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Traffic and Transport Assessment Proposed Social Housing at Craddockstown, Naas, Co. Kildare

Traffic and Transport Assessment
Proposed Social Housing at Craddockstown, Naas, Co. Kildare

Document Control Sheet

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ORS

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Executive Summary

ORS has been commissioned by Hayes Higgins Partnership to carry out a Traffic and Transport Assessment (TTA) for the construction of a Social Housing at Craddockstown, Naas, Co. Kildare. This document forms part of the planning application and should be read in conjunction with all drawings, reports, specifications, and particulars associated with the planning application.

This TTA will examine existing and proposed traffic conditions and transport activity to determine the effects on the surrounding road network of the proposed development.

The proposed development will involve the construction of 28No. residential dwellings comprising of 21No. houses and 7No. apartments. The proposed development will include all site works associated with the above.

The site will have a new access road from the Craddockstown Road to the north of the site. The proposed layout includes 34No. car parking spaces.

Kildare County Council requested that a Traffic Assessment was carried out as part of this application and that the report should focus on 4No. junctions in the vicinity of the site location to assess existing and future traffic flow related to the proposed development. The junctions would cover the traffic in:

- 4-arm Ballycane Road(W)/ Craddockstown Road(N)/ Ballycane Road(E)/ Craddockstown Road(S) junction to the northwest of the site;
- 3-arm Craddockstown Road (N)/ Craddockstown Road (S)/ Oak Glade Close junction to the north of the site;
- 3-arm Craddockstown Road (N)/ Craddockstown Road (S)/ Ban na Greinne junction to the north of the site;
- 3-arm Craddockstown Road (N)/ Craddockstown Road (S)/ Eustace Demesne Drive junction to the north of the site.

Automated junction turning counts were undertaken on Thursday the 20th of June 2024 at the four junctions by a third-party company, IDASO, which were provided to ORS by the design team.

The traffic profile likely to be generated by the development was obtained from TRICS (Trip Rate Information Computer System) database and split through the junctions in proportion to the existing traffic flows measured in the traffic counts.

The Kildare County Council planning website was consulted to include proposed developments in the area that will affect the road network in the vicinity of the proposed development.

The junctions analysed in this traffic assessment were assessed against the TII threshold and it was found that the development is anticipated to generate greater than 10% increase in traffic at one of the junctions during both the morning and evening peak period, where congestion does not exist. Also. One of the junctions surpasses the 5% threshold. To demonstrate that the proposed development will not negatively affect the existing public roads, a junction modelling was conducted to evaluate the traffic impact generated by the proposed development across all future design years.

The 4No. junctions were tested using *Junctions 9* (*PICADY* and *OSCADY*) software for the AM and the PM peak conditions under conservative future projections and Central background Traffic Growth for the Base year (2024), year of opening (2026), 5-years and 15-years after development conclusion.

Upon building the traffic model for the proposed development, junctions' capacity analysis was carried out to assess the potential worst-case scenarios associated with the development.

Following the results of the traffic analysis, it can be concluded that the demand will be higher than the capacity of the signalised junction (Junction 1) in the future year scenarios, with or without the proposed development.

The proposed social housing will not affect the 4No. junctions significantly. The trip generation associated with the development will increase the RFC by a maximum of 5% of the capacity of the junctions subject of this traffic assessment (at Junction 1).

1 Introduction

The purpose of this Traffic and Transport Assessment is to address the traffic and transport-related issues that may arise in relation to the proposed social housing in Naas, Co. Kildare, and how the development will integrate with the existing traffic flows in the vicinity of the site.

This report will follow the principles set out in the TII Publication PE-PDV-02045 'Traffic and Transport Assessment Guidelines' and will assess the impact the proposed development, and the associated traffic flows, will have on the public road network in the vicinity of the site.

1.1 Objectives of the Traffic and Transport Assessment

The objective of this report is to assess the impact the proposed development will have on the surrounding road network. Refer to **Figure 1.1** overleaf which shows the junctions selected for this assessment.

- Junction 1: 4-arm Ballycane Road(W)/ Craddockstown Road(N)/ Ballycane Road(E)/ Craddockstown Road(S) junction;
- Junction 2: 3-arm Craddockstown Road (N)/ Craddockstown Road (S)/ Oak Glade Close junction;
- Junction 3: 3-arm Craddockstown Road (N)/ Craddockstown Road (S)/ Ban na Greinne junction; and
- Junction 4: 3-arm Craddockstown Road (N)/ Craddockstown Road (S)/ Eustace Demesne Drive junction.

In summary, the objectives of this report are to assess:

- The prevailing traffic conditions on the public road network in the vicinity of the proposed development.
- The potential effect on the surrounding road network due to the anticipated traffic generated by the proposed development.
- The pedestrian and cyclist connectivity in the vicinity of the development.
- The parking requirements for the site.

Figure 1.1: Location of Analysed Junctions (Source: Google maps)

1.2 Methodology

The Transport Infrastructure Ireland (TII) Publication PE-PDV-02045, published in June 2014, sets out the methodology to be followed in any given Traffic and Transport Assessment. The methodology that will be used in this assessment follows the guidelines set in this document and can be outlined as follows:

- Automatic junction turning counts (JTC) have been undertaken by IDASO on Thursday 20th June 2024 along the 4No. junctions described in **Section 1.1** above.
- The traffic distribution splits on the public road network could be determined from the traffic counts and applied to the anticipated future generated traffic as a result of the proposed development.
- The predicted traffic to be generated by the proposed development was obtained using TRICS (Trip Rate Information Computer System) traffic generation software.
- The effect caused by the proposed development in the neighbouring junctions could be calculated using the existing traffic flows and the expected additional traffic to be generated by the development.

- The effect the proposed development will have on the road network was assessed against the TII threshold and it was found that one of the aforementioned junctions rises above the threshold of 5% increase in traffic, and one of the junctions has a greater than 10% increase in traffic.
- The junction was modelled using the Transport Research Laboratory (TRL) software *Junctions 9* (*PICADY* and *OSCADY*) for future design years using Central Sensitivity Growth Factors for Co. Kildare to obtain the existing and proposed traffic profiles at the junctions analysed for the year of opening, 5-year and 15 years after the completion of the proposed development.
- Parking requirements were assessed against standards set in Chapter 5 and Chapter 15 of the Kildare County Council Development Plan 2023 – 2029.

1.3 Liaison with Kildare County Council

The Roads Planning Section of Kildare County Council has requested by correspondence with the design team that a traffic impact assessment was carried out on the 4No. aforementioned junctions.

2 The Proposed Development

2.1 Development Site Location

Craddockstown is located in the southeastern part of Naas. The proposed site has an area of approx. 0.83ha and is surrounded by the Eustace Demesne housing estate to the north and east and agricultural lands to the south. It is bounded by the Craddockstown Road (L6043) to the west. The site boundaries are partially formed by mature planting and hedgerows. There are residential properties on the north-west and south-west boundaries.

Figure 2.1 shows the location of the proposed development in the context of Naas town.

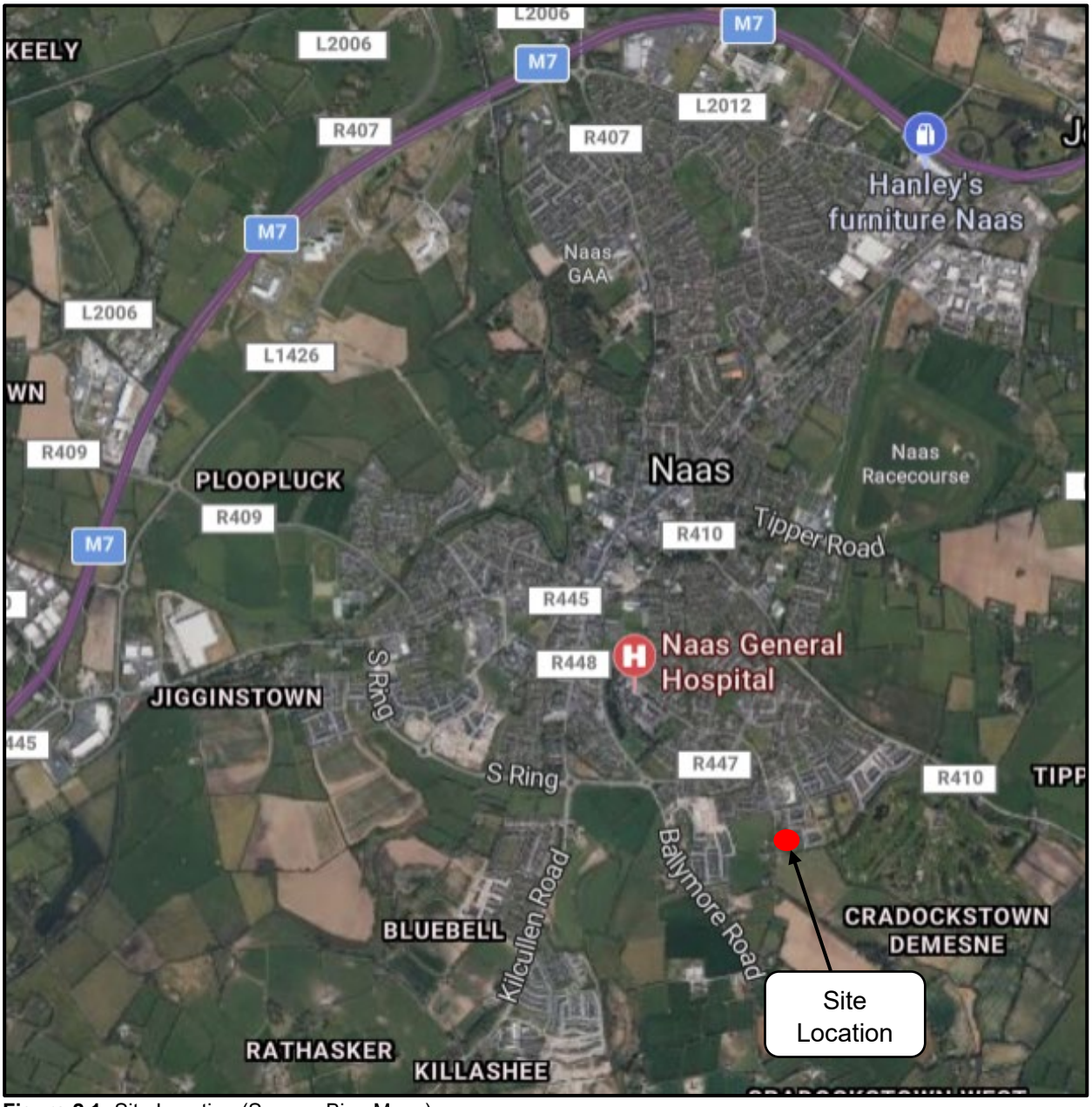

Figure 2.1: Site Location (Source: Bing Maps)

