of a bus network to serve Kildare Town and provide connections to neighbouring towns should be a central ambition of the Transport Strategy and bus priority measures should be provided for. Early engagement with the NTA regarding bus network proposals is encouraged.
- The Strategy should assess current bus stop locations in terms of ease of access from surrounding neighbourhoods and should also assess whether there is a requirement for an interchange location or an area which provides for enhanced facilities such as shelters.

- The Strategy should appraise permeability within the town and present proposals to enhance permeability within the town to key attractors.
- Current walking and cycling routes available to the town centre within a 1-3km radius should be assessed. It is important to create a network of routes rather than follow a piecemeal approach to infrastructure provision. This includes creating attractive walking and cycling facilities within the town centre itself.
- The opportunity provided by Magee Barracks redevelopment site to enhance permeability and create attractive walking and cycling routes is noted. All links to surrounding areas should be provided from the outset and should be cycle friendly, without obstructive gates or barriers.
- A comprehensive cycle network must be created which allows people to travel to the main trip attractors such as shops, schools, employment, the hospital and the train station. It is critical that the cycle network includes the central area of Kildare and that the infrastructure will bring people safely to their destination, not just the edge of the centre.

### Transport Infrastructure Ireland (TII)

- The N/M7 is identified as part of the core Trans-European Transport Networks (TEN-T). The TEN-T regulations define the objective of increasing the benefits for road users by ensuring safe, secure and high-quality standards for road users and freight transport to achieve integrated and intermodal long-distance travel routes across Europe.
- The N/M7 and its associated junctions represent one of the most important national routes in the country. TII therefore wishes to ensure in so far as practicable, the preservation of the efficiency, capacity and safety of national roads in this area.
- In the vicinity of the M7 and Junction 13 Kildare Town, Traffic and Transport Assessments supporting planning applications granted planning permission south of M7 Junction 13 have identified future year capacity constraints at the junction of the M7 and R-415. It is critical that the future land use planning and transportation framework for Kildare Town responds to this constraint by developing a combined strategy that safeguards the strategic function of the M7 and associated junctions, including identifying appropriate mitigation as necessary.
- The Transport Strategy should inform the future Local Area Plan and be prepared on the basis of an evidence-based area transport assessment, in accordance with the requirements of the Department of Environment, Community and Local Government's (DoECLG's) Spatial Planning and National Roads Guidelines.
- The development plan principles promoted in the Spatial Planning and National Roads Guidelines require that where a development plan or local area plan proposes development to take place on zoned lands adjacent to national roads, which could affect the operation and capacity of such roads, the planning authority must prepare its plans in such a way that demonstrates that such roads can continue to perform their strategic transport function into the future.
- The Kildare Town Transport Strategy, in tandem with the future Local Area Plan, should be informed by an Evidence Based Area Plan, linked to a clear phasing and implementation plan, to ensure required infrastructure is provided in a co-ordinated way to support development objectives, safeguard the strategic function of the M7 and associated Junction 13, and align with the provisions of the DoECLG's Spatial Planning and National Roads Guidelines (2012).
- Consideration should be given to including the requirements of Chapter 3 of the DoECLG's Spatial Planning and National Roads Guidelines, into the Kildare Town Transport Strategy, concerning specific objectives relating to Traffic and Transport Assessment, Road Safety Audit, Environmental Noise Regulations and Signage, etc.
- TII would also welcome that appropriate building set back requirements from the M7, included in the Draft Kildare Town Transport Strategy, reflect the Council's own Noise Plans.
- The M7 drainage regime should not be impacted nor affected by development proposals or objectives included in the Kildare Town Transport Strategy.

### Office of the Planning Regulator (OPR)

- The Transport Strategy is a non-statutory plan in terms of the Office's statutory role.
- Kildare Town is designated as Self-Sustaining Growth Town (Tier 2) in the revised County Settlement Hierarchy recently adopted as part of variation no. 1 to the Kildare County Development Plan. Self-Sustaining Growth Towns are '...Towns with a moderate level of jobs and services – includes sub-county market towns and commuter towns with good transport links and capacity for continued commensurate growth to become more self-sustaining.'
- Kildare Town has a ratio of jobs to resident workers of 0.615 which is below the average of 0.86 for the Eastern and Midlands Region. The current ratio of jobs to resident workers will be an important issue to consider for the Transport Strategy and the forthcoming Local Area Plan.
- The policies, objectives and measures which emerge from the Kildare Town Transport Strategy should inform and be incorporated (as relevant) into the statutory Local Area Plan (LAP) for Kildare Town.
- One of the key principles in section 1.5 of the Spatial Planning and National Roads Guidelines for Planning Authorities 2012 is that development should be plan-led and the assessment of land use zoning objectives in LAPs needs to be mindful of the need to protect the strategic function of national roads.
- The preparation of the Strategy should ensure that there is adequate consultation with the transport agencies (TII and NTA in particular) and other key stakeholders.

### Iarnród Éireann (IÉ)

- IÉ is committed to providing a sustainable transport solution for all communities accessible to the rail network and will work with Kildare County Council and others to ensure the full potential of Kildare train station is realised.
- There has been an almost 50% increase in passenger trips from Kildare Station over the last five years
- Improved accessibility to Kildare Station is needed to facilitate continued growth of sustainable travel via the railway. IÉ therefore recommend that the Kildare Town Transport Strategy investigate six improvement options relating to the accessibility of the station and integration with the town and other modes. These include:
  - Dedicated cycle routes to the station and bicycle parking/storage at the station;
  - High quality walking routes to the station which are clearly demarked and have sufficient lighting, signage and priority at junctions;
  - Increased parking availability for the station as part of a complete car parking strategy for the town;
  - Improved bus interchange at the station or nearby;
  - Increased density of development close to Kildare Station (Compact Growth) using strategic land masses to the north-east and north-west of the station; and
  - Widening of bridges on either side of the station and Fair Green Road to alleviate congestion in the area of the station.
- In developing improvement options, the transport strategy should protect future expansion options for the railway itself and preferably implement measures to complement the eventual implementation of four-tracking.
- The central location of Kildare Station allows the transport strategy to delivery on multiple national strategic outcomes (NSOs) outlined in the National Planning Framework (NPF).
- The submission also outlines IÉ's investment priorities in Kildare County and beyond and their benefits.

### Irish Water (IW)

- With regard to Sustainable Urban Drainage, IW would like to see a reduction in stormwater runoff from roads and paved areas, no surface water discharge to existing foul/combined sewer networks and Blue / Green Infrastructure and SUDs to be promoted wherever possible.
- IW would like to be consulted on the impact of projects being carried out by Kildare County Council on existing IW assets. Early notification is requested to enable IW to plan works and minimise disruption to the public.

### Road Safety Authority (RSA)

- The aim of the RSA is to ensure that all road users develop safe behaviours and appropriate attitudes to the use of the roads. RSA's current policy is to deliver road user education and awareness in a cumulative approach up to third level.
- The RSA do not have the technical expertise to comment on specific transportation proposals but would be anxious that road safety underlie any proposals put forward within the plan.
- The requirement for appropriate infrastructure for all road users including vulnerable road users must be considered in any proposals put forward.
- Relevant actions contained in the Road Safety Strategy 2013-2020 should be incorporated into KCC's planning for the future. The RSA would also welcome a commitment that KCC will play an active part in the development of the next Road Safety Strategy and in delivering on actions in the future.

### Kildare County Council Heritage Officer

- There is a need to have regard to the historic street and road layout of Kildare Town in proposing any works.
- A number of relevant reports have been created for Kildare Town which should be referenced including: Historic Landscape Assessment; Kildare Architectural Conservation Area; and Kildare Walled Town Conservation Plan.

### Kildare Town Heritage Centre

- The town centre needs to be more pedestrian friendly to attract visitors and encourage dwell time.
- Many of the key historic assets of the town can't be fully appreciated due to the volume of unnecessary traffic driving through the town and associated noise. Pollution from through traffic also impacts air quality and the built heritage of the town. The town centre would benefit greatly by diverting the heavy through traffic and transferring the small number of car parking spaces to secondary streets.
- Tourism is considered to be the economic driver for the town under the County Development Plan. A Transport Strategy that provides good walking and cycling opportunities alongside a well-planned public transport system, car parking and free flowing road network is essential to achieving tourism growth in the future. Locals would also benefit from changes by having a higher quality of life and will be more inclined to spend in the town.

### St Brigid's Primary School

- A traffic management system is needed for St Brigid's Primary school as current traffic and parking around the school is extremely dangerous. There are over 1000 students attending the school with the vast majority travelling by car or by bus. There are no adequate pedestrian crossings on Academy Street or on Bride Street. There are no safe cycle facilities for children to cycle to the school.
- Cars should not be allowed near the school in the morning. There should be a designated drop off zone in Market Square or somewhere else. Many parents have raised their concerns about traffic and parking around the school with the Home School Community Liaison coordinator over the past number of years.

### Solas Bhríde Centre and Hermitages

- One of the biggest issues with transport in Kildare Town is a lack of feeder transport into the town centre. This is becoming more evident as the town expands as a number of new estates on Tully Road are not within walking distance of the town centre and shopping areas.
- Solas Bhríde bring numerous visitors to Kildare throughout the year and many of these visitors travel by public transport and are dropped some distance away. The centre would like to see a Local Link bus to serve the housing estates on the fringes of the town as well as destinations such as Solas Bhríde and St Brigid's Well.

### County Kildare Chamber

- The Chamber would like to see more public realm enhancements and improvements which would support the climate related objectives of the council. *(This was an answer to the question in the public consultation survey on transport related improvements respondents wish to see in Kildare Town).*

### Kildare Tourist Outlet Village (KTOV) / Value Retail Dublin Ltd.

- The KTOV is the largest employer in Kildare Town with approximately 1,000 existing jobs and a further 300 jobs to be created when Phase 3 (currently under construction) opens.
- The KTOV receives over 4 million visitors a year and employees and visitors travel by a number of different means including car, public transport (rail and bus), walking and cycling. Value Retail supports the implementation of a coherent Transport Strategy for the town.
- The KTOV has always sought to improve linkages with the town. As part of the amendment application on the Phase 3 permission, provision was made for the potential future delivery of a pedestrian and cyclist link from Phase 3 to Academy Street. Value Retail remains supportive of the integration of the KTOV with the Town Centre.
- Value Retail have always sought to provide for coherent and integrated parking solutions. Going forward, Value Retail will continue to provide innovative parking solutions at locations proximate to both the Town Centre and the KTOV which will ensure adequate parking for the KTOV and contribute to the vitality of the town centre.
- Enhanced rail services and links, bus connections and wayfinding measures would also help support the integration of the KTOV with the Town Centre.
- Value Retail and their consultants would be interested in engaging with Kildare County Council on a workshop basis to ensure knowledge sharing is achieved in the Council's development of a coherent transport solution for the future of Kildare Town.

### Makros Ltd.

- Walking and cycling links to existing and future public parks and sports facilities need to be considered.
- A local bus service within the town could have an immediate effect in reducing short, car-based trips. This could free up capacity in the roads network and facilitate an initial quantum of development in the short to medium term. The recently completed South Internal East West Link can facilitate a looped service to the town centre and towards schools, parks (existing and proposed), sports facilities (existing and proposed), the train station, other bus services and retail / commercial areas.
- The greenway delivery along Old Road and other pedestrian / cycle improvements are most likely to have an immediate effect in reducing short, car-based trips. These can be delivered relatively easily and may free up capacity in the roads network and facilitate an initial quantum of development in the short to medium term. The Old Road greenway would link the new cycle infrastructure constructed as part of the South Internal East West Link back to the town centre and towards schools, parks (existing and proposed), sports facilities (existing and proposed), the train station, bus services and retail / commercial areas.
- Other measures such as improved cycle facilities at the rail station together with rail service improvements should further reduce the dependency on cars.
- Critical north south road improvements can be delivered on a phased basis as demand requires.

### Kildare Town Community First Responders

- Kildare Town Community First Responders attend emergency calls to people suffering cardiac arrest, chest pain, stroke and choking. The quicker the team can get to a patient the better as it is often time critical.
- Parking within the town centre can be an issue when responding to emergency calls and as there are very few places to park.
- Sometimes the team can get stuck at a lot of traffic lights en-route which are slow to change, particularly at the bridge by the railway station. The traffic arounds schools is also particularly heavy and would have a huge impact on the time it would take to get to a patient.

## 6 Surveys

### 6.1 Covid-19 Disruption

Due to the disruption to normal travel behaviour caused by the Covid-19 pandemic, a number of planned traffic surveys have been cancelled, such as; queue length surveys, parking beat surveys and loading/illegal parking surveys.

Traffic and parking surveys were completed in Kildare Town in 2018 and this data is used in the baseline report to review the existing situation. In respect to public transport, walking and cycling infrastructure, these surveys have been completed remotely using online mapping and aerial photography sources. These surveys were verified via a site visit to Kildare Town which took place on 27/11/2020. Desk based surveys were updated to reflect the findings of the site visit.

### 6.2 Traffic Surveys

#### 6.2.1 ANPR Journey Times

Automatic Number Plate Recognition (ANPR) surveys were carried out on Thursday 18th October 2018 at 16 sites between 07:00-19:00. ANPR survey locations are shown on the map included in Figure 6.1. The ANPR survey only captures movements that have passed through the cordon and does not include trips that have an origin or destination within the cordon.

Appendix A provides the full matrix of O-D movements that have been captured by the ANPR during the AM and PM peaks.



Figure 6.1: Location of ANPR Surveys

Table 6.1 shows the twenty most popular movements recorded in the ANPR survey, this table includes the total number of vehicles to make this movement and the average time journey time between sites.

*Table 6.1: Top 20 movements recorded in the ANPR survey; total flow and average journey time*

Route (Movement by Site Numbers)					Total Flow	Average Journey Time
23	24				658	00:20:52
23	2				347	00:04:31
1	24				339	00:03:32
15	30				291	00:04:05
15	30	2			257	00:10:18
1	25	26	29	16	218	00:07:14
11	27				199	00:03:16
21	22				197	00:19:15
29	16				190	00:03:10
13	14				180	00:15:03
15	16				151	00:15:47
27	32				129	00:03:21
23	10				126	00:07:01
11	27	32	22		124	00:07:18
32	22				123	00:03:17
15	22				119	00:08:19
27	29				115	00:02:23
25	26	29	16		108	00:08:00
27	29	16			108	00:07:29
15	18				106	00:04:16

### 6.2.2 Automatic Traffic Counter Data

Automatic Traffic Count (ATC) data provides link counts over a longer time period. ATC data was collected over an entire week to capture the day-to-day variations that can occur. ATC data was collected at the 16 sites shown in Figure 6.2. The data collection for ATC sites 1-16 was undertaken over a 7 day period in October 2018.



Figure 6.2: Location of ATC Surveys

Table 6.2 shows the total flow at each of the ATC survey sites and ranks them from the busiest site to the quietest site. The ATC site with the largest total flow over the survey period is site 12, which is located just north of the M7 junction, while the quietest site is site 10 located on the Tully Road.

Table 6.2: Total Flow at Each ATC Site Ranked busiest to quietest

ATC Site	Total Flow	Rank
12	10,977	1th
14	10,347	2th
15	9,369	3th
13	8,746	4th
8	6,365	5th
1	6,177	6th
16	4,813	7th
5	4,115	8th
11	4,053	9th
6	3,971	10th
7	3,957	11th
10	2,259	12th
9	1,740	13th
2	1,449	14nd
3	546	15rd
4	475	16th

### 6.2.3 Junction Turning Counts

Junction Turning Counts (JTC) give an indication of the turning movements observed at key junctions in the network. These were commissioned at 23 locations, as shown in Figure 6.3, and were recorded in 15-minute intervals between 07:00-19:00 on Thursday 18th October 2018.