2.2 Existing Premises and Land Use

According to the draft Naas Local Area Plan 2021 – 2027 zoning map shown in **Figure 2.2** below, the location of the proposed development is zoned *'New Residential'.*

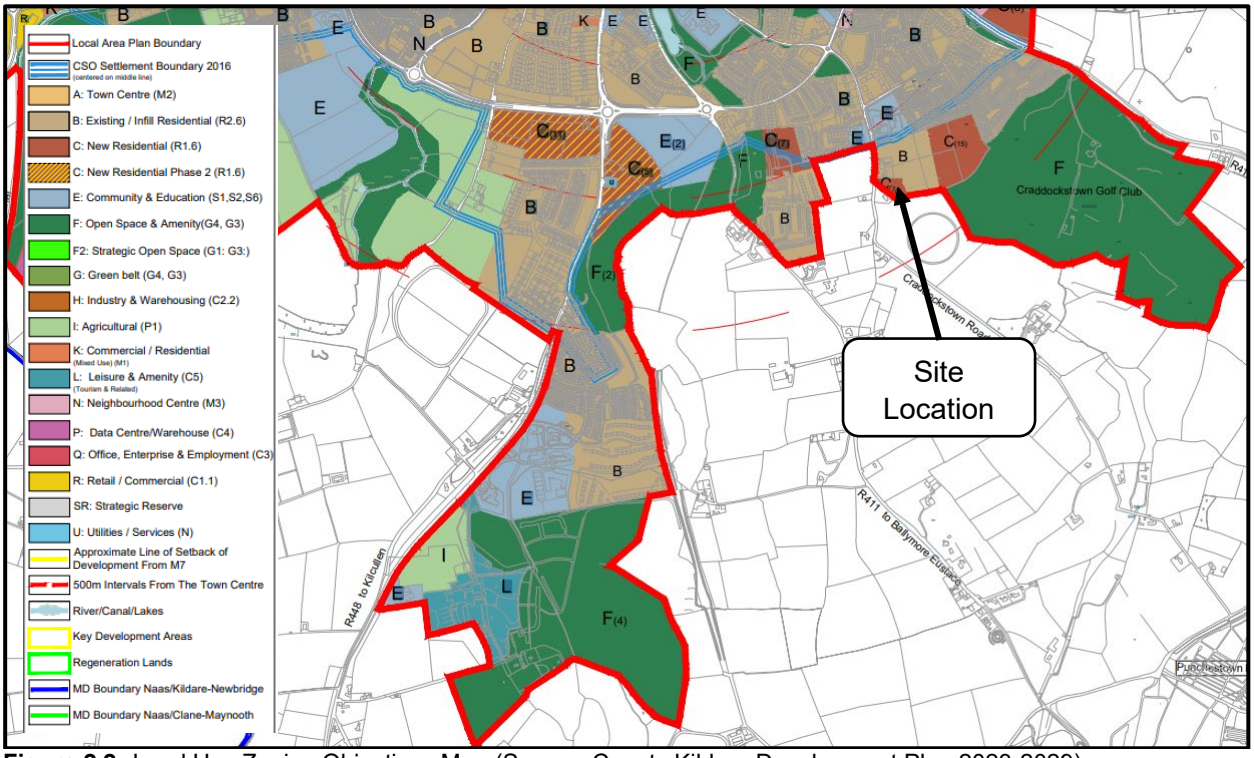

Figure 2.2: Land Use Zoning Objectives Map (Source: County Kildare Development Plan 2023-2029)

2.3 Description of the Proposed Development

The proposal put forward by Hayes Higgins Partnership is to construct a social housing in Craddockstown, Naas, Co. Kildare.

The proposed development includes:

i. 28 no. residential units including 21 no. houses and 7 no. apartments comprising 7 no. one-bed units; 14 no. two-bed units; 6 no. three-bed units; and 1 no. four-bed unit including sensory room; with renewable energy design measures (which may be provided externally) for each housing unit;
ii. Landscaping works include provision of:
- (a) open space and kick about areas;
- (b) natural play features;

iii. Pedestrian and cycle connection to the adjacent Eustace Demesne estate;
iv. Associated site and infrastructural works including provision for:
- (a) 1 no. ESB substation and switchroom;
- (b) car and bicycle parking;
- (c) public lighting;
- (d) bin storage;
- (e) temporary construction signage;
- (f) estate signage; and

(g) varied site boundary treatment comprising walls and fencing;
v. all associated site development works, including removal of some existing vegetation from the site in advance of construction works.

The proposed development will involve the construction of 28 dwelling units comprising of:

- Type A 3 x 1B2P Apartments 3 storeys (GF UD)
- Type B 14 x 2B4P (2 Storeys)
- Type B1 2x 3B6P (2 Storeys) GF Bedroom (UD)
- Type C 4 x 1B2P Apartments (GF UD)
- Type D 4 x 3B4P (2 Storeys)
- Type E 1 x 4B7P (2 Storeys) GF Bedroom and Sensory Room (UD).

Figure 2.3 shows the proposed site layout.

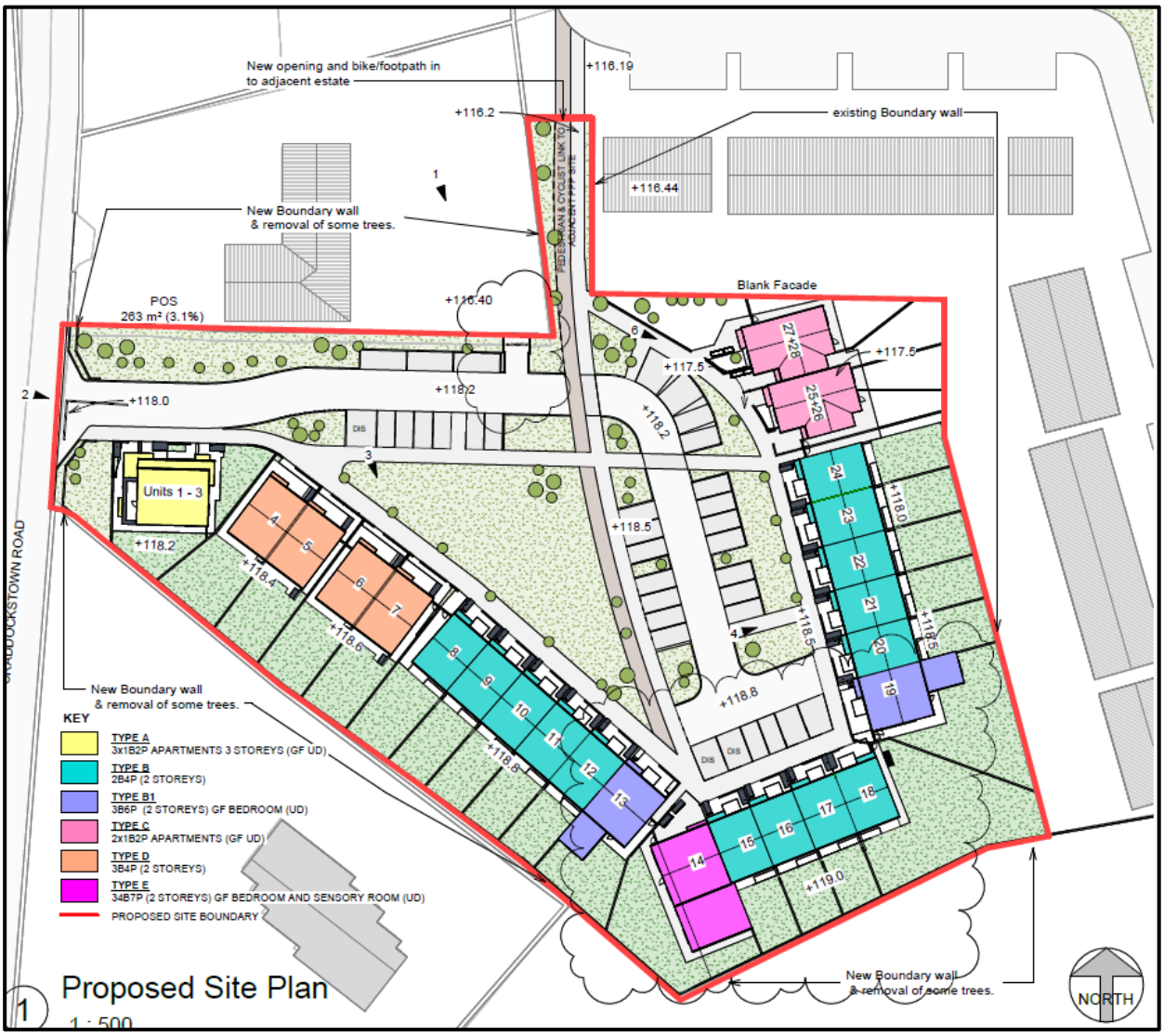

Figure 2.3: Proposed site layout (Source: Hayes Higgins Partnership)

2.4 Accessibility and Parking

Naas is characterised as a "*Key town"* within Co. Kildare, together with Maynooth. According to the Kildare County Council Development Plan (2023 – 2029), this means *"large economically active service and/or county towns that provide employment for their surrounding areas and with high-quality transport links and the capacity to act as growth drivers to complement the Regional Growth Centres*". For County Kildare, Naas and Maynooth are the only regionally identified settlements within the County.

Naas town is located close to the M7 motorway in approximately 35km southwest of Dublin. M7 connects Naas with Limerick which is in approximately 170km to the southwest.

2.4.1 Site Access

The proposed social housing will be accessed from Craddockstown Road to the west of the site. The new priority T-junction will be the vehicular access/egress point to the development and will also serve as pedestrian/ cyclist access. Additionally, the site will feature a pedestrian/ cyclist link to the adjacent housing estate (Eustace Demesne) to the north of the site, see **Figure 2.4** below.

The access road L6043 (Craddockstown Road) in vicinity of the proposed site currently features no footpaths to accommodate site users arriving on foot, and no cycle lanes.