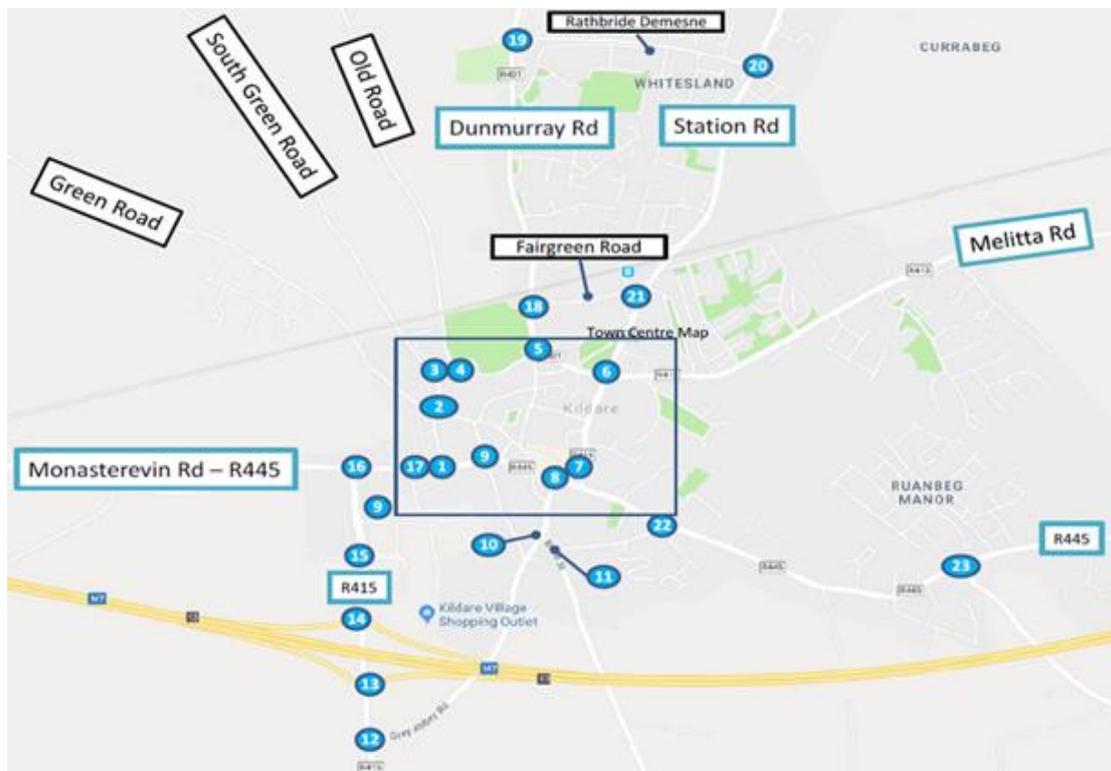


Figure 6.3 Location of Junction Turning Counts

Table 6.3 show the junctions surveyed in Kildare Town ranked from the busiest to the quietest based on the total flow recorded during the 12-hour survey period. The busiest junction recorded during the survey period was Junction 6 which is the intersection of the R415, R413 and 401. The quietest junction surveyed in Kildare Town was Junction 19 which is the junction of R401 and Rathbride Demesne.

Table 6.3: Junctions Ranked from Busiest to Quietest

JTC Site	Description	Total Flow	Rank
Junction 6	Station Road (R415)(NNE) / Melitta Road / Station Road (R415)(SSW) / Dunmurray Road (R401)	11,617	1st
Junction 8	Bride Street(NNE) / R445(ESE) / Bride Street(SSW) / R445(WNW)	11,287	2nd
Junction 17	R445(E) / Tesco Entrance / R445(W)	11,130	3rd
Junction 14	R415(N) / M7 (off-slip) / R415(S) / M7 (on-slip)	10,292	4th
Junction 22	Car Park Access / Magee Terrace / R445(ESE) / Meadow Road / R445(WNW)	10,081	5th
Junction 15	R415(NNW) / Kildare Village Outlet Shopping Access / R415(S) / Modus Link Access	10,062	6th
Junction 1	Pigeon Lane / Monasterevin Road (R445)(E) / Monasterevin Road (R445)(W)	10,013	7th
Junction 16	Monasterevin Road (R445)(E) / R415 / Monasterevin Road (R445)(W)	9,930	8th
Junction 9	White Abbey Road / Claregate Street / Academy Street / Monasterevin Road (R445)	9,342	9th
Junction 7	Bride Street(NE) / Market Square(SSE) / Bride Street(WSW) / Market Square(NW)	9,199	10th

JTC Site	Description	Total Flow	Rank
Junction 13	R415(N) / M7 (on-slip) / R415(S) / M7( off-slip)	8,513	11th
Junction 23	R445(ENE) / French Furze Road / R445(WSW)	7,464	12th
Junction 12	R415(N) / Grey Abbey Road / R415(S)	7,337	13th
Junction 5	Dunmurray Road (R401)(NNW) / Dunmurray Road (R401)(SE) / Old Road	6,885	14th
Junction 10	Bride Street(NNE) / Bride Street(SE) / Grey Abbey Road / Cleamore Road	6,552	15th
Junction 18	Dunmurrary Road(N) / Fair Green Road / Dunmurrary Road(S) / Unnamed Road	5,533	16th
Junction 2	Southgreen Road / Friary Road / Pigeon Lane / Green Road	4,858	17th
Junction 21	Station Road(NNE) / Station Road(SSW) / Fair Green Road	4,524	18th
Junction 20	Station Road(NNE) / Station Road(SSW) / Rathbride Demesne	4,303	19th
Junction 11	Tully Road(NW) / Car Park Access / Meadow Road / Tully Road(SSE)	4,198	20th
Junction 3	Southgreen Road / Bothairín na gCorp / Green Road / Car Park Access	4,080	21st
Junction 4	Site 04 - Old Road(NNW) / Old Road(E) / Bothairín na gCorp	3,725	22nd
Junction 19	Dunmurray Rise(NNE) / Rathbride Demesne / Dunmurray Rise(S) / Car Park Access	3,621	23rd

#### 6.2.4 Queue Length

Queue length surveys were undertaken in Kildare Town on Thursday 18th October 2018 between the hours of 07:00-19:00. A queue is defined as those vehicles at a junction which are stationary, or which have slowed down to walking speed or less. The queues are counted according to the weighting system defined in Table 6.4.

*Table 6.4: Vehicle Classification and Lengths*

Vehicle	Metres
PC, MC	2.5
LV	5
OGV1	10
OGV2	15
Bus	15

Queue Length surveys were undertaken at each of the junction identified for the Junction Turning Count (JTC) surveys. The JTC survey found that the following junctions were the three busiest in the Town

- Junction 6 at Station Road (R415) (NNE) / Melitta Road / Station Road (R415) (SSW) / Dunmurray Road (R401)
- Junction 8 at Bride Street (NNE) / R445(ESE) / Bride Street (SSW) / R445(WNW)
- Junction 17 at R445(E) / Tesco Entrance / R445(W)

The queue length surveys were examined at these junctions to see if queueing was an issue. The diagram of junction 6 is shown in Figure 6.2 and the queue length data is presented in Table 6.5.



Figure 6.4: Layout of Junction 6

The Queue Lengths at Junction 6 are longest in the morning with queueing occurring on all arms with between 08:00 and 09:25. The longest queues occur on Arm C: Station Road (R415) for traffic heading north with queues of 120 meters recorded.

Table 6.5: Queue Lengths at Junction 6

Arm A: Station Road (R415)		Arm B: Melitta Road		Arm C: Station Road (R415)		Arm D: Dunmurray Road (R401)	
Queue Length	Time	Queue Length	Time	Queue Length	Time	Queue Length	Time
70 m	08:00	80 m	08:25	120 m	09:25	50 m	08:40

Junction 8 was recorded as the second busiest junction in Kildare Town in the JTC survey, the diagram for Junction 8 is shown in Figure 6.5. The data for this junction is presented in Table 6.6.

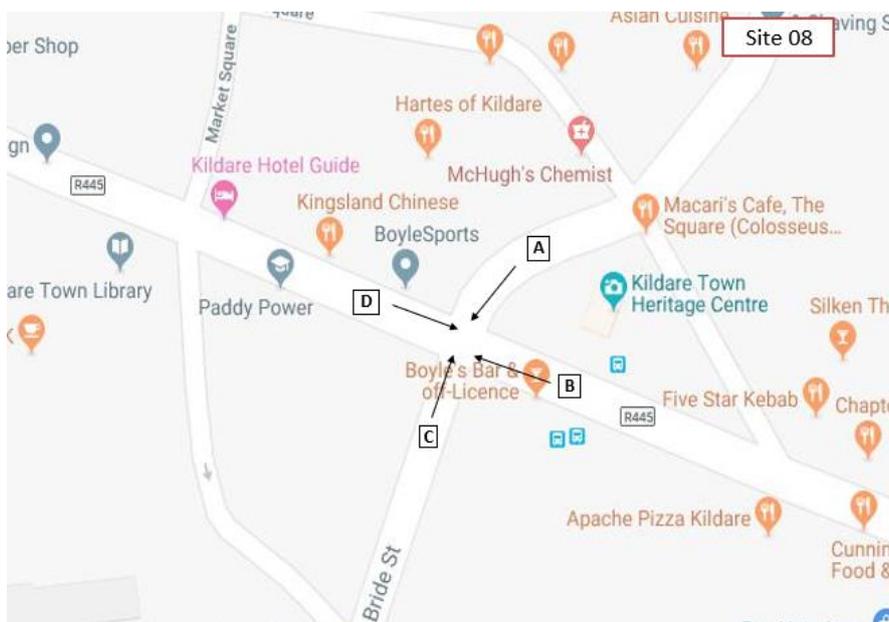


Figure 6.5: Layout of Junction 8

Queueing was recorded on each arm of the junction throughout the day. The longest queues were recorded on Arm D, which is on the R445, with queue lengths of 105 meters recorded.

Table 6.6 Queue Lengths at Junction 8

Arm A: Bride Street		Arm B: R445		Arm C: Bride Street		Arm D: R445	
Queue Length	Time	Queue Length	Time	Queue Length	Time	Queue Length	Time
40 m	08:45	70 m	16:20	65 m	08:55	105 m	09:00

Junction 17 was recorded as the third busiest junction in Kildare Town in the JTC survey. The diagram for Junction 17 is shown in Figure 6.7 and the data is presented in Table 6.7.



Figure 6.6: Layout of Junction 17

Queueing was recorded on each arm of the junction throughout the day. The longest queues were recorded on Arm A, which is on the R445, with queue lengths of 70 meters recorded.

Table 6.7: Queue Lengths at Junction 17

Arm A: R445		Arm B: Tesco Entrance				Arm C: R445			
Queue Length	Time	Queue Length	Time	Queue Length	Time	Queue Length	Time	Queue Length	Time
70 m	11:55	20 m	13:20	25 m	12:30	60 m	09:00	20 m	14:20

### 6.3 Parking Survey

#### 6.3.1 On-Street Parking Survey

A parking survey was conducted on October 18th, 2018 for the streets shown in Figure 6.7 between 07.00 and 19.00. The aim of the survey was to examine the availability and the occupancy of the on-street parking spaces in the town centre and the duration of stay for each vehicle.

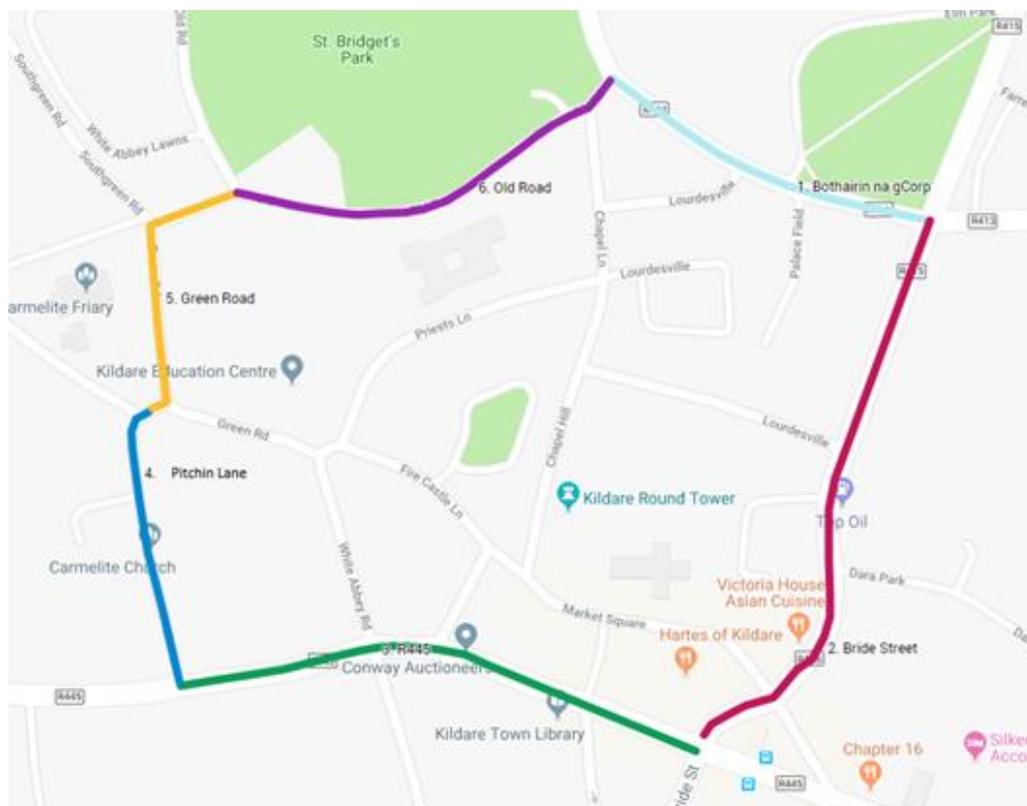


Figure 6.7 Streets Surveyed for parking survey

The survey examined the available parking spaces and the type of road markings present at the on-street parking locations. The different on-street parking categories identified in the survey are presented in Table 6.8.

Table 6.8 Types of On-Street Parking

Restriction	Abbreviation
Clearway	CW
Accessible parking space	D
Double Yellow line	DY
Loading Bay	LB
Pay & Display	PD
Single Broken Yellow	SBY
Single Yellow	SY
Unrestricted	UN

Table 6.9 shows the number of vehicles that parked in the spaces during the survey period and the type of parking occupied.

Numerous cars chose to park in unrestricted spaces, especially on the roads with a wide road width. The double yellow line and the single broken yellow line are additional unauthorised locations that were occupied on some roads.

*Table 6.9 Number of vehicles parked in different types of on-street parking during survey period*

Street Name	DY	UN	CW	LB	PD	D	SY	SBY	Total
Bothairín na gCorp	2	42	1	4	0	0	0	0	49
Bride Street	17	0	0	0	21	0	0	0	38
R445	34	0	4	3	25	1	3	0	70
Green Road	3	64	0	0	0	0	0	5	72
Old Road	0	100	0	0	0	0	0	0	100
Pitchin Lane	3	0	0	0	0	0	0	65	68
<b>TOTAL</b>	<b>59</b>	<b>206</b>	<b>5</b>	<b>7</b>	<b>46</b>	<b>1</b>	<b>3</b>	<b>70</b>	<b>397</b>

The survey analysis showed that the majority of the vehicles parked for less than 15 minutes and generally, very few vehicles stayed for more than 2-3 hours. The percentage occupancy of the Pay and Display parking spaces along the R445 and Bride Street was around 56%-76% between 10.00 and 18.00. Paid on-street parking spaces did not reach 100% occupancy, however parking of vehicles in unauthorized locations may partly explain this result.

### 6.3.2 Parking Signage Survey

The parking signage survey considered signage on the main approach roads and within the town centre. This was focused only on signage relating to public car parking spaces– i.e. those spaces which are within the control of Kildare County Council or Irish Rail. As shown in Figure 6.8, the survey revealed that there are a large number of signs related to parking throughout the central part of the study area. The majority of these signs highlight where pay & display parking is in operation. There is a limited amount of directional signage which reflects the fact that a high proportion of existing public car parking spaces within the study area are located on-street rather than in off-street car parks. The largest public off-street car park within the town centre is located on Bride Street. There are small 'P' signs immediately outside of this car park and to the north and south which direct motorists to this car park, but there may be scope to make this directional signage more prominent.

The large number of on-street car parking spaces designated within the town centre have resulted in a requirement for a significant quantity of accompanying signage. This is a contributor to street clutter which negatively impacts the public realm and may interfere with pedestrian movement. However, the recent removal of parking spaces on the west side of Market Square has significantly increased the space available to pedestrians in this area and allowed for a removal of car parking related signage, as well as facilitating outdoor dining.

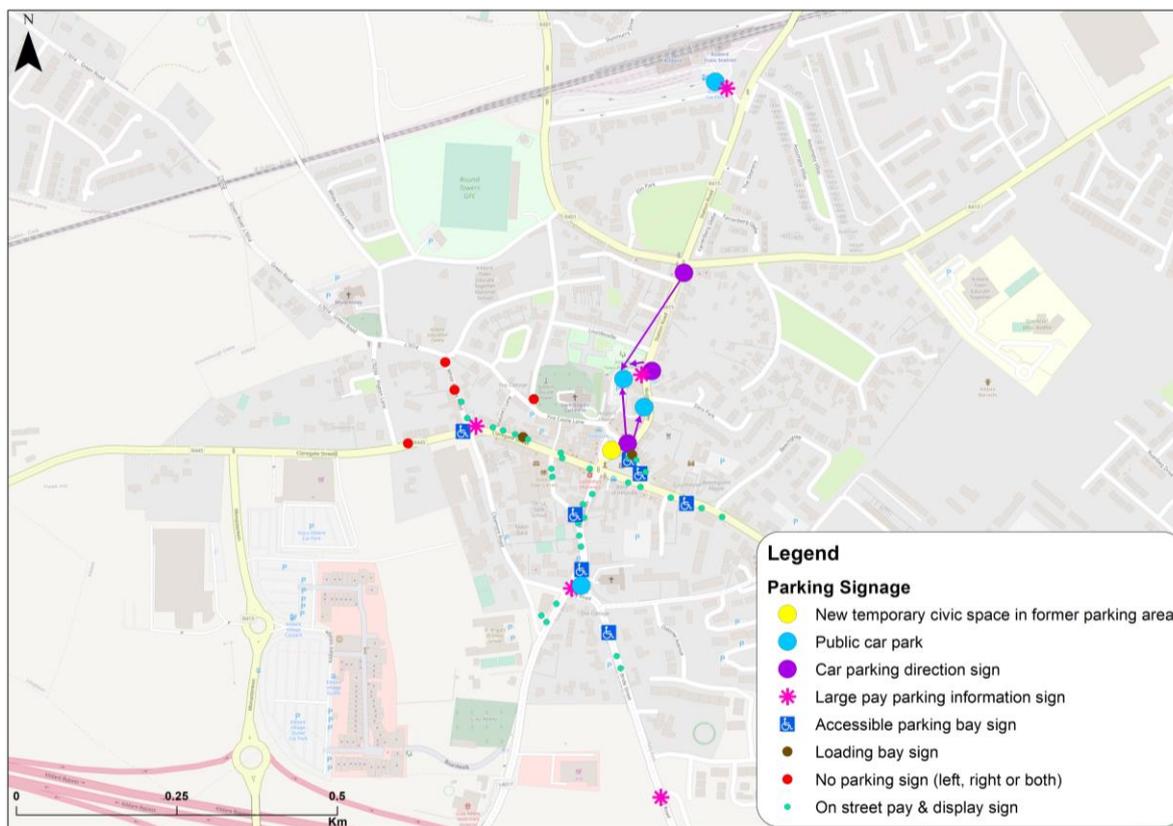


Figure 6.8: Parking Signage Survey

## 6.4 Active Mode Survey

The walking catchment areas for the main services and destinations in Kildare Town have been outlined in the permeability assessment in Section 4.6. This section presents additional information on the quality of walking and cycling infrastructure, as well as a review of existing pedestrian demand.

### 6.4.1 Pedestrian Footpath Infrastructure

Figure 6.9 illustrates the findings of a survey of footpaths on the main approach roads and roads within the town centre. As shown, most roads assessed have a footpath on either one side or both sides of the road. Road sections which lack a footpath on the outskirts of the town have a rural character and are unlikely to form part of key pedestrian desire lines based on existing development patterns. One notable exception is the very short section of Rathbride Road close to the junction with Rathbride Abbey Road which lacks a continuous footpath on either side, as there are existing pedestrian desire lines along this road from housing to the north.

There are a significant number of roads within the study area which have an existing footpath on one side only. In many cases, this is adequate based on existing development patterns and desire lines, but there may be some instances where an additional path, or an additional crossing to allow easier access to a path on the other side of the road would be desirable.

A comprehensive survey of path widths is outside the scope of this study. However, it should also be noted that many paths within the study area appear to be narrower than desirable based on current design standards and/or are in poor condition. For example, in the south of the study area, the path between Tully Road and the R415 appears to have limited width which may be partly related to an encroachment of the grass verge onto the path. The path on the south side of Melitta Road / the R401 near Fairview Cottages is also extremely narrow.

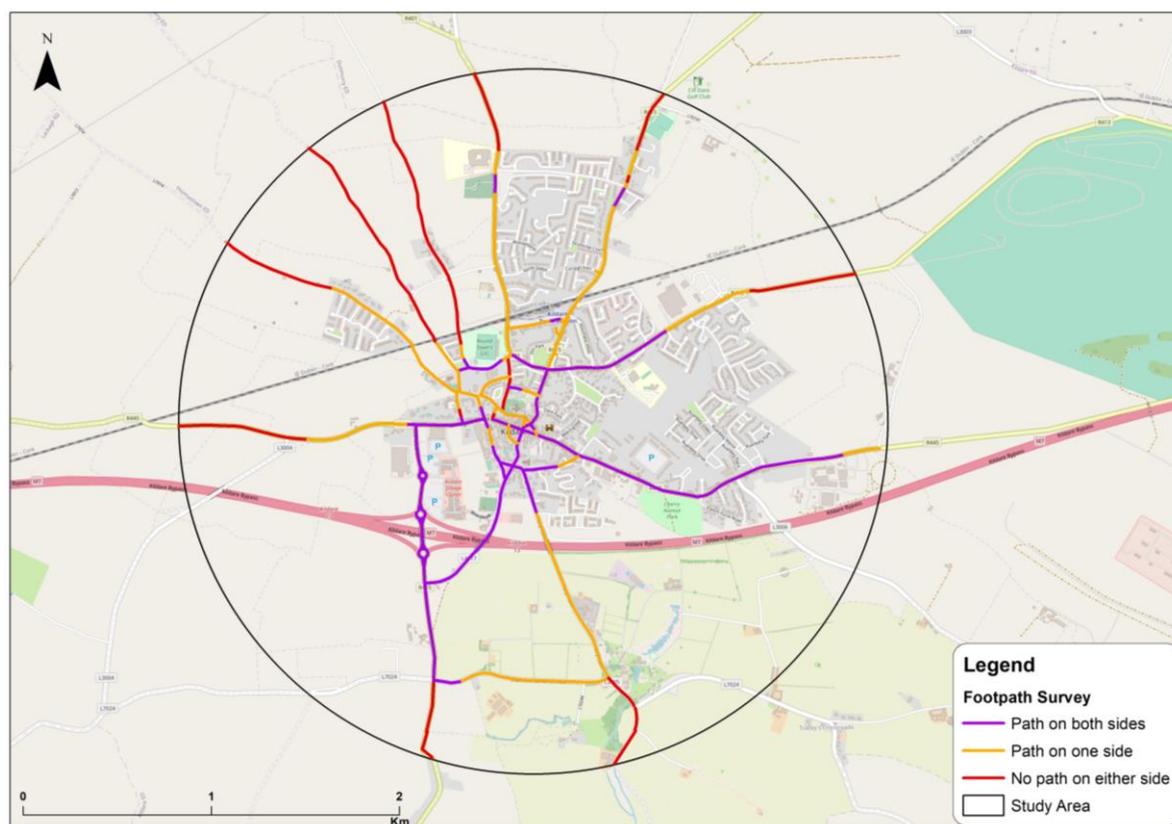


Figure 6.9: Footpath Survey

#### 6.4.2 Pedestrian Crossing Facilities

A survey of pedestrian crossing facilities was completed on the main approach roads to the town and within the town centre. The survey encompassed formal crossing facilities which provide either some physical protection (i.e. a raised table) or legal protection to crossing pedestrians, and as such 'courtesy' crossings or other markings were not included except in the small number of cases where these are accompanied by a raised table.

Figure 6.10 shows pedestrian crossings identified through the survey in the context of the full study area, while Figure 6.11 provides a more detailed view of the same information by focusing on the relevant extent (where crossings were identified) only.

As shown, most formal crossing facilities within the study area are signalised crossings. Only two zebra crossings and two courtesy crossings with a raised table were identified. There are a significant number of roads and junctions within the study area where there are no formal pedestrian crossing facilities and existing facilities are concentrated within the town centre and to the north of the town.

A raised table zebra crossing has recently been installed on Cleamore Road/Academy Street as part of a larger scheme to make Cleamore Road one way for vehicular traffic, widen footpaths and resurface the road, as shown in Figure 6.12.

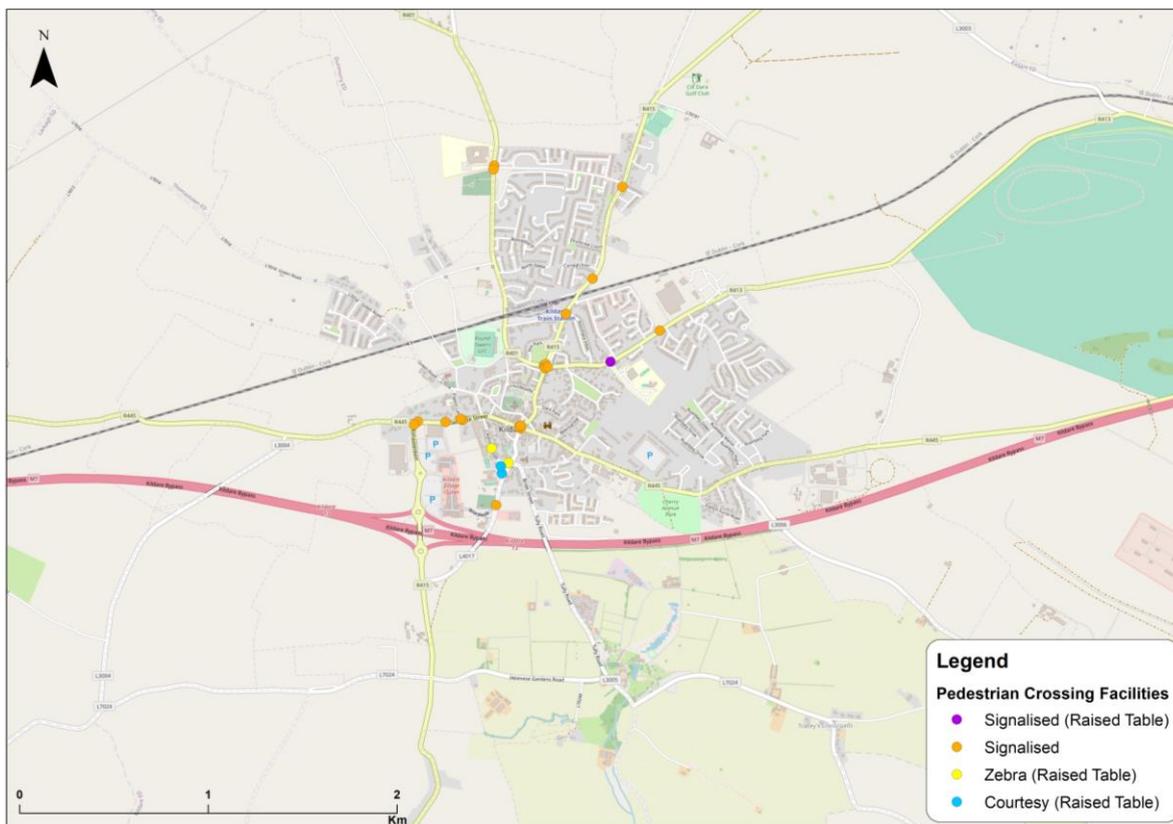


Figure 6.10: Pedestrian Crossing Facilities in Study Area

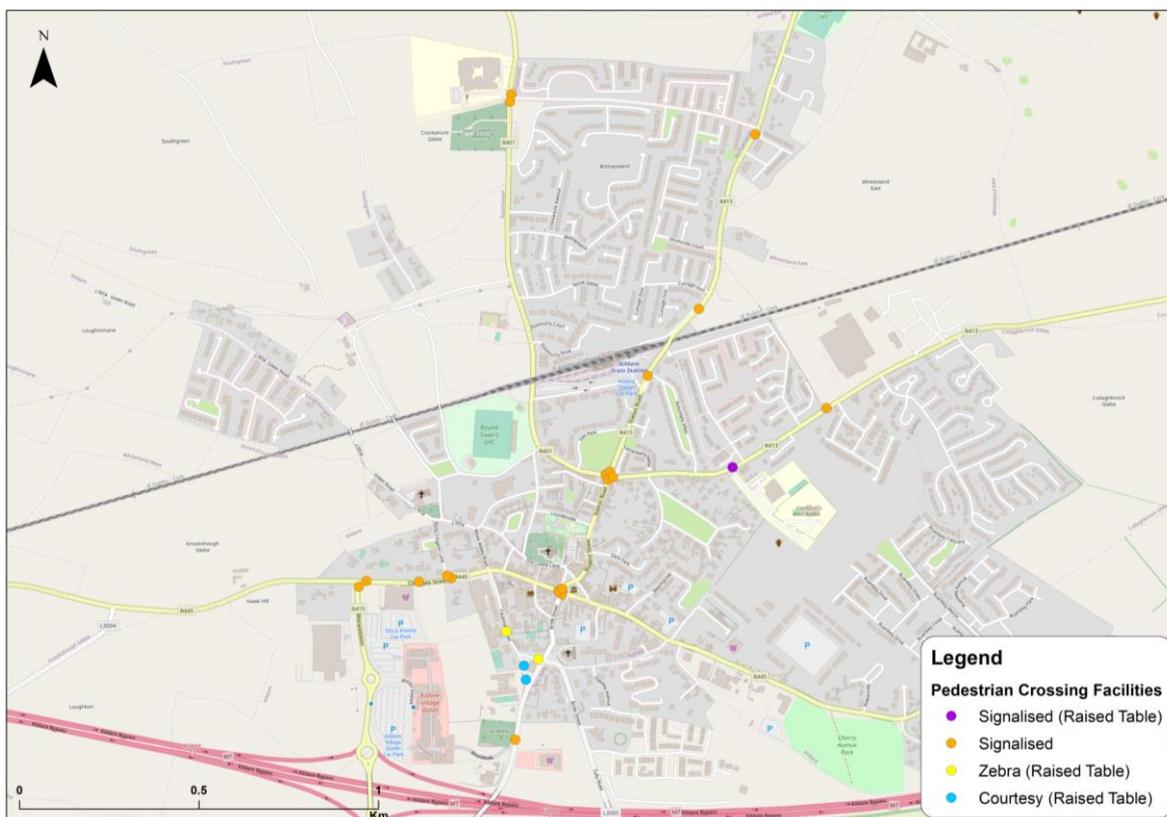


Figure 6.11: Pedestrian Crossing Facilities in Study Area – Detailed View



*Figure 6.12: Raised Table Zebra Crossing Recently Installed on Cleamore Road*

### 6.4.3 Existing Cycling Infrastructure

Until recently, there was almost no existing dedicated cycling infrastructure within the study area. However, the recently constructed link road between South Green Road and the R410/Dunmurray Road includes cycling infrastructure which consists of a combination of cycle track, cycle lane and shared pedestrian and cycle sections. The Rathbride Demesne road between the R401/Dunmurray Road and Rathbride Road has been constructed as a shared street with bicycle logos, as shown in Figure 6.14. Older residential streets at Woodside Park and Maryville contain physical traffic calming and can also be considered shared streets as part of a cycling network, although the lack of a direction connection between Woodside Park and Station Road prevents these streets being used as through routes for cycling trips. Finally, a one-way system has recently been implemented on a temporary basis on two streets south of the town centre, Cleamore Road (north of the junction with Academy Street only) and Meadow Road in order to create additional space for walking and cycling, and therefore these streets have also been mapped as 'shared streets' in Figure 6.13 below.