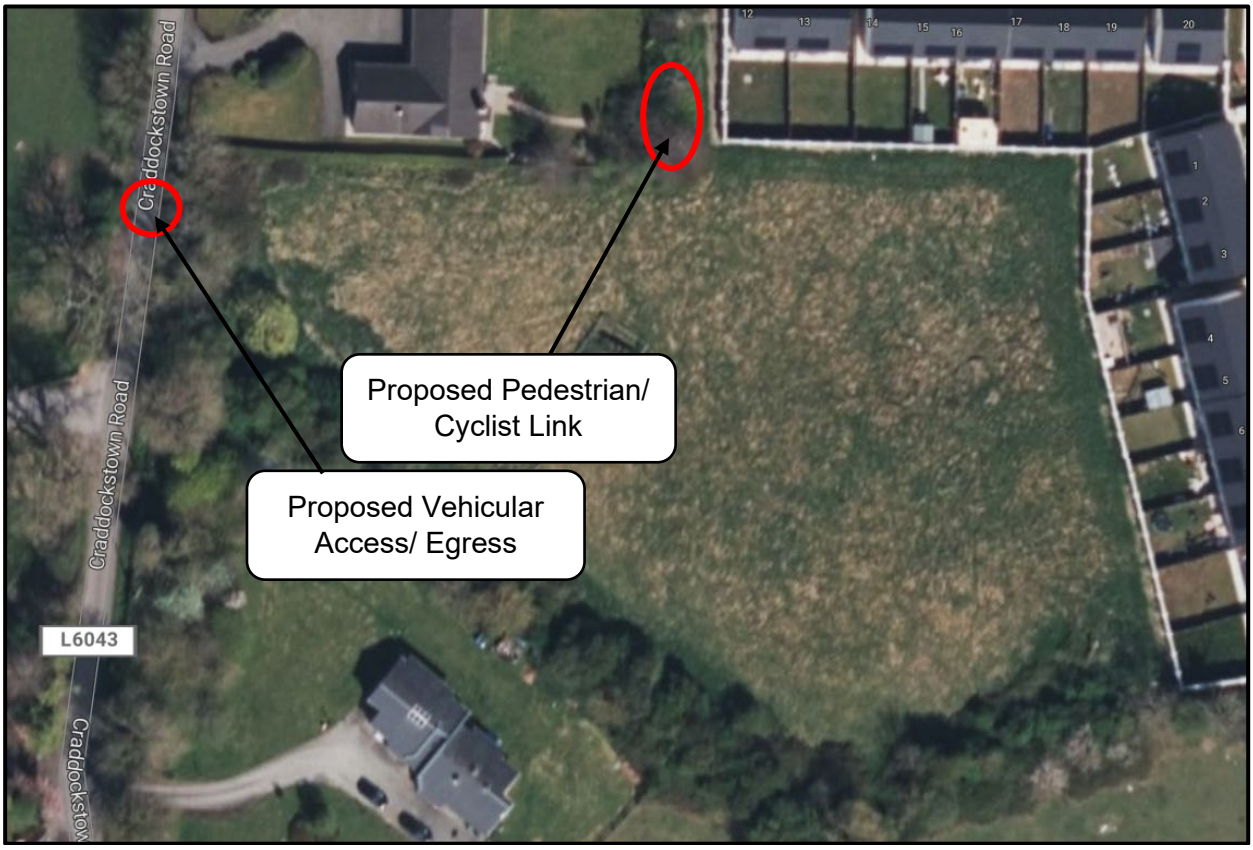

Figure 2.4: Proposed Development Site Access Points (Source: Bing Maps)

The Design Manual for Urban Roads and Streets (DMURS) states that the desired sightline for a 50km/h road at a 2.4m setback is 45m. Sightline of 45m appear to be achievable from the site egress onto Craddockstown Road provided that the hedgerows and vegetation bordering the site, as well as any overgrown vegetation within the visibility splay, are trimmed accordingly.

See **Figures 2.5 to 2.7** overleaf for details on the existing road arrangements.

Figure 2.5: Location of Site Access (Source: ORS, 10/07/2024)

Figure 2.6: View to the North from Site Access Location (Source: ORS, 10/07/2024)

Figure 2.7: View to the South from Site Access Location (Source: ORS, 10/07/2024)

2.4.2 Internal Road Layout

The main function of the internal road network is to provide a safe and efficient parking and circulatory system that reduces the potential for conflicting movements, which can comfortably accommodate the anticipated volume of arrivals and departures without presenting a safety risk and not having a negative effect on the road network that it connects to.

The access point will function as a priority T-junction for both entry and exit purposes. The internal road will extend from the proposed access point to the east of the site and then to the south featuring a bent in the road alignment, as shown in **Figure 2.3**. The site will feature a pedestrian access route positioned alongside the internal road, ensuring safe movement for pedestrians.

2.4.3 Servicing Arrangements

The internal road network is primarily designed to accommodate private vehicles, which is the main vehicle type to use the development. However, in addition, adequate provision to facilitate the circulation and turning movements of emergency vehicles and bin collection vehicles to be provided within the site. An Autotrack analysis should be carried out to confirm that waste collection vehicles and emergency vehicles, such as ambulances and fire trucks, will be able to manoeuvre the site in a safe and efficient manner.

2.4.4 Car Parking Availability

The Development Management Standards set out in Chapter 15 of the Kildare County Council Development Plan 2023 – 2029 set out maximum car parking standards. An area-based approach has been taken to assess the analysis of car parking depending on the nature and location of the development and its proximity to public transport where possible. It is the policy of the Council to "*balance the demand for parking against the need to promote more sustainable forms of transport, to limit traffic congestion and to protect the quality of the public realm from the physical impact of parking, while meeting the needs of businesses and communities*" (TM P10). Parking standards set out in Table 15.8 to guide proposed development are maximum standards.

According to the NTA Draft Transport Strategy for the Greater Dublin Area 2022-2042, "*the supply and management of parking at destinations is central to the management of travel demand. Limiting the availability of parking spaces and/or increasing the cost of parking will encourage the use of sustainable modes of transport and reduce traffic congestion*".

The proposed development will provide a total of 28No. dwellings and aims to have a total of 34No. parking of which 7No. parking bays for mobility-impaired users. The breakdown of car parking availability is shown in **Table 2.1** below. According to the car parking standards, the parking availability should be maximum 34No. car parking spaces. The total number of the proposed parking spaces is in accordance with the standards stipulated by the Kildare County Development Plan.

Table 2.1 – Car Parking Standards

Development	Car Parking	Number of Units	Maximum Spaces Required	Proposed Parking
House up to and including 3 bed	1 space per unit	20	20	20
House of 4 bedrooms or greater	1 space + 0.5 visitor spaces per unit	1	1.5	2
Apartment	1.5 spaces per unit + 1 visitor space per 4 apartments	7	10.5+2	12

As stated in Chapter 15.7.8 "Car Parking" of the Kildare County Council Development Plan 2023 – 2029, new residential developments should take account of the different criteria regarding car parking: "*Parking spaces for visitors should be a minimum of 10% of the overall number of parking spaces provided in new residential developments*". For the proposed development, minimum 3No. visitors' car parking spaces to be provided in addition to 31No. residents' car parking spaces.

In relation to disabled parking spaces, the development plan states that a minimum of 5% of car parking spaces should be provided for the disabled and mobility impaired in all car parking developments and that they should be located in proximity to building entrance points and

suitably signed/demarcated. For 34No. parking spaces, 5% is 2No. parking bays for mobility-impaired users. The existing proposal includes 7No. parking bays for mobility-impaired users in the proposed site layout.

Mention is given to electric vehicle charging points. It is the policy of the Council to "*Facilitate, along with the NTA and TII, the conversion of the private car fleet to electric ensuring that where car parking is proposed as part of all new developments either public or private, provision is made for all spaces to be dedicated over time to electric cars with provision for charging infrastructure built-in from the outset*" (TM O116). In assessing car parking requirements, the Kildare County Council will require that spaces to be provided are allocated as charging points for electric vehicles, as per "Electric Vehicle Charging Infrastructure Requirements" set out in Table 15.9 and TM O117 of the Kildare CDP: "New buildings containing one or more than one dwelling, which have more than 10 car parking spaces, shall install ducting infrastructure for each car parking space to enable the subsequent installation of recharging points for electric vehicles".

2.4.5 Cycle Storage

TM O38 of the Kildare County Council Development Plan (2023 – 2029) is to "*support the development of accessible and barrier-free cycling as a practical transport choice by providing secure, well-designed and well-lit cycle parking facilities, including electrical and cargo/ delivery bicycle parking in towns, at public service destinations and in all new residential and commercial developments in accordance with cycle parking design guidelines: The National Cycle Manual (NTA, 2011 – or the pending update), The Draft GDA Cycle Network Plan (NTA, 2021) and the Standards for Cycle Parking and Associated Cycling Facilities for New Developments document (Dun Laoghaire Rathdown County Council, 2018)"*. The cycle parking standards are set out in Table 15.4 of the Plan and shall be taken as minimum standards.

The breakdown of bike parking availability for apartments is shown in **Table 2.2** below. There are 7No. one-bedroom apartments in the proposed development. According to the standards, the total bike parking availability should be 11No. spaces.

Table 2.2 – Cycle Parking Standards

Development	Cycle Parking	Number of Units	Required Spaces
Residents	1 space per bedroom	7	7
Visitors	1 space per 2 dwellings	7	4

3 Existing Traffic Conditions

3.1 Existing Road Network

The proposed development will be accessed via Craddockstown Road.

Craddockstown Road is a two-way single carriageway road serving several residential estates to the southeast of Naas town centre. The road runs along the site's western boundary, connecting the Craddockstown with the town centre (to the northwest) and the Local Road L2023 to the southeast. In the vicinity of the proposed site the road is approximately 5m wide and has no provision of a footpath and no formal cycle lane. The speed limit on the road is 50km/h.

Designated footpaths and a two-way formal cycle lane along the Craddockstown Road start at the junction with the Eustace Demesne Drive in approx. 120m to the north from the proposed site entrance. The cycle lane continues up to the junction with Oak Glade Close, connecting the adjacent residential estates with the Naas Community National School. The footpaths are provided on both sides of Craddockstown Road, from the Eustace Demesne Drive to the junction with Ballymore Road (R411) in approx. 1.5km to the northwest from the proposed site.

The carriageway included in this assessment is existing and in active usage; as such, its condition and suitability for purpose are not subject to assessment as part of this report. However, improvement works in vicinity of the proposed site shall be needed including the construction of approximately 120m of footpaths and cycleways along the Craddockstown Road connecting the site with the existing pedestrian/ cycling infrastructure.

For visual details, please refer to **Figure 2.6** and **Figure 2.7** in **Section 2** and **Figures 3.1** and **3.2** below.

Figure 3.1: Craddockstown Road at the Proposed Site Access (Source: ORS, 10/07/2024)

Figure 3.2: View of the Craddockstown Road to the South from the Eustace Demesne (Source: Google Maps Street View, 2023)

3.2 Proposed Transport Infrastructure

The Kildare County Development Plan 2023-2029 recognises the importance of delivering an efficient, integrated, and coherent transport network with the aim to provide economic growth and to shift current transport trends towards more sustainable modes of transport. The Plan states as one objective "*to ensure ongoing competitiveness and the efficient movement of people and goods in the county through the improvement and expansion of the road and street network within the county to support economic development and provide access to new and existing communities, employment areas and development, all while prioritising sustainable modes of transport*".

Chapter 5.2.7 of the Kildare County Development Plan 2023-2029 describes mandatory guidance for all urban roads and streets within the 60 km/h urban speed limit provided in Design Manual for Urban Roads and Streets 2019 (DMURS). It seeks to "*address street design within urban areas and to put well-designed streets at the heart of sustainable communities*" and out a "*clear and integrated design approach which seeks to balance the needs of residents and visitors (place function) with the needs of pedestrians, cyclists, public transport, cars and goods vehicles (the transport function) while incorporating good planning and design practice with a focus on the public realm*".

Policy MT 1 of the Naas Local Area Plan 2021-2027 is "t*o promote enhanced permeability for pedestrians and cyclists within Naas in order to improve access to the town centre, local schools, residential areas, recreational facilities, public transport services and other amenities*". The Plan provides a long-term cycling strategy prepared as part of the Naas/Sallins Transport Strategy. The Strategy seeks to create a "*network of safe, comfortable, coherent and convenient cycling routes. It puts forward measures to ensure that cycling becomes an attractive option for as many local trips as possible, including journeys to work and school. A key part of the future cycle network will be the development of high-quality east-west linkages in the town centre and a high level of connectivity to the future Grand Canal Greenway*", see **Figure 3.3** overleaf.

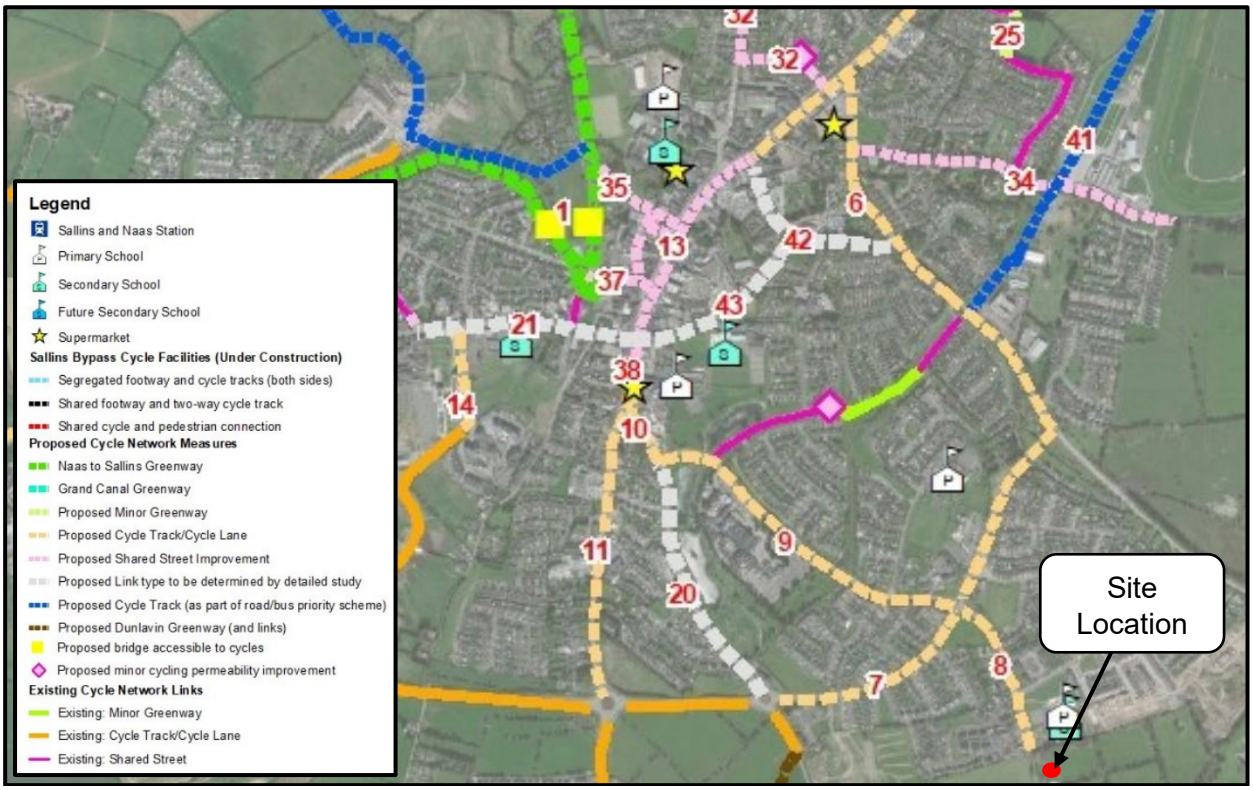

Figure 3.3: Naas/Sallins Cycling Strategy Measures (Source: Draft Naas Local Area Plan 2021-2027)

Kildare County Council proposes to provide a segregated high-quality cycle track on Craddockstown Road as part of the Craddockstown Road Active Travel Scheme (Planning Reference: P82022.16) in 2024. The site is 350m in length and is located between the junction with Ballycane Road and the school campus, see **Figure 3.4** to **Figure 3.6** overleaf.

The Craddockstown Road Active Travel Scheme comprises of:

- The provision of a 3m protected bi-directional cycle track on the north-eastern side of Craddockstown Road;
- The provision of a 2m-wide footpath on either side of Craddockstown Road;
- Replacement of existing road crossing with Toucan crossing;
- The improvement of side road crossing at Oak Glade.

The new cycle track will link the existing two-way cycle infrastructure outside the school campus to the Ballycane Road junction on a segregated bi-directional cycle track.

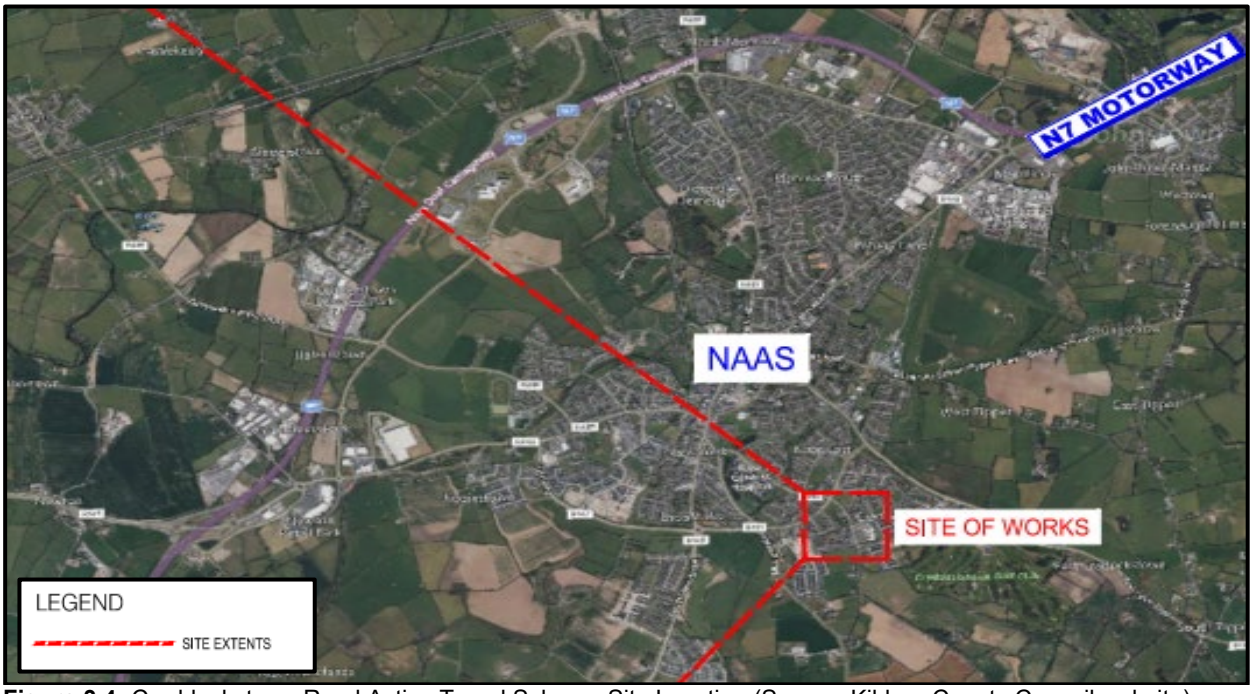

Figure 3.4: Craddockstown Road Active Travel Scheme Site Location (Source: Kildare County Council website)

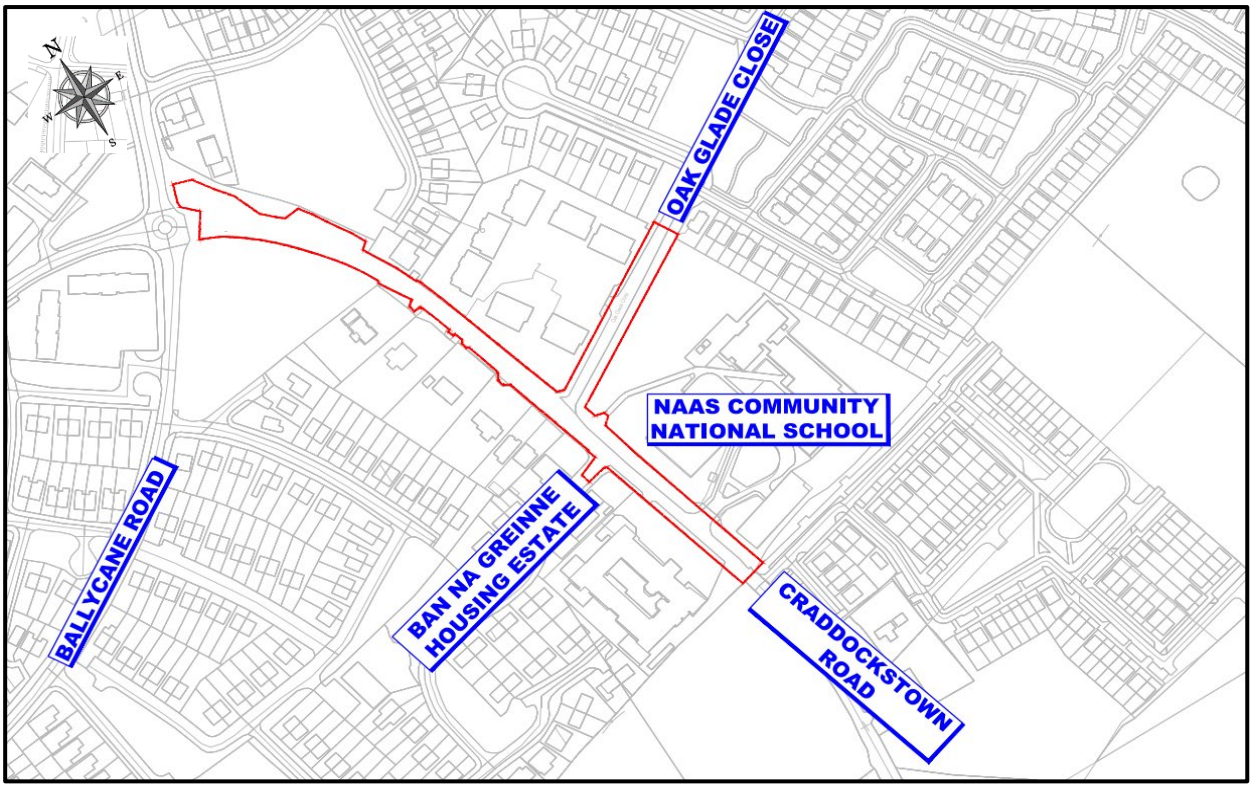

Figure 3.5: Craddockstown Road Active Travel Scheme Site Extents Plan (Source: Kildare County Council website)

Figure 3.6: Craddockstown Road Active Travel Scheme General Arrangement (Source: Kildare County Council website)

It is an objective of the Kildare County Council to "*Facilitate and secure the delivery/implementation of the public transport regional corridor proposals that relate to County Kildare and the County Kildare local route proposals as identified within the National Transport Authority's (NTA) 'The Connecting Ireland Rural Mobility Plan' (November 2021), specifically prioritising the proposed new local route from Naas to Newbridge*" (TM O11). Public transport network proposed by NTA is demonstrated in **Figure 3.7** overleaf. A proposal for the development of Route A33 provides connectivity for the Naas Town Centre and Naas Hospital with Newbridge, Sallins Train Station and Millenium Business Park with a minimum service frequency of 3 return trips a day.