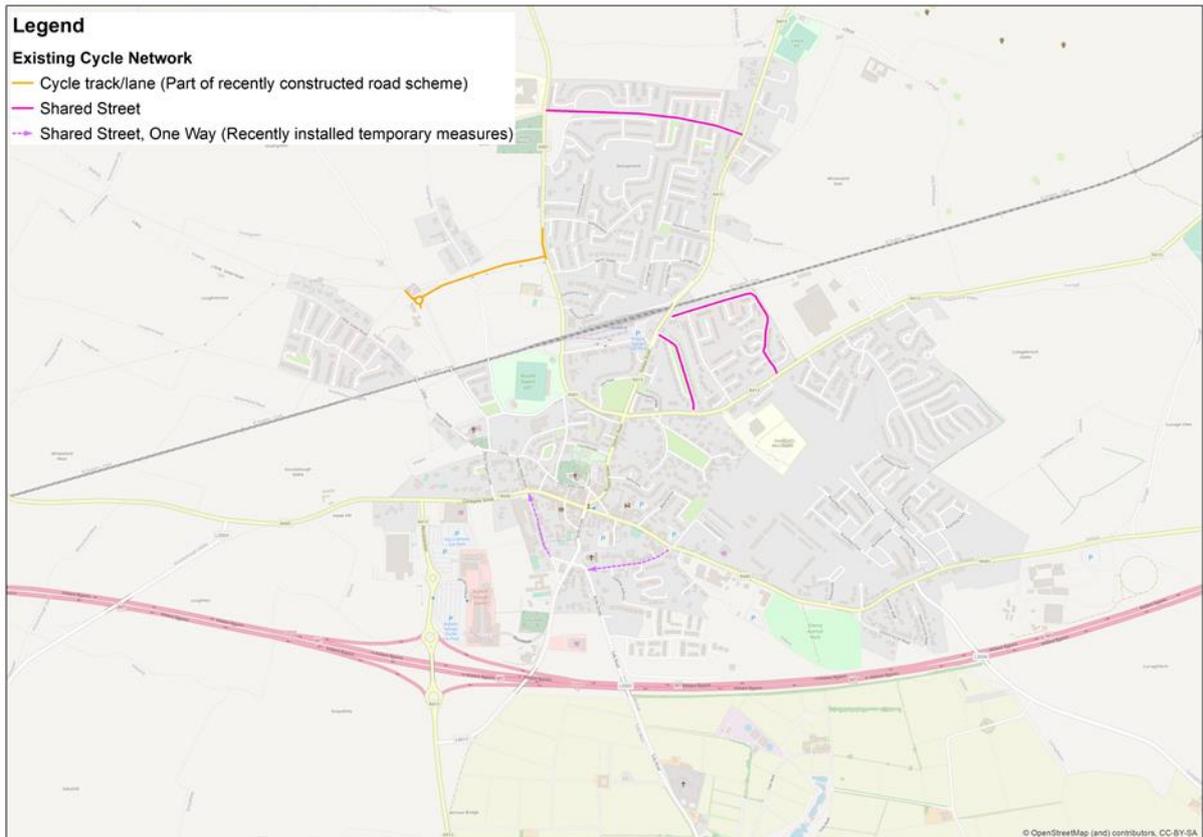


Figure 6.13: Existing Cycle Infrastructure



Figure 6.14: Rathbride Demesne Shared Street

### 6.4.4 Cycle Parking Facilities

An absence of convenient and adequately secure cycle parking at all types of destinations presents a barrier to modal shift to cycling. Different types of cycle parking solutions are typically required at different locations and in some cases, a variety of different cycle parking solutions are required at the same location to accommodate different cycle parking duration or types of users. However, the most basic requirements of all cycle parking facilities are that they should be capable of supporting the frame of the cycle and preventing it from falling over; protecting the cycle against theft and allowing the cyclist sufficient room to position and lock the cycle. In addition, consideration should be given to protection against weather, lighting, ease of access and additional requirements at public transport.

A cycle parking survey was undertaken as part of the site visit completed in November 2020 to assess current provision of cycle parking within Kildare town. The survey encompassed most of the key destinations within the town with the main exception being private workplaces. A summary of existing cycle parking provision identified by the survey is outlined in Table 6.10. Overall, this shows a need to significantly enhance public cycle parking provision throughout the study area.

*Table 6.10 Existing cycle parking provision at key locations in Kildare Town*

Destination Type	Destination	Visible Cycle Parking	Rain Shelter	Frame Supporting Stands
<b>Transport Hub</b>	Train Station	No		
<b>Schools</b>	Kildare Community College	Yes	Yes	No
	Gaelscoil Mhic Aodha	Yes	Yes	Yes
	Kildare Town Educate Together	No		
<b>Retail</b>	Market Square	No		
	Aldi	No		
	Lidl	Yes	No	Yes
	Tesco - Monasterevin Road entrance	Yes	No	Yes
	Tesco – Carpark/ south entrance	No		
	Kildare Village	Not accessible on day of survey		
	Centra (Melitta Road)	No		
<b>Community Facilities</b>	Round Towers GAA Club	No		
	HSE Primary Care Centre	No		



Figure 6.15: Example of Covered Cycling Parking at Kildare Community College

## 6.4.5 Walking Demand Assessment

This section identifies the key trip producers and attracters for walking trip desire lines, as well as assessing the existing demand for walking trips by residents in the study area.

### 6.4.5.1 Key Trip Attractors and Producers in Kildare Town

To assess the walking demand in Kildare Town, the main origins and destinations were identified. The origins are primarily residential dwellings, which were identified using GeoDirectory. The origins include residential buildings and also points marked as 'Both' as these are combined residential and commercial buildings. The destinations identified include the following locations in Kildare Town:

- Primary Schools;
- Secondary School;
- Primary Care Centre;
- Supermarkets
- The Town Centre;
- Kildare Village;
- Train Station; and
- Large Employers (identified using POWSCAR)

Figure 6.16 show the key origins and destinations within Kildare Town.



Figure 6.16: Overview of Origins and Destinations within Kildare Town

### 6.4.5.2 Walking to Work

Figure 6.17 shows the number of walking trips to work by residents living in each CSO Small Area in 2016. In general, the number of walking trips to work is quite low with the highest levels recorded in small areas located close to the town centre. There are couple of exceptions to this where there are higher pockets of walking demand, such as; the Woodside Park and Ruanbeg Manor housing estates.

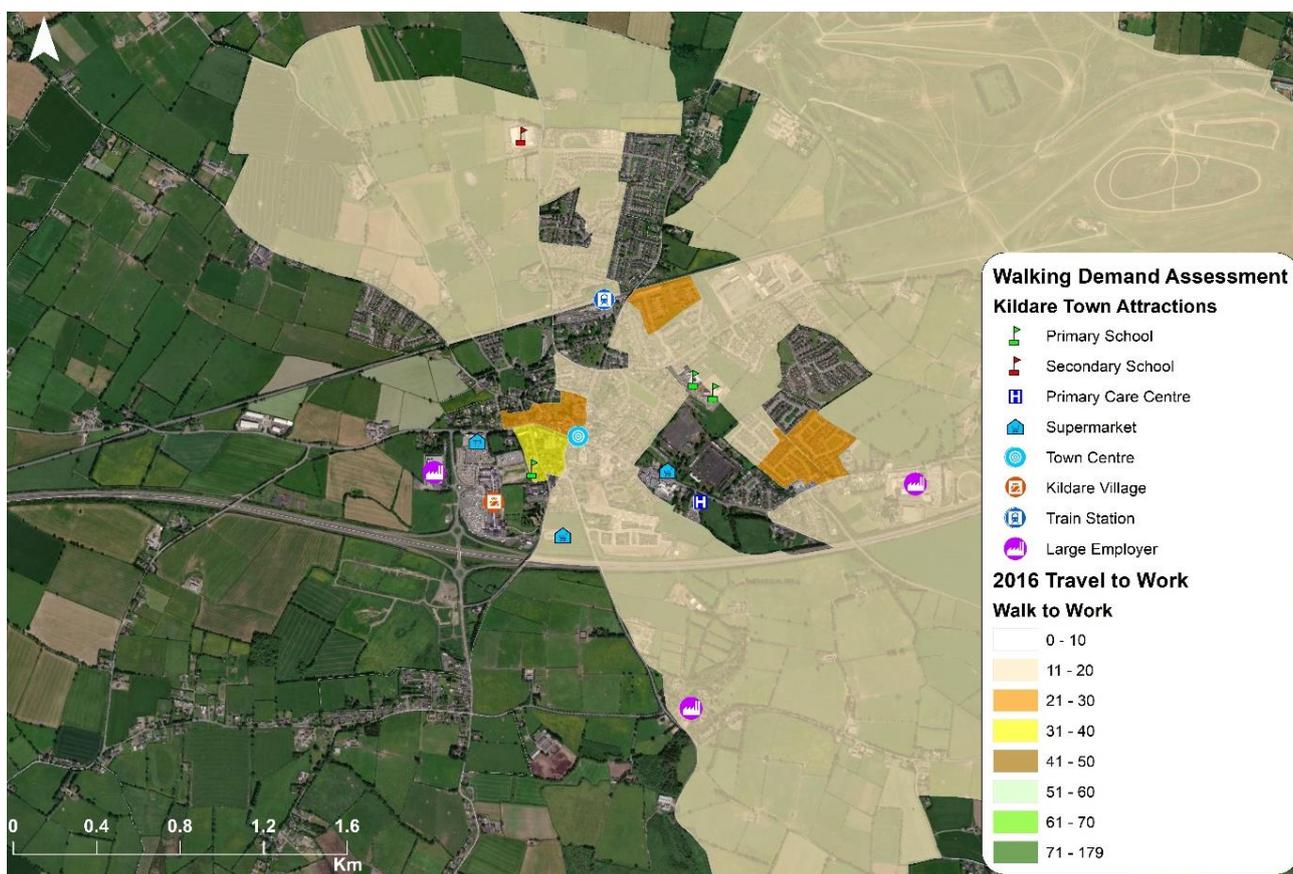


Figure 6.17: 2016 number of people walking to work from CSO Small Area

### 6.4.5.3 Walking to School

Using Census 2016, the demand for walking to school in Kildare Town at the Small Area level was assessed. Figure 6.18 shows that demand for walking to school is relatively low in the town centre typically ranging from 11-20 people walking from each CSO small area. This is surprising given that there are three primary schools located within the town centre, and this may reflect an aging population with fewer children in these areas. The residential area to the north show the highest levels of walking demand for school ranging from 21-30 people and 51-60 people walking from each CSO small area to school. The Community School is located in close proximity to the northern residential area and this will partly explain the higher walking results in this area.

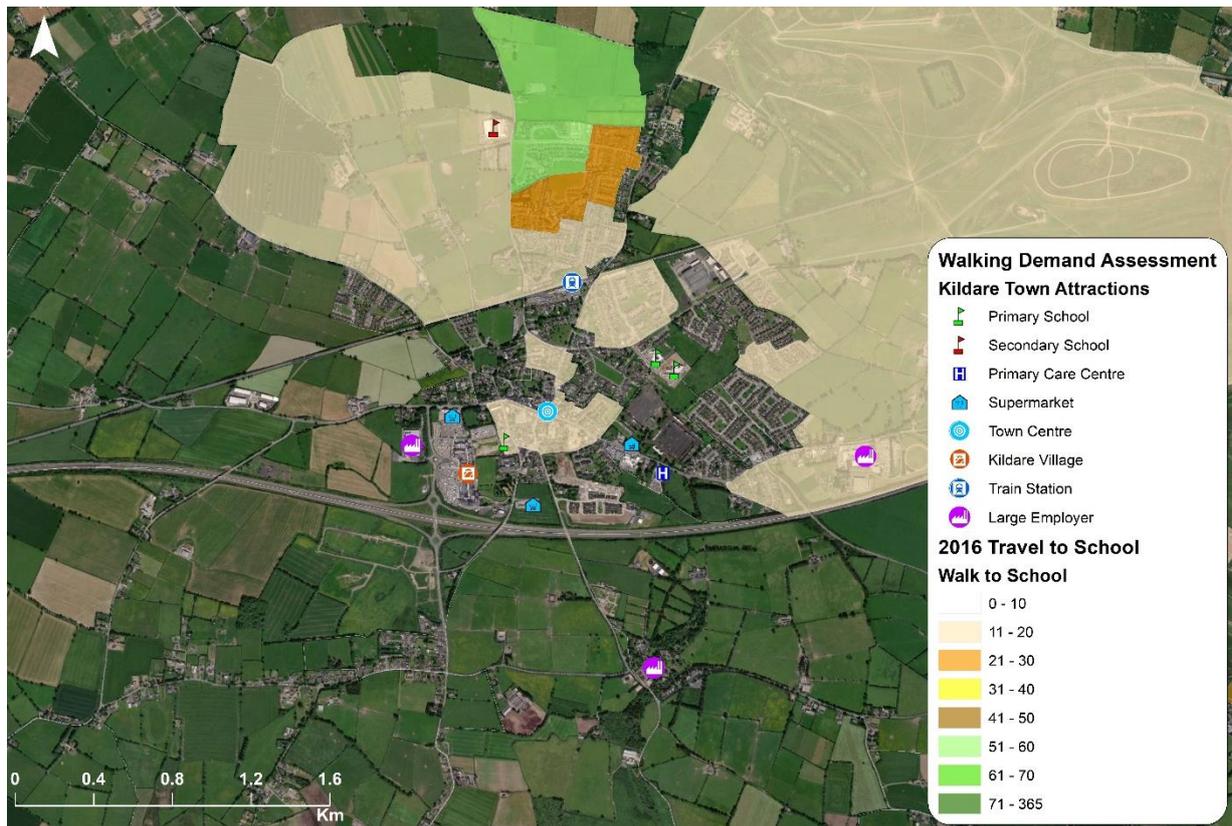


Figure 6.18: 2016 number of people walking to school from CSO Small Area

## 6.5 Public Transport Survey

### 6.5.1 Bus Stop Infrastructure

Figure 6.19 shows the location of bus stops within the study area. A survey assessing the quality of bus stop infrastructure was undertaken using Google Streetview and this was found to vary considerably across the study area. The best bus stop infrastructure is found at the eastbound stop in Market Square and the Kildare Village/M7 Interchange stop which both have a shelter, with seating included at the Market Square stop. Three stops, including the westbound stop in the town centre, as well as stops on French Furze Road and Curragh Road have a bus stop pole. The remaining eleven stops identified within the study area have no bus stop pole and three of these (two stops at Kildare Golf Club and the westbound stop at the Japanese Gardens) also have no footpath or safe waiting area.

The NTA have an ongoing programme of works to improve bus stop infrastructure and therefore details of any recent or upcoming works within the study area have been requested from the NTA. Any relevant updates received will be incorporated into future drafts of this report along with any other changes required following on-site verification. It is expected that several bus stop poles will have been updated due to the transfer of commuter bus services from Bus Eireann to Go Ahead Ireland in 2019.



Figure 6.19: Bus Stops in the Study Area

Images of the two bus stops with shelters are shown in Figure 6.20 (Market Square – Eastbound) and Figure 6.21 (Kildare Retail Village).