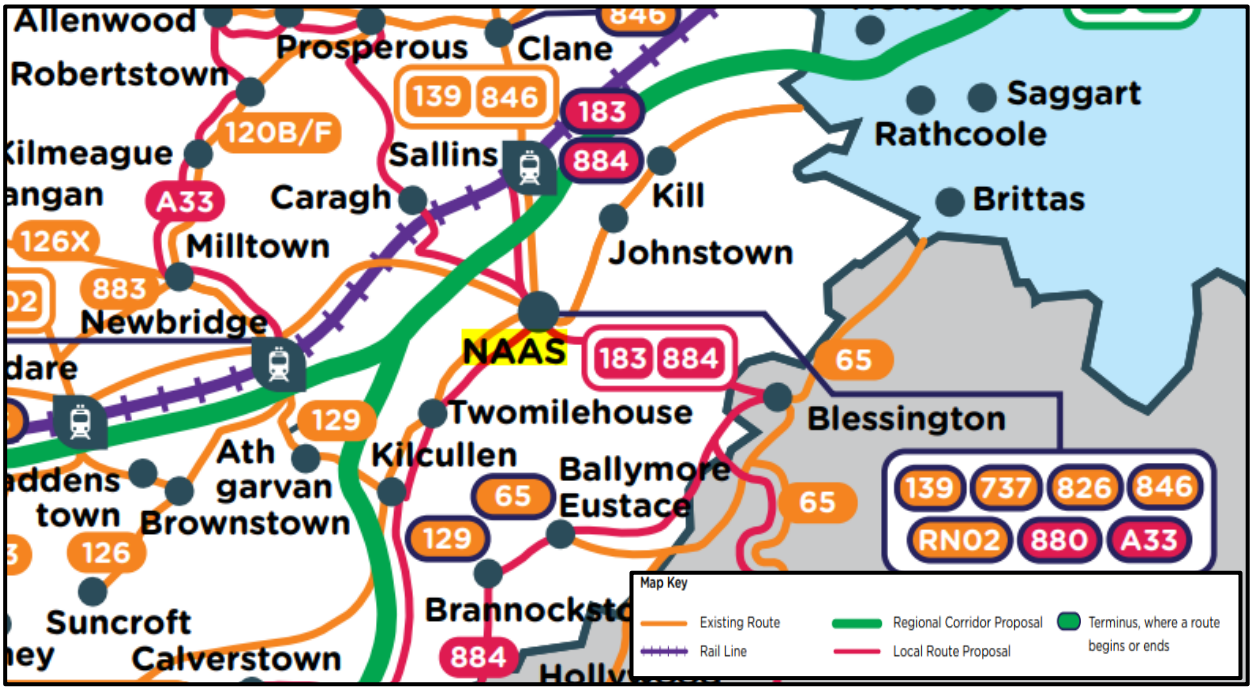

Figure 3.7: Proposed Public Transport Network (Source: NTA)

As a part of the Transport Strategy for the Greater Dublin Area 2016-2035, express services will be provided from the major towns in the GDA hinterland to Dublin City Centre at a frequency which meets demand, including a bus every 30 minutes during peak travel periods from Naas and other RPG Growth Towns (Navan and Wicklow). As passenger demand increases, additional capacity will be added to the bus network where it is required.

A key challenge facing Naas is improvement of connectivity within the town and between land uses for local journeys and the provision of an internal public transport network in and around Naas along with connections to Sallins Railway Station. Objective CSO 1.7 of the Naas Local Area Plan 2021-2027 was to prepare a Joint Integrated Spatial Plan incorporating both Naas and Sallins to provide a single coordinated development strategy. The Naas/Sallins Transport Strategy 2020 has proposed a range of measures for local bus routes, bus interchange and bus priority measures throughout the town. The Transport Strategy selects 3No. local bus routes: Central, Eastern and a longer-term Western Spine Route.

The closest to the proposed social housing development is the Eastern Spine Route highlighted in yellow in **Figure 3.8,** intended to resolve the deficit in public transport access for residents in the housing estates and to link southern, central and northern Naas with the hospital, several schools, the town centre and the train station.

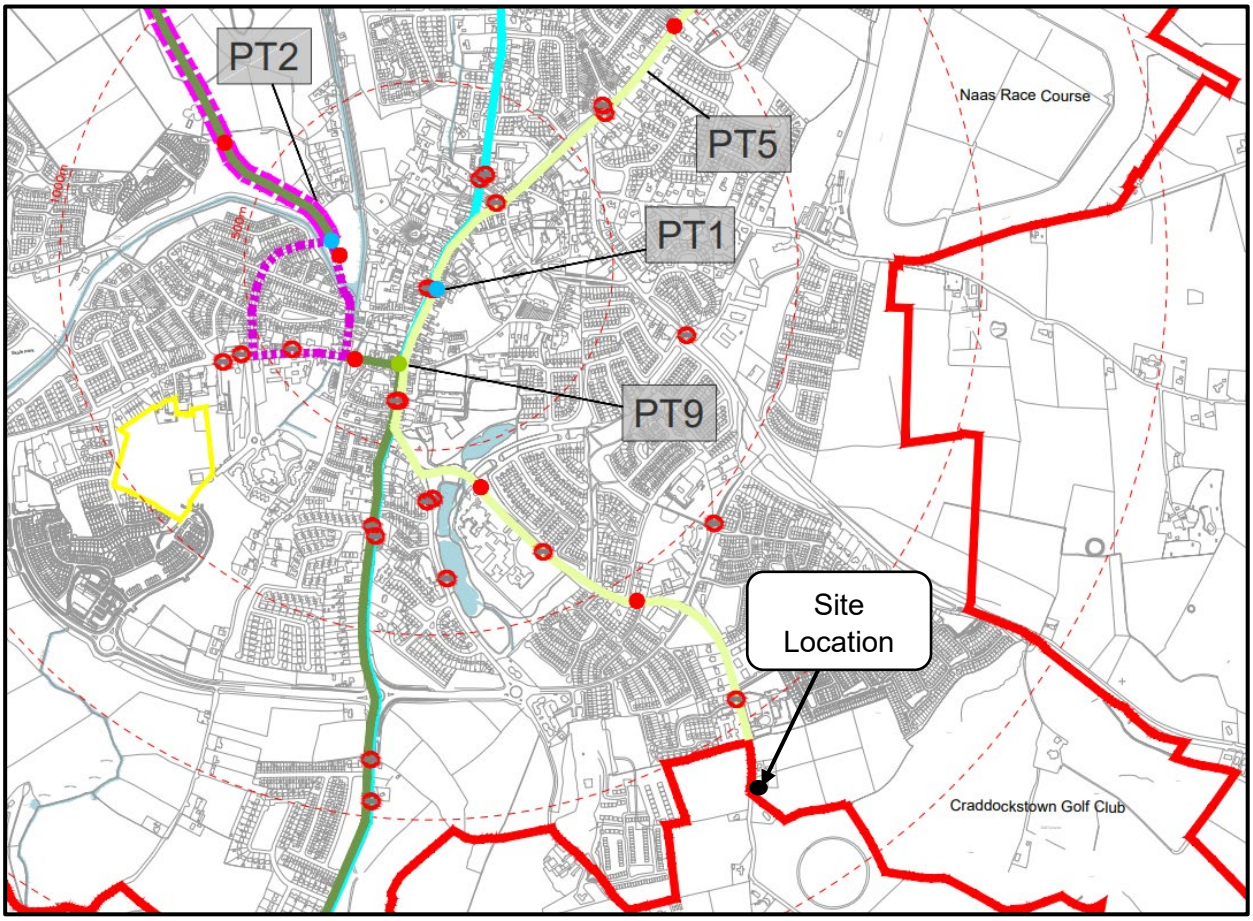

Figure 3.8: Naas/Sallins Transport Strategy Local Bus Routes (Source: Kildare County Council website)

Figure 3.9 overleaf summarises the measures included in the Naas/Sallins Transport Strategy 2020 for all modes of transport.

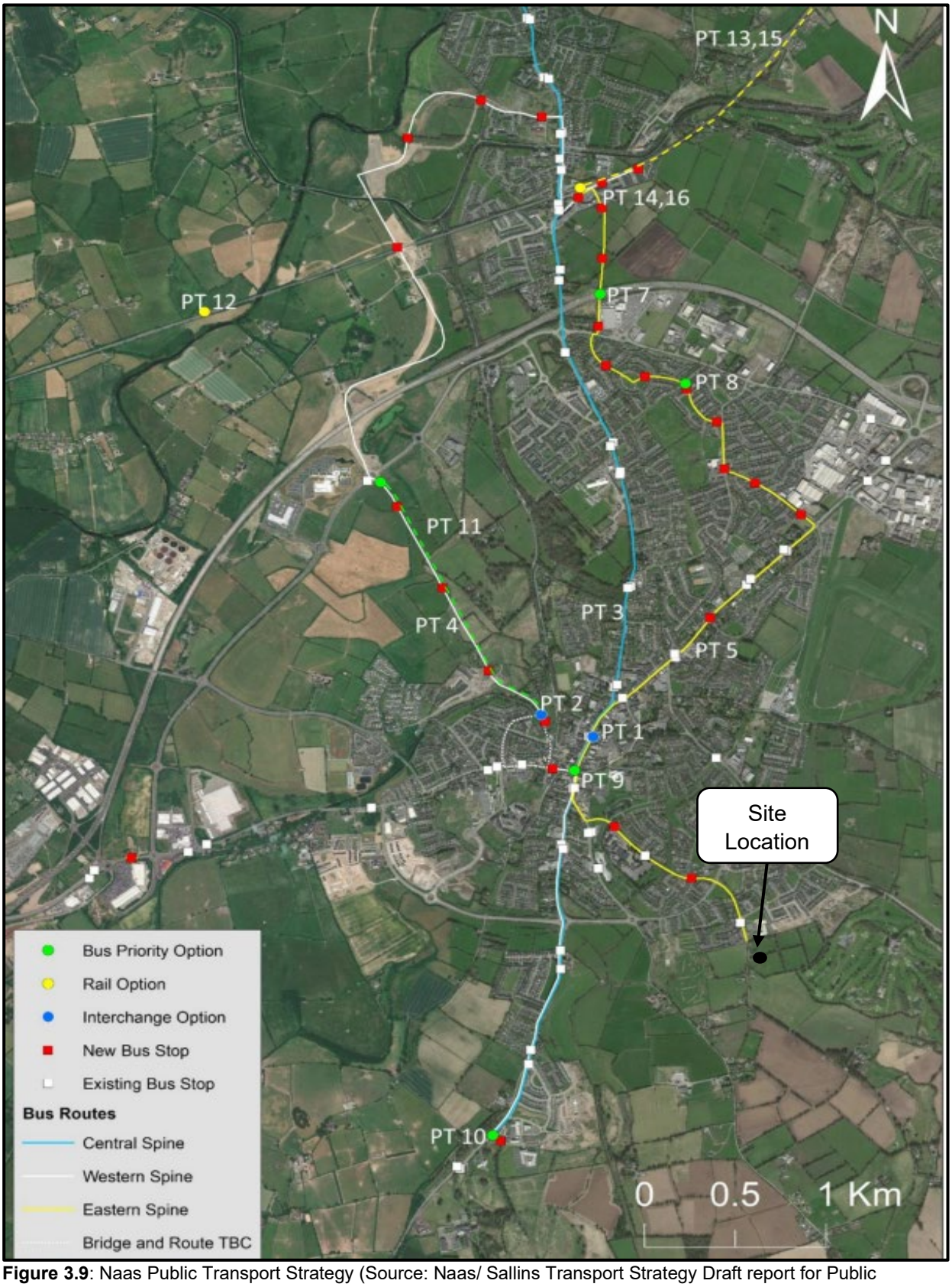

Figure 3.9: Naas Public Transport Strategy (Source: Naas/ Sallins Transport Strategy Draft report for Public Consultation)

3.3 Pedestrian and Cyclist Connectivity

As mentioned before, at present there are footpaths running along Craddockstown Road on both sides of the road and formal cycle lanes on the eastern side of the road, but only up to the Eustace Demesne. Currently there are no footpath or cycle lane available for connection with the proposed development's internal road network.

The subject site is located 2.2km from South Main Street, Naas. Future residents will be able to reach Naas town centre and several other locations within a 30-minute walk. **Figure 3.10** shows the catchment area for a 30-minute walk from the development using the existing infrastructure. The catchment area includes Naas town centre, Naas East, Naas West and Tipper West.

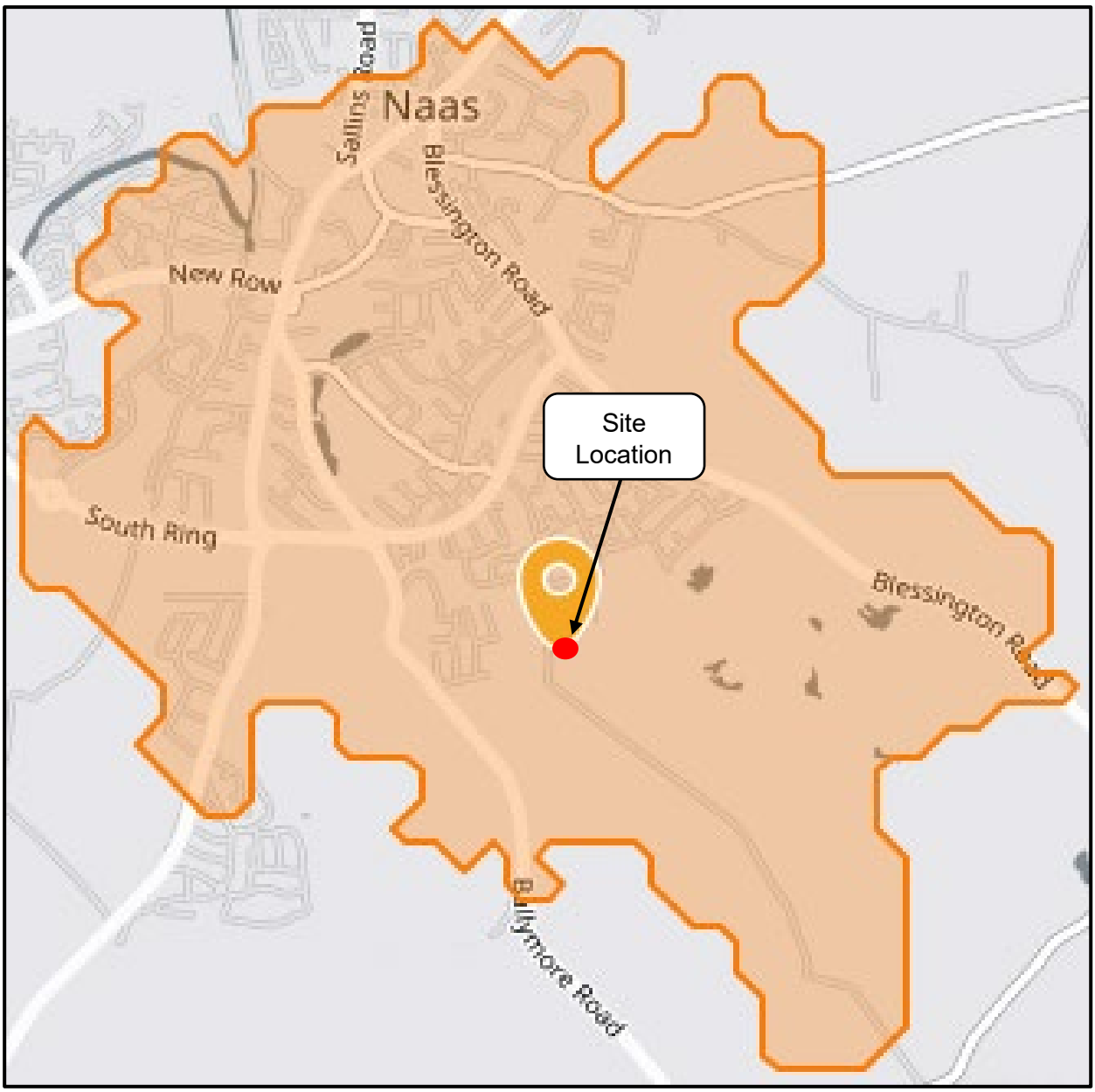

Figure 3.10: Catchment Area for 30-Minutes Walking from Proposed Social Housing (Source: TravelTime.com)

Figure 3.11 below shows the existing footways and cycleways in the surroundings of the proposed social housing development.

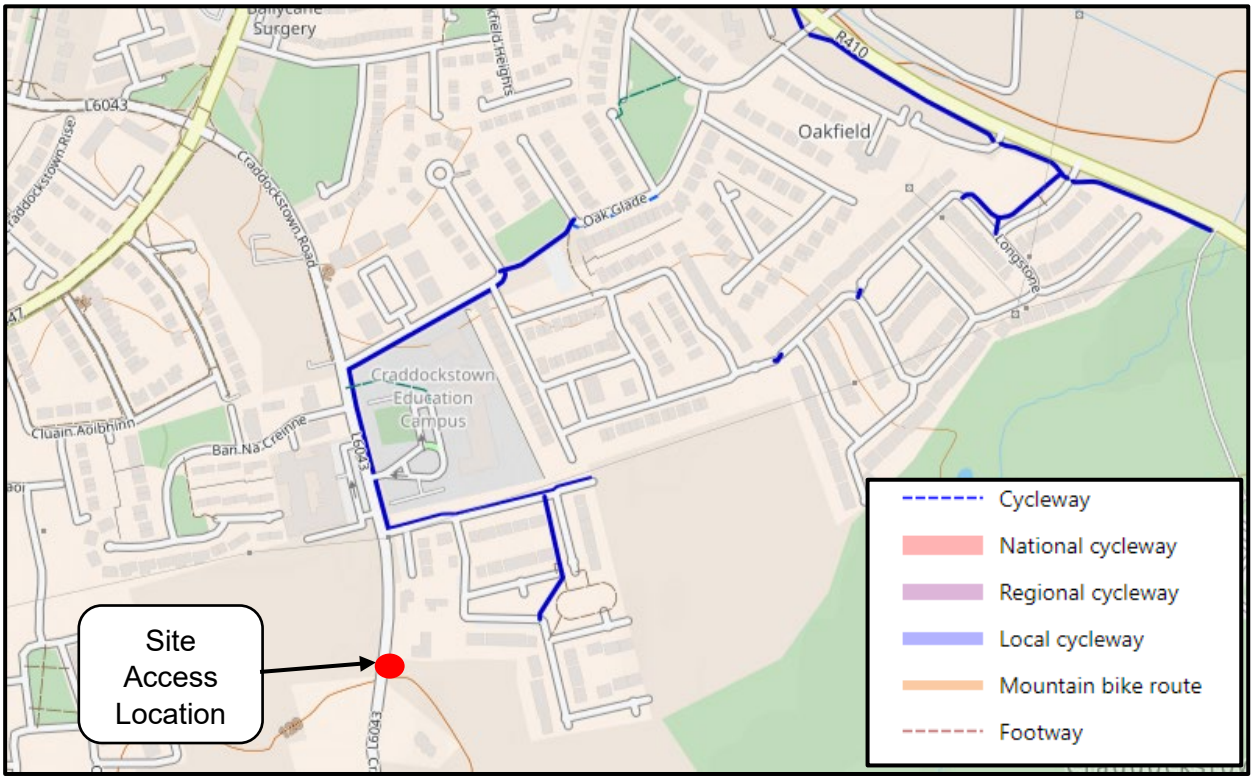

Figure 3.11: Footway and Cycleway in the Surroundings of the Proposed Development (Source: OpenStreetMap)

3.4 Sustainable Transport and Public Transport Provision

The closest bus stops No.11731 and No.11732 are located circa 1km to the northwest of the proposed site entrance, across the road from the Naas Hospital, Naas East, serving routes 139, 183 and 880. Approx. 500m further to the northwest from these bus stops, there is a No.105971 bus stop on Ballymore Road serving route 885.