Figure 6.20: Example of Bus Stop Infrastructure Kildare Town – Town Centre



Figure 6.21: Example of Bus Stop Infrastructure Kildare Town – M7 Interchange

## 7 Conclusions and Next Steps

The Baseline Report has established a comprehensive review of available data to identify problems in the existing transport network and highlight opportunities for improvement in Kildare Town. This evidence will feed into the development of strategy options to improve conditions for all modes of transport; walking, cycling, roads, parking and public transport. In the final strategy report, these options will be assessed in a thorough Multi-Criteria Analysis (MCA) process to identify the preferred solutions for each mode which will form the transport strategy for Kildare Town.

## 8 Appendix

### 8.1 Appendix A: ANPR Trip Matrix

Table 8.1 OD Vehicle count from ANPR Analysis – AM Peak

		Destination																																	
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	Total	
Origin	1	0	8	0	1	0	1	0	2	0	21	0	13	0	1	0	19	0	6	0	0	0	2	0	32	3	3	0	7	9	0	0	0	137	
	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	3	0	0	0	2	0	0	0	1	0	11	0	2	0	4	0	8	0	2	0	0	0	0	0	5	1	0	1	1	0	0	0	0	38	
	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	5	0	0	0	0	0	0	0	0	0	0	0	1	0	3	0	1	0	1	0	0	0	0	0	2	0	1	0	0	1	0	0	0	10	
	6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	7	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	3
	8	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	9	0	6	0	1	0	0	0	1	0	6	0	1	0	1	0	3	0	3	0	0	0	0	0	6	2	1	2	1	7	1	1	2	55	
	10	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	11	0	7	0	0	0	0	0	0	0	2	0	8	0	1	0	4	0	1	0	1	0	5	0	1	0	1	1	3	0	0	1	0	78	
	12	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	13	0	1	0	1	0	0	0	0	0	4	0	1	0	1	0	0	0	0	0	1	0	0	0	0	0	0	0	2	0	0	0	0	1	27
	14	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	15	0	4	0	0	0	0	0	0	0	1	0	1	0	0	0	5	0	8	0	6	0	2	0	2	0	0	0	0	1	7	0	0	37	
	16	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	17	0	0	0	0	0	0	0	0	0	6	0	0	0	0	0	11	0	2	0	0	0	0	0	1	0	0	0	2	0	7	0	0	29	
	18	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

		Destination																																
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	Total
19	0	1	0	1	0	0	0	0	0	0	10	0	3	0	2	0	4	0	0	0	1	0	0	0	0	0	0	0	7	0	2	2	0	33
20	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
21	0	1	0	0	0	0	0	0	0	0	4	0	10	0	4	0	9	0	2	0	5	0	3	0	1	0	0	1	14	0	1	5	0	60
22	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
23	0	16	0	4	0	4	0	0	0	0	31	0	17	0	6	0	5	0	2	0	1	0	1	0	19	1	1	0	11	8	0	0	0	127
24	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
25	0	2	0	1	0	0	0	0	0	0	1	0	6	0	1	0	8	0	3	0	2	0	1	0	0	0	4	0	6	13	3	0	0	51
26	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	2	0	0	0	0	0	0	0	0	1	0	2	0	0	0	6
27	0	7	0	0	0	0	0	1	0	0	3	0	0	0	4	0	14	0	12	0	1	0	3	0	2	0	0	0	7	6	0	0	8	68
28	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	1	0	0	1	0	1	0	0	0	4
29	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	10	0	5	0	1	0	0	0	0	0	0	0	0	0	0	0	0	17
30	0	2	0	0	0	0	0	0	0	0	22	0	4	0	5	0	1	0	1	0	0	0	0	0	5	0	0	1	6	3	1	0	2	53
31	0	0	0	0	0	0	0	0	0	0	4	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	1	0	0	0	13	
32	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	3	0	0	0	0	0	1	0	0	0	0	5
Total	0	55	0	11	0	5	0	5	0	127	0	73	0	82	0	102	0	50	0	20	0	20	0	87	7	11	20	68	55	22	8	23	851	

Table 8.2 Appendix B: OD Vehicle count from ANPR Analysis – PM Peak

		Destination																														Total		
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30		31	32
Origin	1	0	5	0	1	0	1	0	1	0	5	0	7	0	2	0	18	0	2	0	3	0	2	0	22	0	6	0	8	1	0	0	0	94
	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	3	0	2	0	2	0	1	0	0	0	0	0	1	0	4	0	0	0	0	0	1	0	0	0	2	2	1	0	2	1	0	0	0	19
	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	5	0	4	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	1	0	1	0	3	0	0	0	1	0	0	0	0	12
	6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	7	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	2
	8	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	9	0	3	0	2	0	0	0	0	0	5	0	0	0	4	0	1	0	1	0	0	0	6	0	8	0	1	1	1	2	0	0	0	35
	10	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	11	0	12	0	1	0	1	0	1	0	1	0	2	0	2	0	0	0	0	0	4	0	19	0	11	0	1	14	4	5	1	0	2	81
	12	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	13	0	8	0	3	0	0	0	0	0	1	0	3	0	11	0	1	0	0	0	0	0	4	0	3	0	0	7	1	3	1	0	0	46
	14	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	15	0	27	0	5	0	0	0	1	0	3	0	6	0	1	0	12	0	8	0	9	0	26	0	8	0	0	0	9	1	27	0	1	144
	16	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	17	0	1	0	1	0	2	0	0	0	1	0	0	0	0	0	4	0	2	0	0	0	2	0	1	0	0	0	4	0	7	0	0	25





## Appendix B

### *VISUM Model Development Report - Extract from the Draft 'Kildare Town Northern Link and South Green Access Improvement Project Traffic Modelling Report'*

The VISUM strategic model used in the Kildare Town Transport Strategy was developed as part of an earlier project called the 'Northern Link Street and South Green Access Improvement Project'. Appendix B contains an extract from the *draft* traffic modelling report for this project which describes the creation of the VISUM model. This extract has been provided as part of the Kildare Town Transport Strategy to provide information on how the VISUM model was developed.

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# Kildare Town Northern Link & South Green Area Access Improvement

## Traffic Modelling Report

Project Stage (ii-a)

Project number: 60569117

May 2019

Kildare County Council



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# 1. Introduction

This report outlines details of the following:

- Summary of Traffic Modelling;

## 2. Summary of Traffic Modelling

The Local Area Model (LAM) that has been developed to assess the traffic impacts of various route options for the Kildare Town Northern Link and South Green Access Improvement project is discussed below, under the below listed key model development processes:

- Traffic Model Study area;
- Selection of Modelling Software;
- Traffic Data Collection;
- Network Development;
- Matrix Development;
- Model Calibration/Validation; and
- Future Year Forecasting.

### 2.1 Traffic Model Study Area

The modelled area encompasses:

- the town of Kildare;
- the four radial routes into/out of Kildare to the north;
- the R445 between the Dublin to Galway/Cork railway line to the west and the Curragh to the east;
- the R413 between the R415 and the Curragh;
- the R415 between the R445 and the M7; and
- Junction 13 of the M7.

This area, i.e. the modelled extents, also comprises the detailed model area, which consists entirely of simulation links (there is no 'buffer' network beyond the model's Kildare area).

The network within Kildare is highly detailed, with all major junctions and the majority of minor junctions included in the model.

The traffic model study area for the proposed scheme is illustrated in **Figure 2.1**.

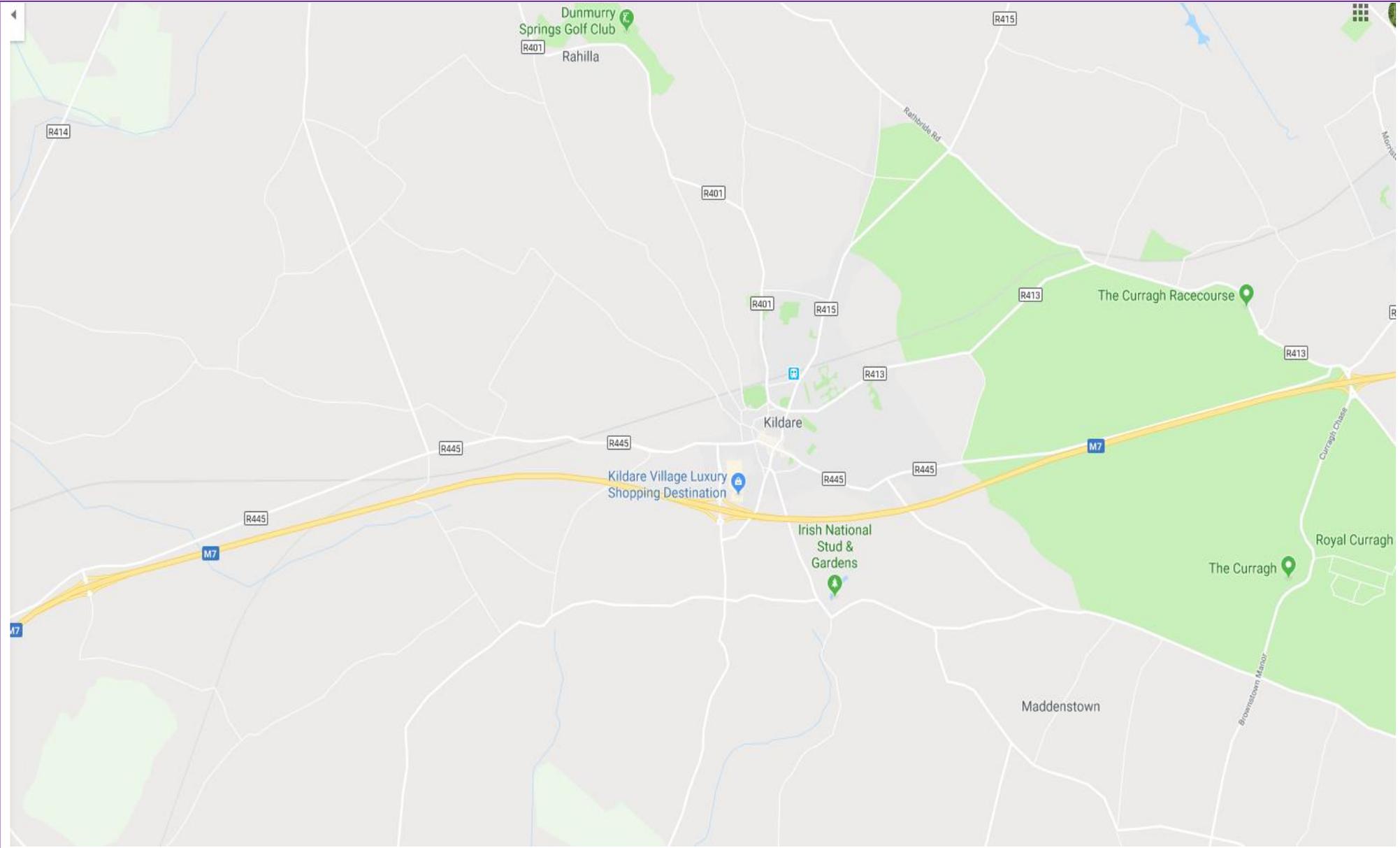


Figure 2.1 Traffic Model Study Area

## 2.2 Modelling Software

The model has been developed using the VISUM suite of software.

The most recent version available is 11.4.06D and this has been used to undertake the work.

Historic assessments have been completed using VISUM, providing a reference model structure.

This software choice remains suitable for the assessment of a moderate-sized town such as Kildare, allowing testing at strategic and more localised levels.

## 2.3 Traffic Data Collection

To develop the LAM, a significant volume of traffic data has been required to be collected, to ensure that the model could appropriately replicate existing traffic patterns and volumes.

A series of detailed traffic surveys have therefore been undertaken to inform the development of the Base Year (2018) LAM.

The surveys that have been undertaken include:

- Junction Turning Counts (JTC);
- Automatic Traffic Counts (ATC);
- Origin-Destination (O-D) Surveys ;
- Queue Length (QL); and
- Journey Time Surveys (JTS)

As applicable in each of the surveys, a conversion exercise has been undertaken on the survey data.

This common modelling approach converts the vehicle data into a Passenger Car Unit (PCU) value, taking into account the differing road space requirements of each mode.

The classifications and PCU value of each class is shown in **Table 2.1**.

**Table 2.1 Vehicle Classifications and PCU Values**

Vehicle Classification	PCU Value
Car	1.0
Light Goods Vehicle (LGV)	1.0
Other Goods Vehicle – 2-axle or 3-axle rigid (OGV1)	2.0
Other Goods Vehicle – 3-axle articulated, 4-axle rigid, 4-axle articulated, 5-axle articulated or 6-axle articulated (OGV2)	2.3
Bus	2.0
Motorcycle	0.4
Pedal cycle	0.2

The following sections describe the collation of traffic data use for the construction of the Base Year (2018) LAM.

### 2.3.1 Junction Turning Counts (JTC)

Classified Junction Turning Counts (JTC) give an indication of the turning movements observed at key junctions in the network. These have been commissioned at 23 locations, as shown in **Figure 2.2**, and have been recorded in 15-minute intervals between 07:00-19:00 on Thursday 18th October 2018.

**Appendix A** provides the list of junctions with the arms for each junction.

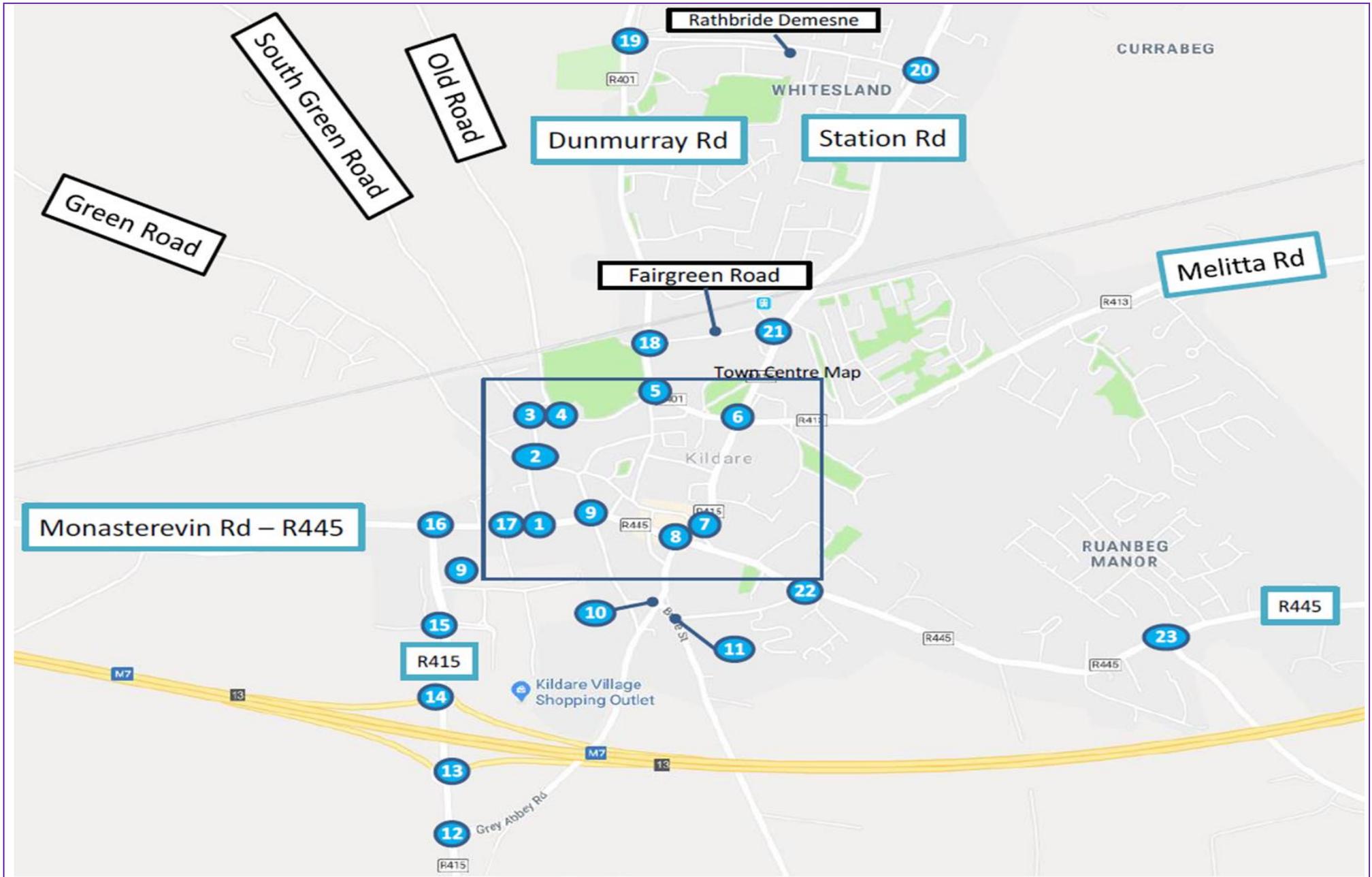


Figure 2.2 Junction Turning Count Locations

Prepared for: Kildare County Council

### 2.3.2 Automatic Traffic Counts (ATC)

Automatic Traffic Count (ATC) data has provided link count data over a longer time period.