There are 15No. routes serving Naas, as shown in **Table 3.1** overleaf.

Table 3.1 – Bus Services Available in the Surroundings of the Proposed Development (Source: TFI)					
Route	**Operator**	**Distance**	**Origin**	**Destination**	**Availability**
125	Local Link	2.2km	Newbridge	UCD, Dublin	2 services a day
126	Local Link	2.2km	Rathangan	DCU, Dublin	21 services
130	Local Link	2.2km	Athy	Dublin	5 services
139	JJ Kavanagh & Sons	1km	Naas	Blanchardstown	18 services
183	Local Link	1km	Arklow	Sallins	4 services
717	JJ Kavanagh & Sons	2km	Clonmel	Dublin Airport	2 services
726	Dublin Coach	2.2km	Portlaoise	Dublin Airport	34 services
737	JJ Kavanagh & Sons	2km	Naas	Dublin Airport	6 services
821	Local Link	2.1km	Newbridge	Sallins Train Station	6-7 services
846O	JJ Kavanagh & Sons	2km	Clane	Naas	11 services
880	Local Link	1km	Naas	Carlow	12 services
884	Local Link	1km	Sallins	Ballymore	4 services
885	Local Link	1.5m	Sallins	Baltinglass	10 services
1404	Local Link	2.2km	Blessington	Newbridge	Once a week
RN02	Local Link	2km	Rathagan	Naas	Once a day

Naas is also served by rail located at the Sallins Railway Station in approx. 5km to the northwest of the town, with the following routes serviced:

- Dublin Heuston - Cork (all intermediate stations);
- Dublin Heuston - Galway;
- Dublin Heuston - Limerick and Ennis;
- Dublin Heuston - Waterford;
- Galway - Limerick;
- Grand Canal Dock and Dublin Heuston - Portlaoise.

3.5 Existing Traffic Flows

Junction Turning Counts (JTC) were undertaken at 4No. junctions on Thursday the 20th of June 2024 by a third-party company named IDASO. The traffic counts were carried out during a 12-hour period from 07:00 AM to 07:00 PM and encompass all movements at the junctions. The traffic counts cover movements of pedal cycles, cars, taxis, buses, LGVs, and HGVs, and the final traffic numbers are presented in the form of Passenger Car Units (PCU). PCU is the

impact that a mode of transport has on traffic compared to a single car, e.g., a private car represents 1 PCU whereas an HGV represents 2.3 PCUs.

From the traffic counts, it was observed that the proposed Junction 1 between Craddockstown Road and Ballycane Road has a 12-hour traffic volume of 11,725 vehicles (12,007 PCU's) recorded. The AM and PM traffic peaks were identified at the junction and occur between 08:30 – 09:30 in the morning and between 16:45 – 17:45 in the evening, recording 1327 PCU in the AM peak and 1223 PCU in the PM period.

Junction 2 between Craddockstown Road and Oak Glade Close has a 12-hour traffic volume of 2,625 vehicles (2,535 PCU's) recorded. The AM and PM traffic peaks were identified at the junction and occur between 08:30 – 09:30 in the morning and between 14:30 – 15:30 in the evening, recording 424 PCU in the AM peak and 324 PCU in the PM period.

Junction 3 between Craddockstown Road and Ban na Greinne has a 12-hour traffic volume of 1,698 vehicles (1,660 PCU's) recorded. The AM and PM traffic peaks were identified at the junction and occur between 08:30 – 09:30 in the morning and between 14:15 – 15:15 in the evening, recording 341 PCU in the AM peak and 245 PCU in the PM period.

Junction 4 between Craddockstown Road and Eustace Demesne Drive has a 12-hour traffic volume of 507 vehicles (692 PCU's) recorded. The AM and PM traffic peaks were identified at the junction and occur between 08:30 – 09:30 in the morning and between 14:30 – 15:30 in the evening, recording 85 PCU in the AM peak and 85 PCU in the PM period.

Figures 3.12 to 3.15 and **Table 3.2** summarise the AM and PM traffic flows.

Table 3.2 – June 2024 Traffic Counts

Junctions Names	AM Peak	PM Peak
Junction 1	1327	1223
Junction 2	424	324
Junction 3	341	245
Junction 4	85	85