ATC data has smoothen out any day-to-day variations that may have not been picked up when undertaking single day counts

ATC data has been collected at the 16 sites shown in **Figure 2.3**.

ATC sites 1 to 16 survey has been undertaken over a 7 day period in October 2018.

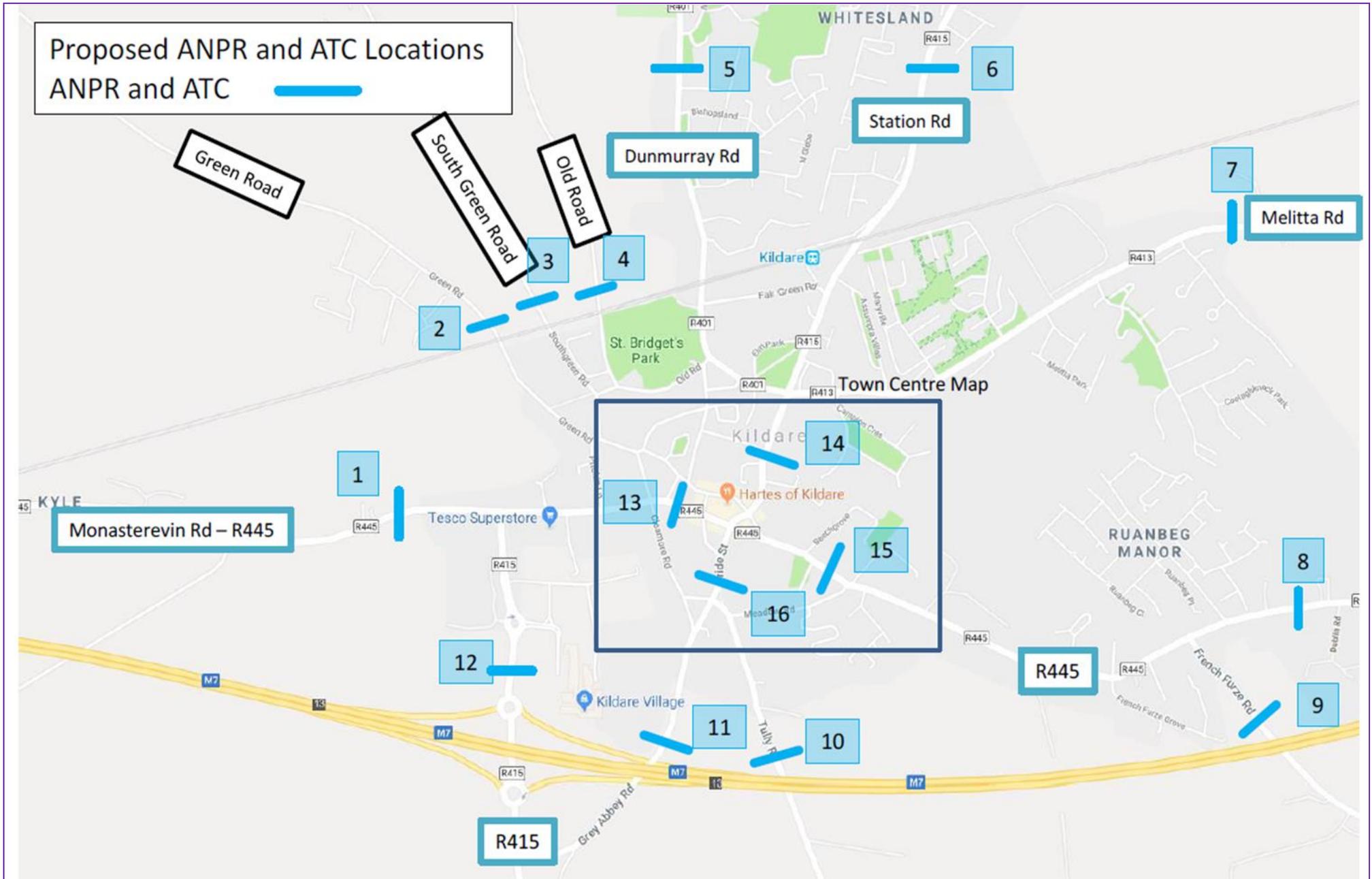


Figure 2.3 Automatic Traffic Counts Locations

Prepared for: Kildare County Council

### 2.3.3 Origin – Destination (O-D) Surveys

Automatic Number Plate Recognition (ANPR) surveys have been carried out on Thursday 18th October 2018 at 16 sites between 07:00-19:00.

ANPR survey locations are shown on the map included in **Figure 2.4**.

**Appendix B** provides the full matrix of O-D movements that have been captured by the ANPR during the AM and PM peaks.

The ANPR survey has only captured movements that have passed through the cordon, and has not included trips that have an origin or destination within the cordon.

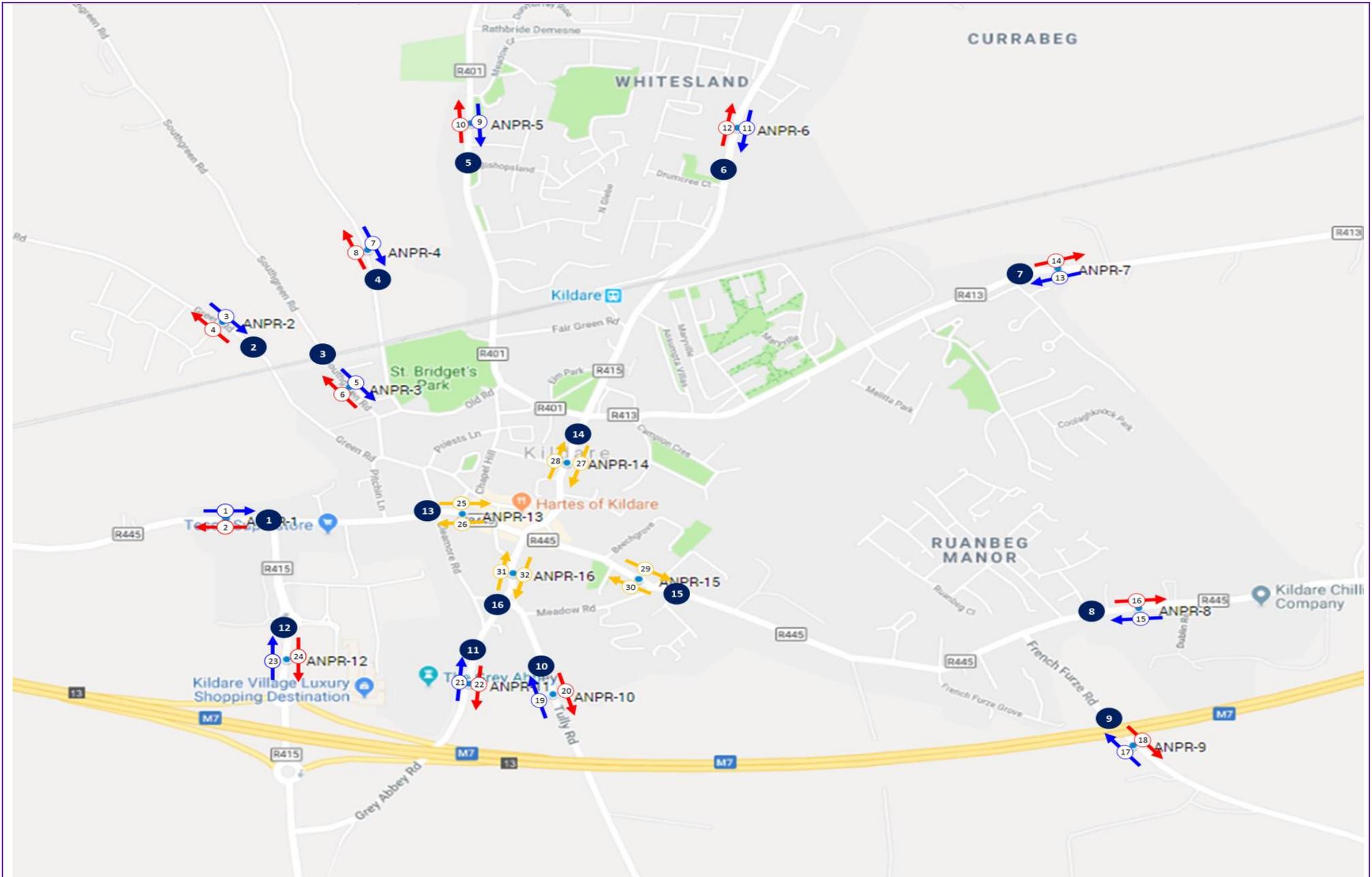


Figure 2.4 ANPR Survey Locations

Prepared for: Kildare County Council

### 2.3.4 Journey Time Surveys (JTS)

Journey time data has been collected using anonymised data on the following routes.

A total of six bi-directional routes were established as shown in **Figure 2.5** and populated in **Table 2.2**. The journey times have been collected for the purpose of model validation and post-project assessment.

Furthermore, collection of current journey times has enabled long-term changes to be monitored for the town.

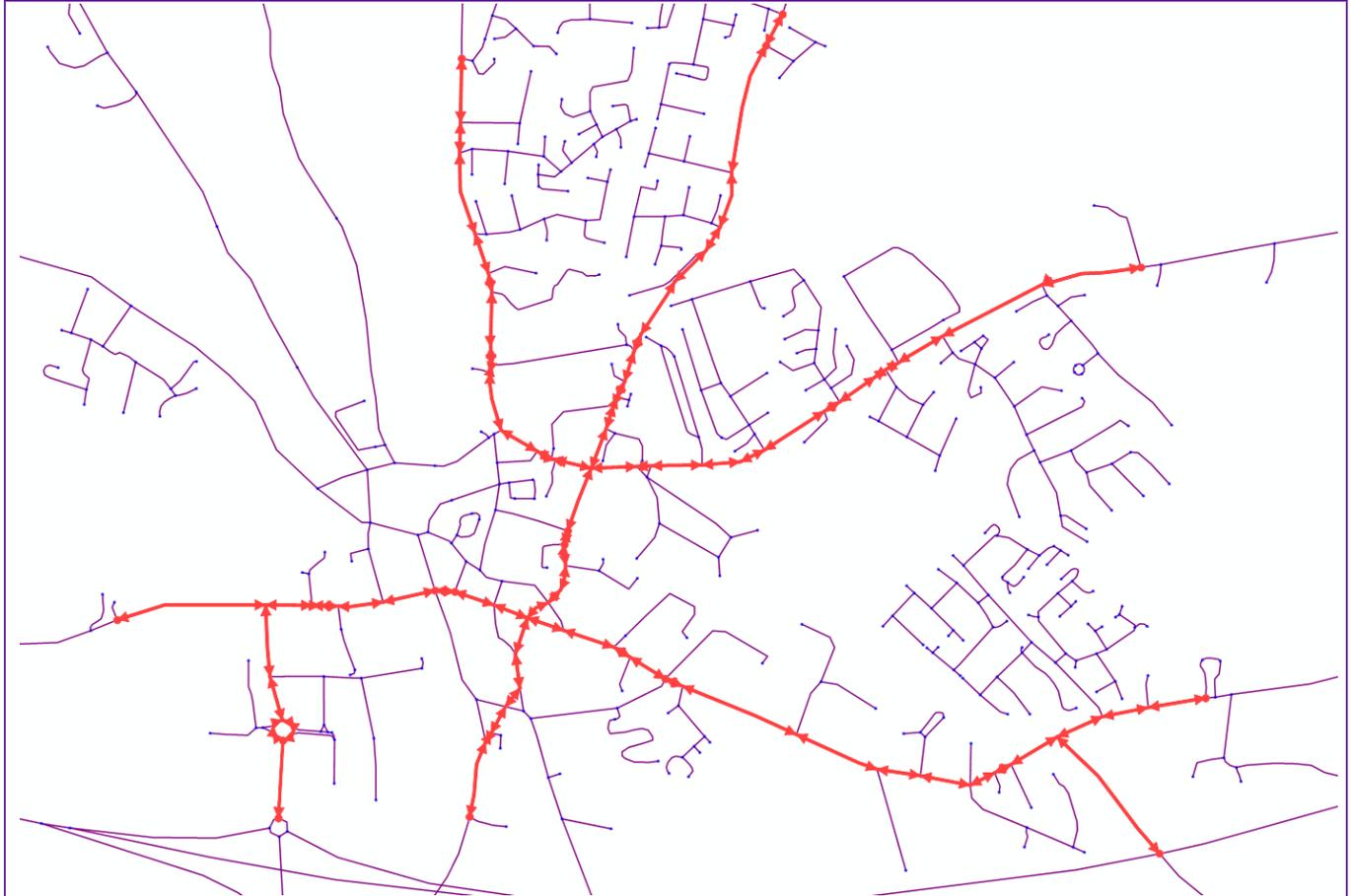


Figure 2.5 Kildare Town Journey Time Routes

Table 2.2 Average Journey time and speeds on six routes

Route No.	Section	Direction	Distance (km)	Average Journey Times (sec)		Average Speeds (kph)	
				AM	PM	AM	PM
1	R445 (From ATC 1 to ATC 8)	EB	2.465	503	412	7.64	21.54
	R445 (From ATC 8 to ATC 1)	WB	2.465	757	506	11.72	17.54
2	Grey Abbey Road/Bride Street/R415 (ATC 11 to ATC 6)	NB	1.986	477	507	14.99	14.10
	Grey Abbey Road/Bride Street/R415 (ATC 6 to ATC 11)	SB	1.910	872	444	7.89	15.49
3	R401 (ATC 14 to ATC 5)	NB	1.178	405	197	10.47	21.53
	R401 (ATC 5 to ATC 14)	SB	1.178	200	123	21.20	34.48
4	R413 (ATC 14 to ATC 7)	NB	1.463	331	470	15.91	11.21
	R413 (ATC 7 to ATC 14)	SB	1.463	672	415	7.84	12.69
5	R415 (ATC 12 to ATC 13)	NB	0.799	180	200	15.98	14.38
	R415 (ATC 13 to ATC 12)	SB	0.877	120	180	23.97	15.98
6	French Furze Road (ATC 9 to ATC 15)	NB	1.249	213	133	21.11	33.81
	French Furze Road (ATC 15 to ATC 9)	SB	1.249	140	110	32.12	40.88

## 2.4 Network Development

The model has provided significant detail that each junction's performance can be assessed.

The junction modelling has included priority junctions, crossroads, roundabouts and signal-controlled junctions. In line with best practice, smaller roundabouts have been modelled as a single node, whereas larger roundabouts have been exploded, with each point of conflict modelled as a separate node. **Figure 2.6** illustrates the locations of all signal-controlled junctions in Kildare Town.

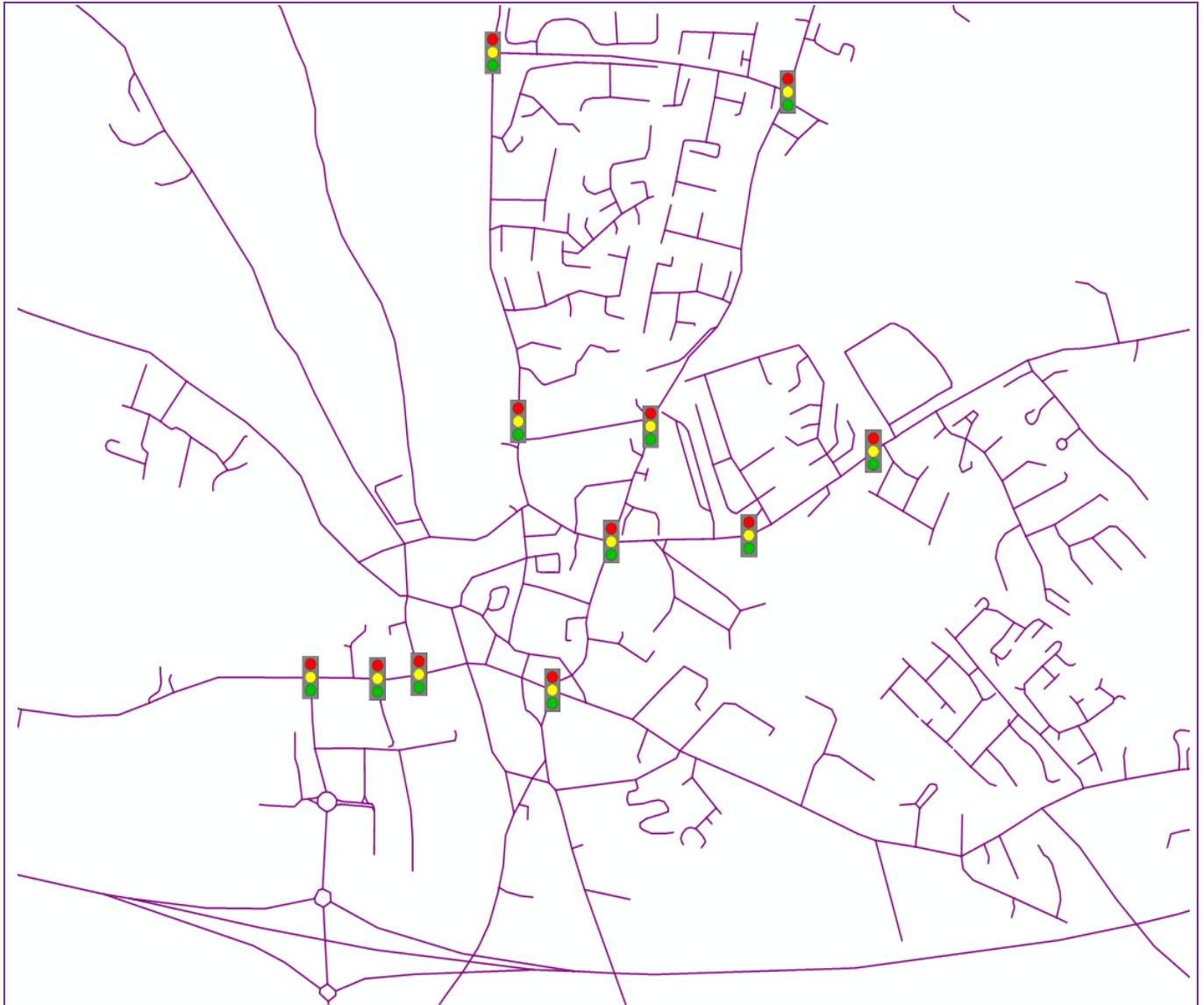


Figure 2.6 Signal-controlled Junctions in Kildare Town

## 2.5 Matrix Development

This report section describes the development of the traffic matrices for the light and heavy vehicles user classes separately. The time periods that have been required for the Kildare Town Model are:

- Morning peak from 08:00 – 09:00 (AM Peak Hour); and
- Evening Peak from 17:00 – 18:00 (PM Peak Hour)

'Prior' AM Peak hour Light and Heavy Vehicle matrices have been extracted from the cordoned 2013 National Transport Model (NTM).

The matrices have been split to provide a more refined Kildare Town Model zoning system.

The process of zone splitting has been undertaken using VISUM, whereby origin and destination trip ends have been allocated to the sub-zones, based on the Post GeoDirectory information, whilst maintaining the equivalent distribution of the larger zones.

The resultant 'Prior' matrices have then been adjusted, during the calibration process, using matrix estimation methods, to reflect 2018 demand.

As there is no PM Peak Hour NTM, an alternative approach to generate the 'Prior' PM Peak Hour matrices has been adopted:

- the calibrated AM Peak Hour matrices have been transposed to give a 'Prior' PM matrix; and
- each of these matrices has then been modified during the calibration process, using the 2018 traffic survey data ascertained for each peak, using the select link analysis tool in VISUM.

### 2.5.1 Establishing Cordons

From the data collection, two cordons have been set:

- one for inner town; and
- the second cordon is for external town.

The cordons have been developed to monitor and control the volume of traffic entering and leaving Kildare Town in the traffic model, and to capture internal movements across the Dublin to Cork/Galway railway line, which effectively divides the northern and southern areas of Kildare.

Traffic movements between each of the areas have been fully observed from the surveys undertaken, as part of the data collection exercise. The cordons are shown diagrammatically in **Figure 2.7**.

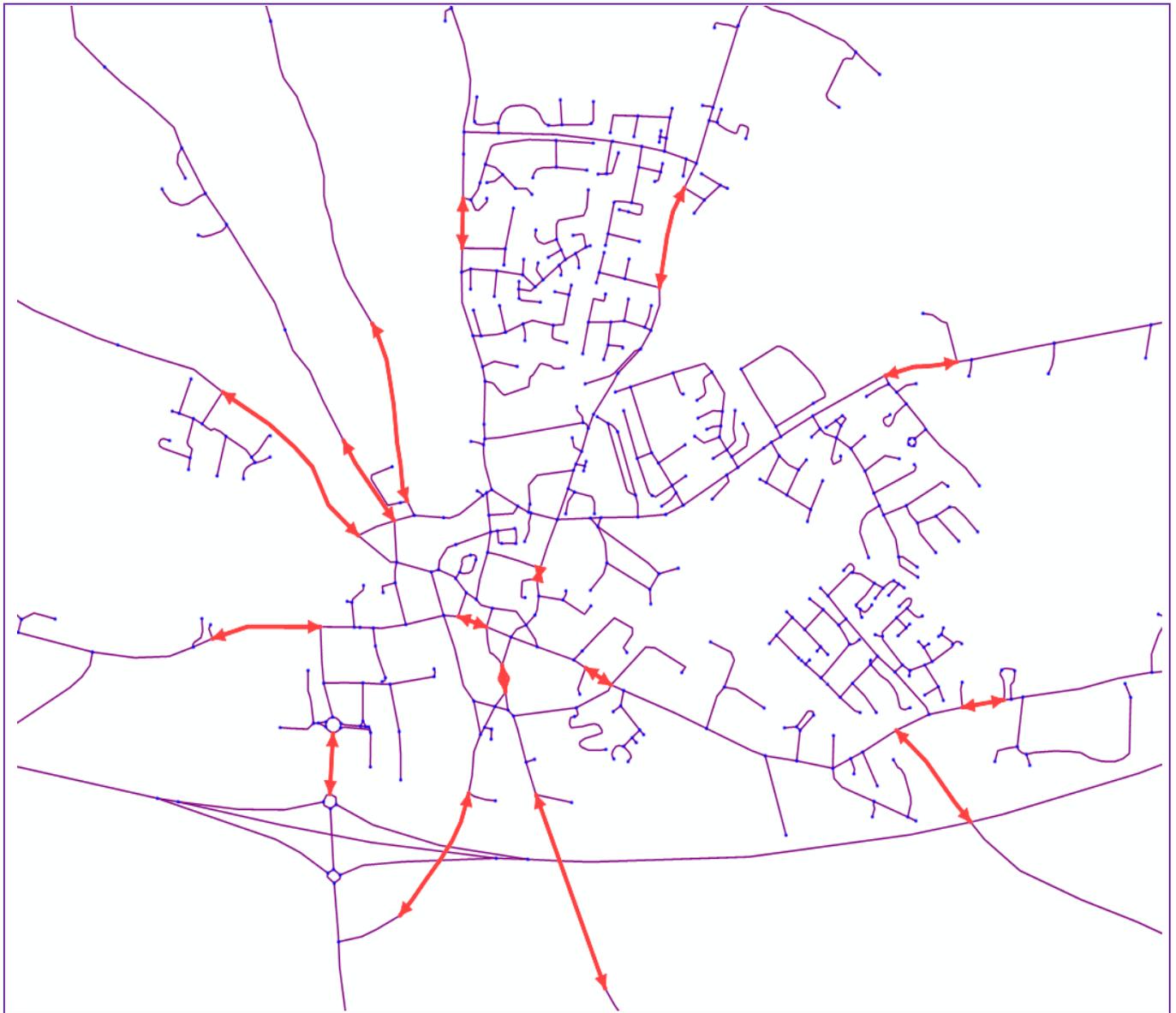


Figure 2.7 Inner and Outer cordon Locations

## 2.6 Model Calibration/Validation

The purpose of model calibration has been to ensure that the model accurately reflects the existing traffic movements across Kildare Town and environs.

Calibration has been an iterative process, whereby the model has been continually revised to ensure that the most accurate replications of the base year conditions are represented.

### 2.6.1 Matrix Estimation

Matrix Estimation (ME) has been the process, in which, the number of trips assigned along a model link has been adjusted to match an observed total. ME have be undertaken manually through:

- flow bundle analysis; and
- the "TFlow Fuzzy" matrix estimation tool provided in VISUM ("TFlow Fuzzy" is designed to automatically adjust trip matrices to match modelled volumes to observed volumes along multiple links or turns).

Initially, the Kildare Town Model has been calibrated utilising flow bundle analysis as it has allowed greater control over the calibration process than "TFlow Fuzzy".

Subsequently, flow bundle matrices have been extracted, examined and adjusted to match observed flows, upstream and downstream of the point at which the flow bundle was taken.

Finally, ME adjustments have been undertaken using "TFlow Fuzzy" process using the selected traffic counts.

### 2.6.2 Calibration & Validation Criteria

The model calibration process has been undertaken based on the requirements of the 'TII PAG Unit 5.1: Construction of Traffic Models' and with reference to the calibration/validation criteria outlined in Table 5.1.3 of that document.

The 'TII PAG Unit 5.1: Construction of Traffic Models' specifies the acceptable values for modelled and observed flow comparisons and suggests how calibration should relate to the magnitude of the values being compared.

A summary of these targets is shown in **Table 2.3**.

**Table 2.3 Model Calibration Criteria: Individual Flows**

Class Test	Criteria and Measure	Guideline
	<b>Assigned Hourly Flows (e.g. links or turning movements) vs. Observed Flows:</b>	
1	Individual flows within 100 vph for flows <700 vph	
2	Individual flows within 15% for flows 700 – 2700 vph	> 85% of cases
3	Individual flows within 400 vph for flows > 2700 vph	

The standard method that has been used to compare modelled values against observations on a link, has involved the calculation of the Geoff E. Havers (GEH) statistic (Chi-squared statistic), incorporating both relative and absolute errors; the GEH statistic is a measure of comparability that takes account of not only the difference between the observed and modelled flows, but also the significance of this difference with respect to the size of the observed flow, and is calculated as follows:

$$GEH = \sqrt{\frac{(M - O)^2}{0.5(M + O)}}$$

Where  $M$  = Modelled Flow and  $O$  = Observed Flow.

Guidance in the PAG sets out the following criteria in relation to GEH values (**Table 2.4** refers):

**Table 2.4 Model Calibration Criteria: GEH Values**

Criteria and Measures	Requirement
GEH statistic: Individual flows: GEH < 5	> 85% of cases

### 2.6.3 Calibration Results

A total of 43 links flows have been used in the calibration process, the results of which are summarised in **Table 2.5** and **Table 2.6**.

In some instances, turning flows of zero have been observed for individual movements.

**Table 2.5 Link Calibration Results: Individual Flows - % of Calibration Sites Meeting Individual Flow Criteria**

Time Period	Total Traffic	Link Flows		Required
		LGVs	HGVs	
AM Peak	100%	100%	100%	>85%
PM Peak	95%	100%	95%	>85%

**Table 2.6 Link Calibration Results: GEH Values - % of Calibration Sites with GEH < 5**

Time Period	Total Traffic	Link Flows		Required
		LGVs	HGVs	
AM Peak	100%	100%	100%	>85%
PM Peak	86%	84%	91%	>85%

The comparison of modelled and observed flows has demonstrated that the AM and PM Peak period models have exceeded the flow criteria requirement for all user classes.

Likewise, the GEH results have shown that the AM Peak and PM Peak periods models have also exceed the criteria for all user classes.

In addition to the link calibration, additional turning data has been used in the model calibration as outlined in **Table 2.7** and **Table 2.8**.

**Table 2.7 Turn Calibration Results: Individual Flows - % of Calibration Sites Meeting Individual Flow Criteria**

Time Period	Total Traffic	Link Flows		Required
		LGVs	HGVs	
AM Peak	100%	100%	100%	>85%
PM Peak	93%	93%	100%	>85%

**Table 2.8 Turn Calibration Results: GEH Values - % of Calibration Sites with GEH < 5**

Time Period	Total Traffic	Link Flows		Required
		LGVs	HGVs	
AM Peak	93%	93%	89%	>85%
PM Peak	79%	79%	100%	>85%

The results have confirmed that the models have been calibrated to the standard compliant with the PAG criteria for all user classes in the AM Model. However, for the PM Model, only 79% of the turns achieve the required GEH value of <5 for LV.

Validation has used a small proportion of data sites (not used in calibration), to verify the acceptability of the model. Model validation comprises the comparison of calibrated flows against an independent dataset which was not used as part of the calibration process.

Validation checks have included:

- Additional link flows;
- Turning flow validation; and
- Overall model validation (e.g. journey times)

The model has also been checked against the O-D data, collected as part of the ANPR, although this is not required under the PAGs.

## 2.6.4 Validation of Link Flows

A total of 217 observed and modelled link flows have been compared at a number of validation sites, which have been kept exclusive of the calibration data.

The permissible difference has been calculated for each value (based on the observed figure) and compared with that which has been modelled.

Validation results are summarised in **Table 2.9** and **Table 2.10**.

**Table 2.9 Validation Results: Individual Flows - % of Validation Sites Meeting Individual Flow Criteria**

Time Period	Total Traffic	Link Flows		Required
		LGVs	HGVs	
AM Peak	95%	96%	100%	>85%
PM Peak	94%	94%	100%	>85%

**Table 2.10 Validation Results: GEH Values - % of Validation Sites with GEH < 5**

Time Period	Total Traffic	Link Flows		Required
		LGVs	HGVs	
AM Peak	81%	81%	98%	>85%
PM Peak	75%	75%	100%	>85%

A comparison against the validation counts has shown that the AM and PM Peak period models all have exceed the PAG requirements for the validation of traffic flow. However the percentage of links achieving the GEH criteria of <5 for AM & PM models have been 81% and 75% respectively, considering the total traffic.

## 2.6.5 Validation of Journey Times

As part of the validation process, the modelled journey times have been compared against the surveyed journey times, to ensure the model has given a reasonable representation of existing conditions. The results of the journey time validation are presented in **Table 2.11** and **Table 2.12** for the AM and PM peak hours, respectively, for the sections shown in **Figure 2.5**.

**Table 2.11 AM Peak Modelled/Observed Journey Times**

Route	Direction	Observed (sec)	Modelled (sec)	% Difference	Validated
1	EB	503	459	-9%	✓
	WB	757	449	-41%	✗
2	SB	477	535	12%	✓
	NB	872	409	-53%	✗
3	SB	405	386	-5%	✓
	NB	200	230	15%	✓
4	EB	331	441	33%	✗
	WB	672	541	-19%	✗
5	EB	180	187	4%	✓
	WB	120	172	43%	✓
6	EB	213	159	-25%	✓
	WB	140	159	14%	✓
Percentage Validated					67%

Table 2.12 PM Peak Modelled/Observed Journey Times

Route	Direction	Observed (sec)	Modelled (sec)	% Difference	Validated
1	EB	412	438	6%	✓
	WB	506	488	-4%	✓
2	SB	507	529	4%	✓
	NB	444	405	-9%	✓
3	SB	197	359	82%	✗
	NB	123	204	66%	✗
4	EB	470	424	-10%	✓
	WB	415	472	14%	✓
5	EB	200	256	28%	✓
	WB	180	214	19%	✓
6	EB	133	161	21%	✓
	WB	110	157	43%	✓
<b>Percentage Validated</b>					<b>83%</b>

Since modelled journey times have been within 15% of observed data or within 1 min difference, they have been considered to be validated.

Percentage of routes validating the Journey time criteria have been 67% in AM peak Model and 83% in PM peak model.

### 2.6.6 Calibration and validation outcome

The results of the model calibration process have shown that the model has been calibrated in line with the guidance set out in the TII Project Appraisal Guidelines.

The model has been calibrated both in terms of screenlines and link flows, with observed traffic flows and traffic patterns (as determined by the traffic surveys) suitability reflected in the both the AM and PM peak hours base year model.

The calibration results for AM Peak for individual flows on links have been 100% passing whereas for PM Peak, the lights vehicles have been calibrated to 95%. The GEH statistics passing for individual counts for links have been 95% and 86% respectively.

The calibration results for AM peak for individual Turns have been 100% passing whereas for PM peak have been 95%. The GEH statistics have been 93% and 79% respectively.

The validation results for AM Peak for individual flows on links have been 95% passing whereas for PM Peak, the LGVs have been calibrated to 94%. The GEH statistics passing for individual counts for links have been 81% and 75% respectively.

The percentage validation of Journey times for AM and PM Peaks have been 67% and 83%.

In summary, the base year models have been calibrated and validated to an acceptable level for the modelling of Kildare's transport projects, including the Kildare Town Northern Link and South Green Access Improvement project.

## Appendix A – Junction Information

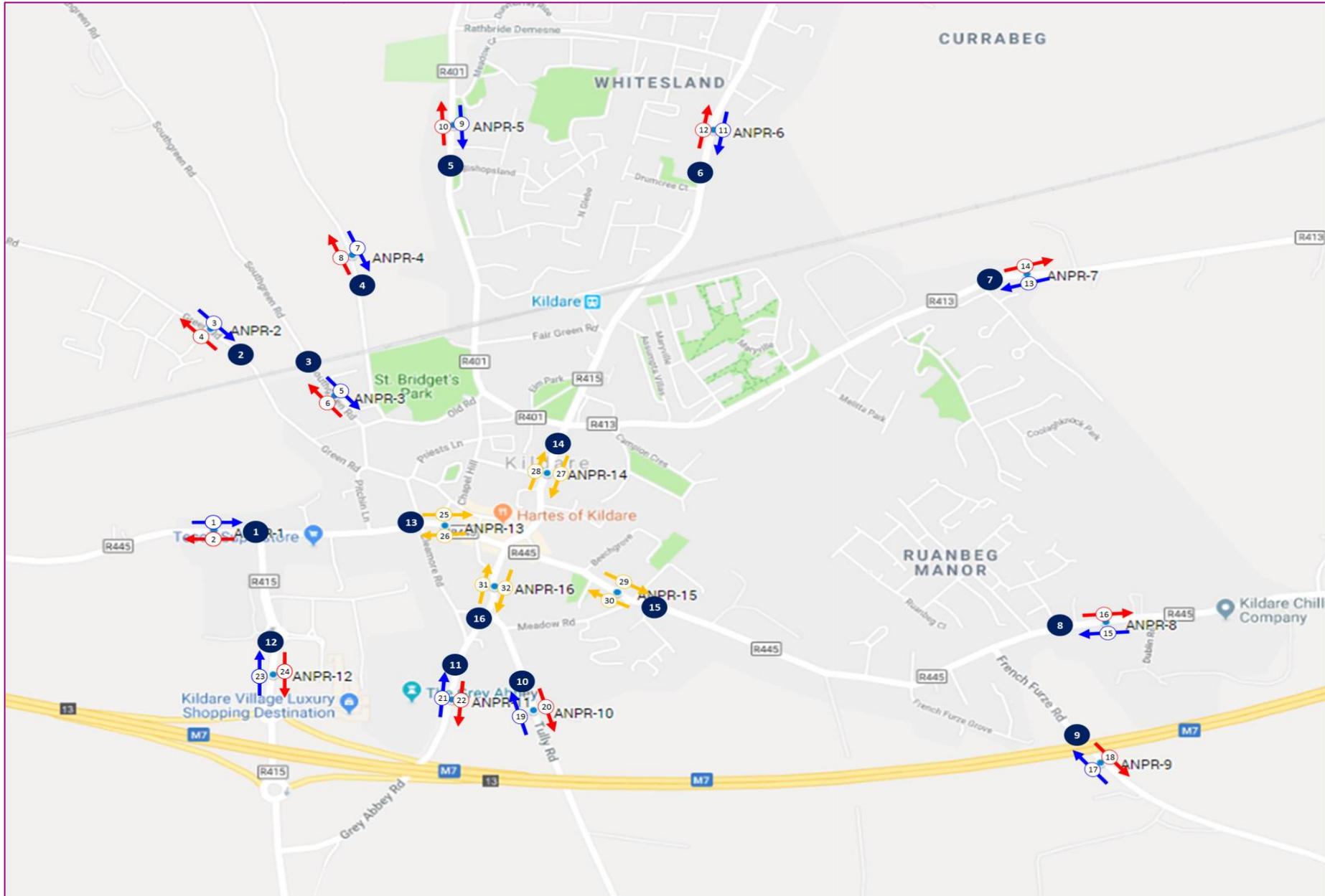
List of Junctions and arms of each junction are listed below

- Junction 1: Pigeon Lane / Monasterevin Road (R445)(E) / Monasterevin Road (R445)(W);
- Junction 2: Southgreen Road / Friary Road / Pigeon Lane / Green Road;
- Junction 3: Southgreen Road / Bothairín na gCorp / Green Road / Car Park Access;
- Junction 4: Site 04 - Old Road(NNW) / Old Road(E) / Bothairín na gCorp;
- Junction 5: Dunmurray Road (R401)(NNW) / Dunmurray Road (R401)(SE) / Old Road;
- Junction 6: Station Road (R415)(NNE) / Melitta Road / Station Road (R415)(SSW) / Dunmurray Road (R401);
- Junction 7: Bride Street(NE) / Market Square(SSE) / Bride Street(WSW) / Market Square(NW);
- Junction 8: Bride Street(NNE) / R445(ESE) / Bride Street(SSW) / R445(WNW);
- Junction 9: White Abbey Road / Claregate Street / Academy Street / Monasterevin Road (R445);
- Junction 10: Bride Street(NNE) / Bride Street(SE) / Grey Abbey Road / Cleamore Road;
- Junction 11: Tully Road(NW) / Car Park Access / Meadow Road / Tully Road(SSE);
- Junction 12: R415(N) / Grey Abbey Road / R415(S);
- Junction 13: R415(N) / M7 (on-slip) / R415(S) / M7 (off-slip);
- Junction 14: R415(N) / M7 (off-slip) / R415(S) / M7 (on-slip);
- Junction 15: R415(NNW) / Kildare Village Outlet Shopping Access / R415(S) / Modus Link Access
- Junction 16: Monasterevin Road (R445)(E) / R415 / Monasterevin Road (R445)(W);
- Junction 17: R445(E) / Tesco Entrance / R445(W);
- Junction 18: Dunmurray Road(N) / Fair Green Road / Dunmurray Road(S) / Unnamed Road;
- Junction 19: Dunmurray Rise(NNE) / Rathbride Demesne / Dunmurray Rise(S) / Car Park Access;
- Junction 20: Station Road(NNE) / Station Road(SSW) / Rathbride Demesne.
- Junction 21: Station Road(NNE) / Station Road(SSW) / Fair Green Road.
- Junction 22: Car Park Access / Magee Terrace / R445(ESE) / Meadow Road / R445(WNW).
- Junction 23: R445(ENE) / French Furze Road / R445(WSW).

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# Appendix B – O-D movements

## B.1 OD Vehicle count from ANPR Analysis – AM Peak

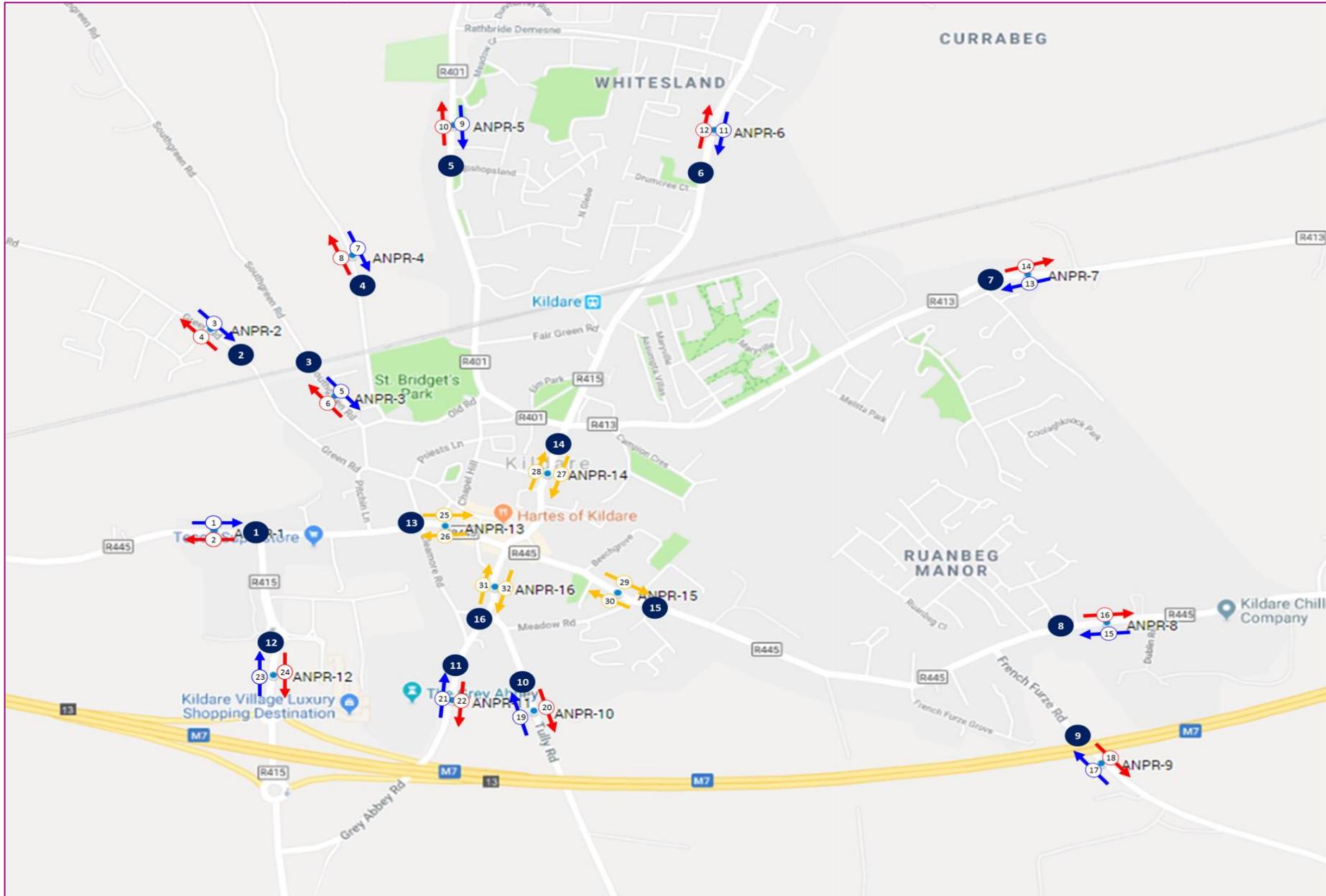


ANPR Survey Locations



		Destination																																
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	Total
Origin	19	0	1	0	1	0	0	0	0	0	10	0	3	0	2	0	4	0	0	0	1	0	0	0	0	0	0	0	7	0	2	2	0	33
	20	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	21	0	1	0	0	0	0	0	0	0	4	0	10	0	4	0	9	0	2	0	5	0	3	0	1	0	0	1	14	0	1	5	0	60
	22	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	23	0	16	0	4	0	4	0	0	0	31	0	17	0	6	0	5	0	2	0	1	0	1	0	19	1	1	0	11	8	0	0	0	127
	24	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	25	0	2	0	1	0	0	0	0	0	1	0	6	0	1	0	8	0	3	0	2	0	1	0	0	0	4	0	6	13	3	0	0	51
	26	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	2	0	0	0	0	0	0	0	0	1	0	2	0	0	0	6
	27	0	7	0	0	0	0	0	1	0	3	0	0	0	4	0	14	0	12	0	1	0	3	0	2	0	0	0	7	6	0	0	8	68
	28	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	1	0	0	1	0	1	0	0	0	4
	29	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	10	0	5	0	1	0	0	0	0	0	0	0	0	0	0	0	0	17
	30	0	2	0	0	0	0	0	0	0	22	0	4	0	5	0	1	0	1	0	0	0	0	0	5	0	0	1	6	3	1	0	2	53
	31	0	0	0	0	0	0	0	0	0	4	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	1	0	0	0	13
	32	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	3	0	0	0	0	1	0	0	0	0	5
	<b>Total</b>	0	55	0	11	0	5	0	5	0	127	0	73	0	82	0	102	0	50	0	20	0	20	0	87	7	11	20	68	55	22	8	23	851

## B.2 OD Vehicle count from ANPR Analysis – PM Peak



ANPR Survey Locations



		Destination																																
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	Total
Origin	19	0	1	0	0	0	1	0	2	0	0	0	3	0	0	0	5	0	0	0	5	0	3	0	1	0	0	0	9	0	0	3	1	34
	20	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	21	0	2	0	0	0	0	0	0	0	0	0	5	0	1	0	11	0	0	0	6	0	18	0	3	0	0	0	3	2	2	6	0	59
	22	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	23	0	25	0	4	0	2	0	2	0	8	0	8	0	0	0	8	0	0	0	2	0	1	0	33	2	5	0	5	2	0	0	0	107
	24	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	25	0	2	0	1	0	0	0	0	0	0	0	8	0	1	0	3	0	5	0	0	0	1	0	1	0	9	0	7	8	1	0	4	51
	26	0	0	0	0	0	0	0	1	0	0	0	1	0	0	0	3	0	0	0	0	0	1	0	0	0	0	0	0	1	0	0	0	7
	27	0	9	0	2	0	0	0	0	0	0	0	0	0	0	0	1	0	1	0	1	0	13	0	6	0	1	0	7	8	0	0	2	51
	28	0	0	0	0	0	0	0	0	0	2	0	6	0	1	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	1	0	0	12
	29	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	16	0	3	0	1	0	2	0	0	0	0	0	2	0	0	0	0	27
	30	0	5	0	0	0	1	0	1	0	1	0	4	0	0	0	0	0	1	0	0	0	1	0	8	0	0	2	7	7	0	0	2	40
	31	0	3	0	0	0	0	0	0	0	3	0	3	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	6	1	0	0	0	18
	32	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	1	0	0	0	3	0	17	0	0	0	1	0	0	0	1	0	0	25
<b>Total</b>		0	114	0	22	0	9	0	9	0	31	0	59	0	29	0	84	0	23	0	36	0	117	0	110	4	25	26	77	52	41	9	12	889