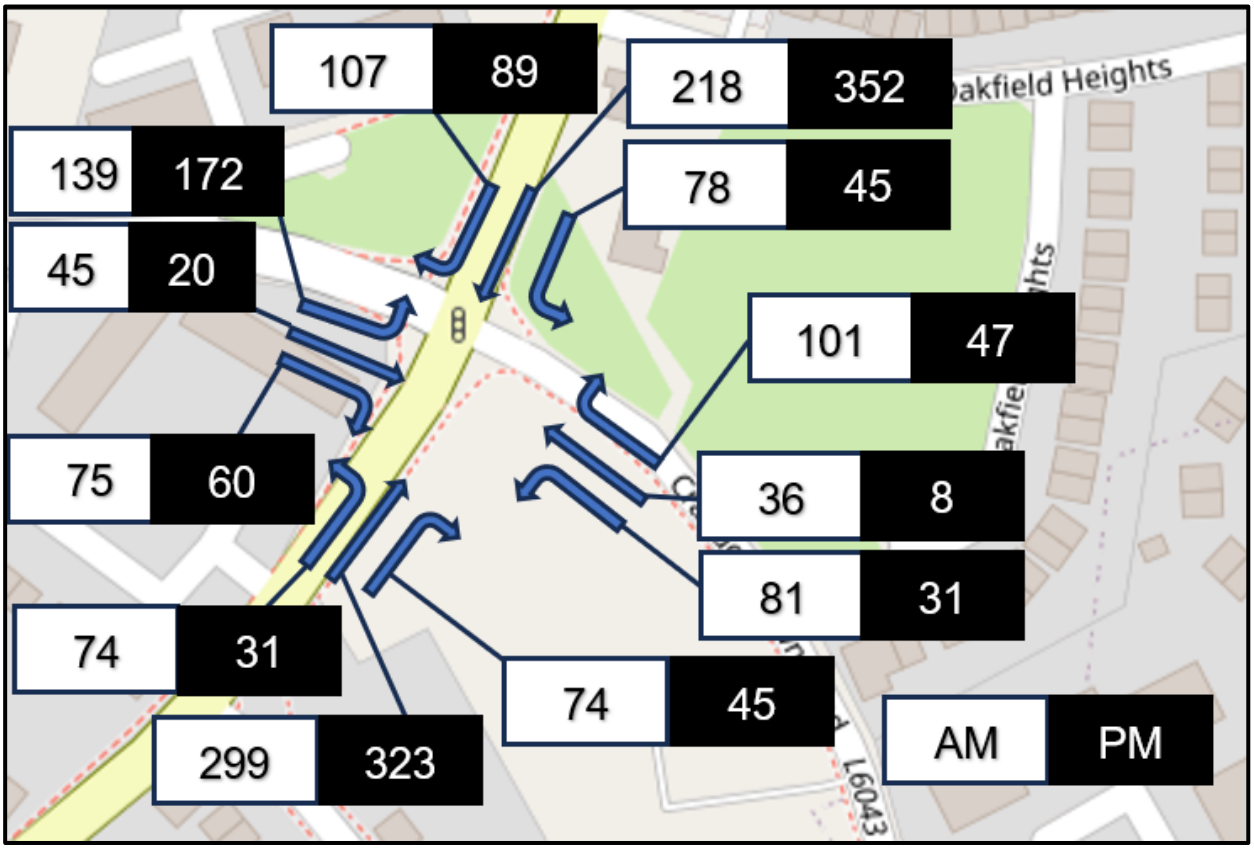

Figure 3.12: Junction 1 AM & PM June 2024 Traffic Counts

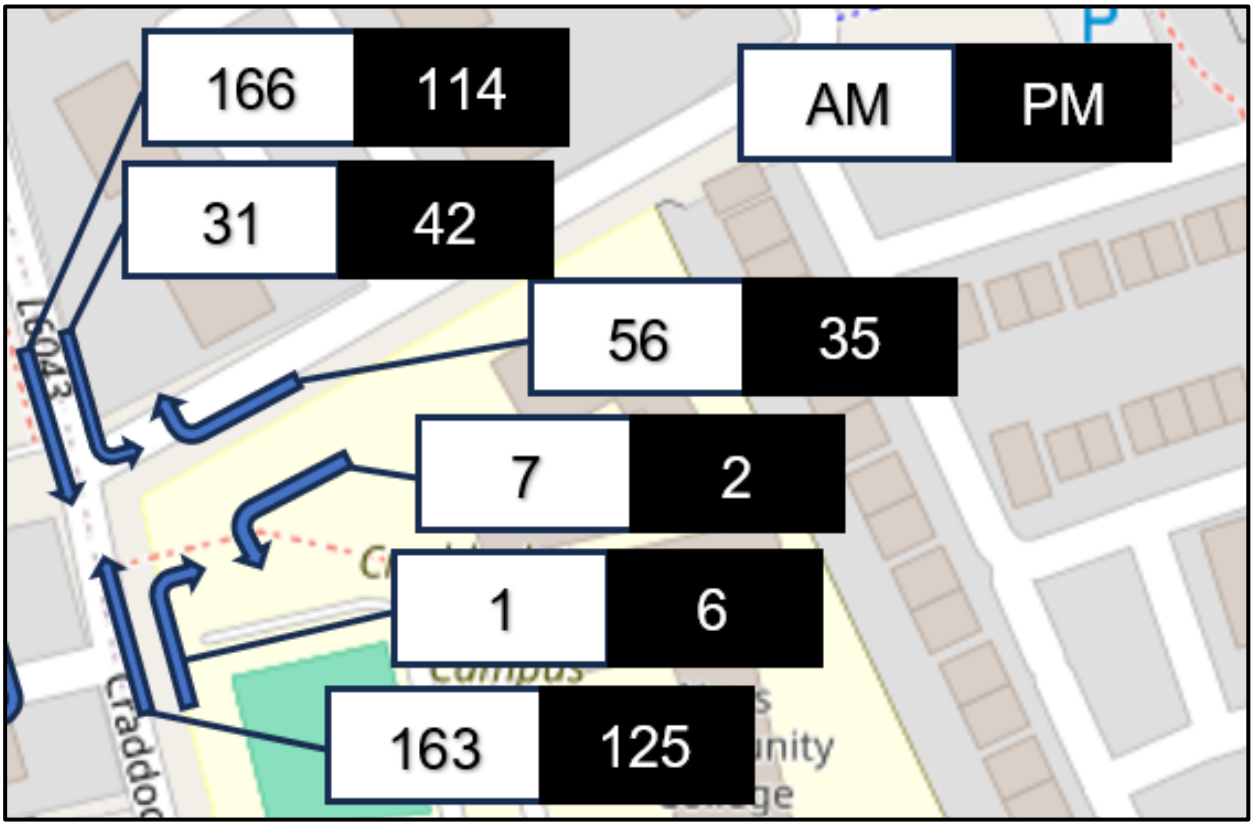

Figure 3.13: Junction 2 AM & PM June 2024 Traffic Counts

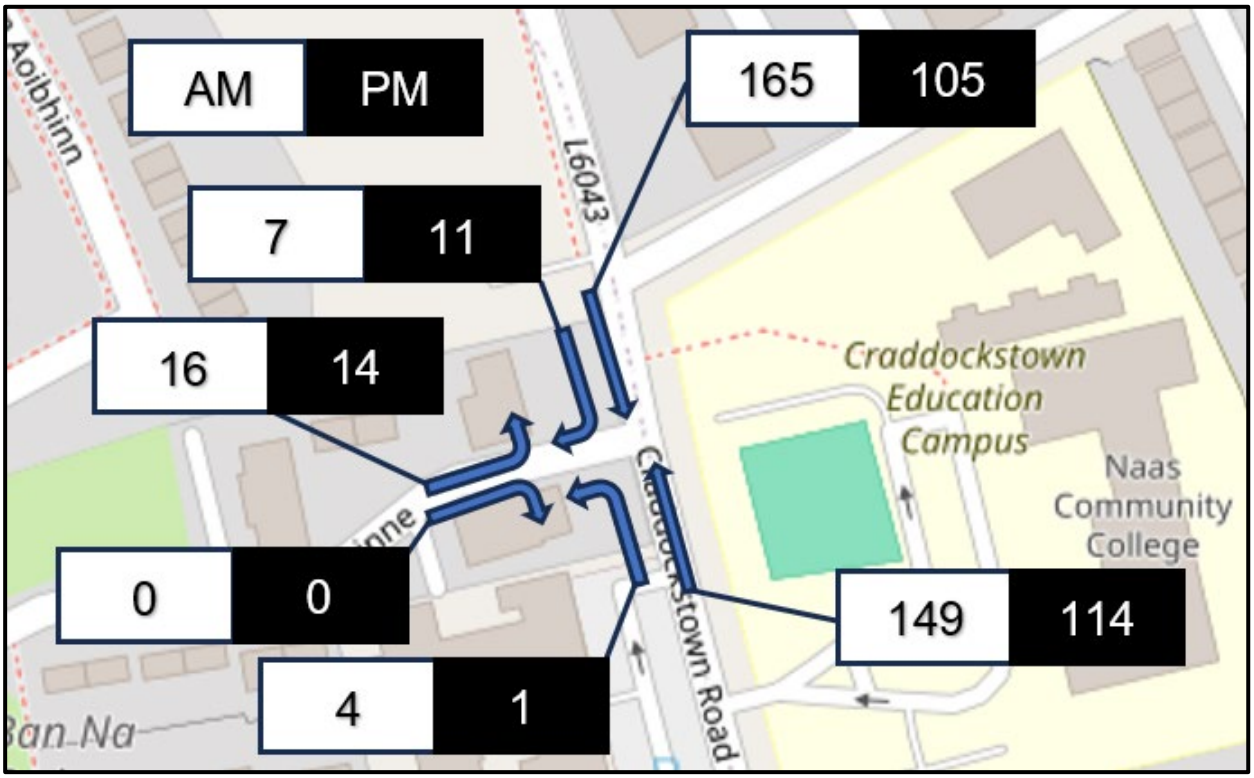

Figure 3.14: Junction 3 AM & PM June 2024 Traffic Counts

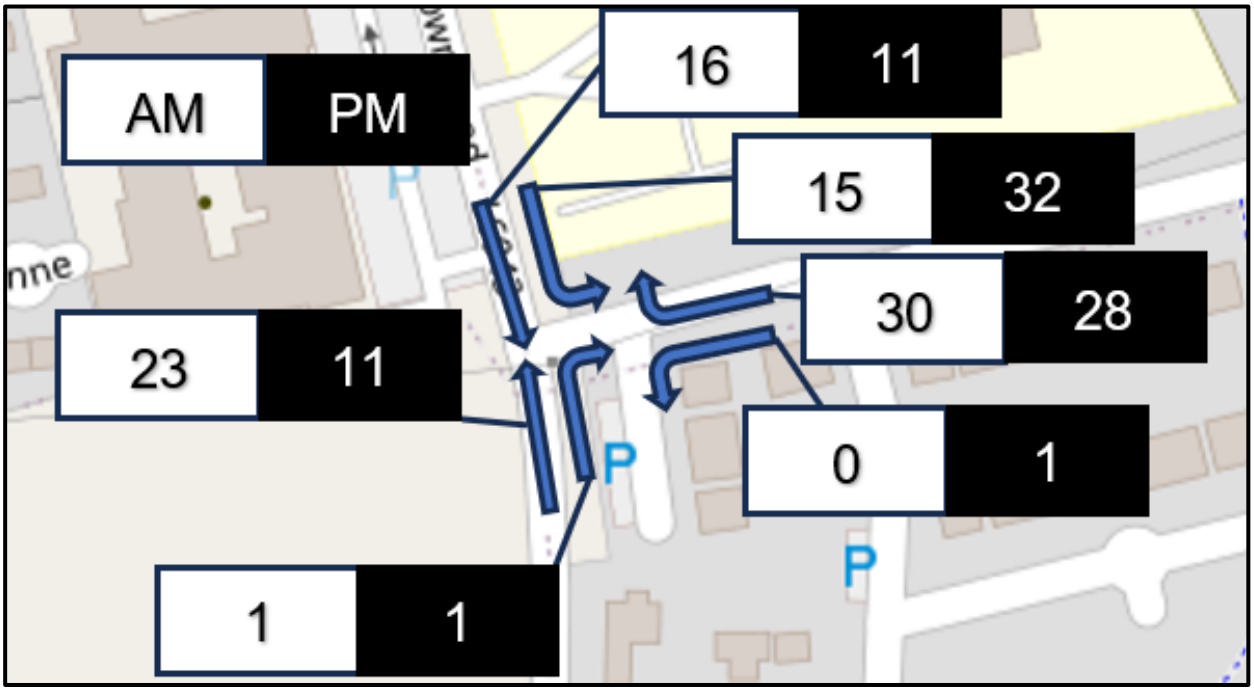

Figure 3.15: Junction 4 AM & PM June 2024 Traffic Counts

3.6 Traffic Collisions Data in the Vicinity of the Site

Traffic data collisions in the vicinity of the site could not be obtained as the Road Safety Authority website is currently in process of reviewing its road traffic collision data. Therefore, this Traffic Assessment is unable to verify the safety along the road network in the vicinity of the future development.

4 Trip Generation, Distribution and Impact on the Road Network

4.1 Existing Modal Splits in the Surrounding Area

An analysis of the 2022 Census from the Naas Local Electoral Area (**Figure 4.1** below) was carried out to identify a baseline breakdown of current modes of transport in the area.

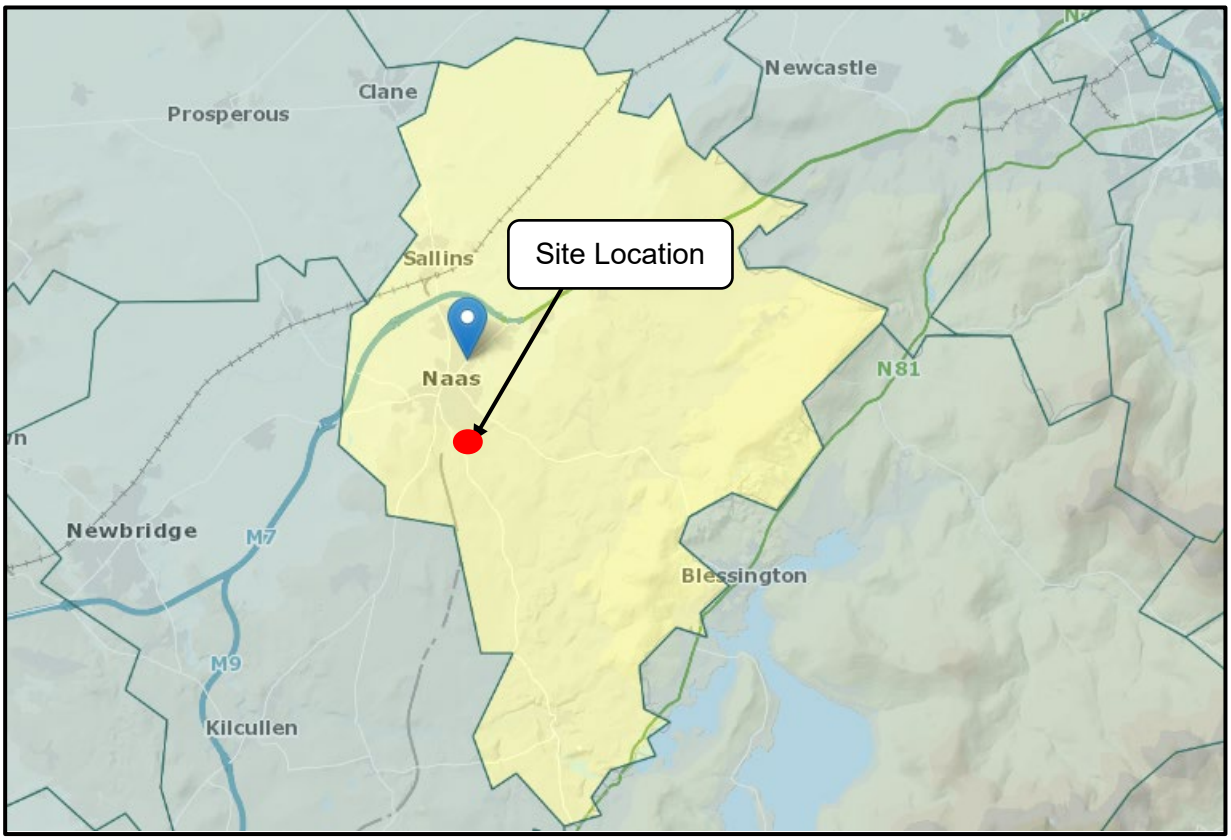

Figure 4.1: Naas Local Electoral Area (CSO)

The National Sustainable Mobility Policy sets outs a framework for 2030 for active travel and public transport to support Ireland's overall requirement to achieve a 51% reduction in greenhouse gas emissions by 2030. Transport is responsible for around 18% of our greenhouse gas emissions and it is vital that by 2030 we put in place the infrastructure, services and measures that enable and encourage more people to make the switch to more sustainable modes of travel.

Figures 4.2 and 4.3 show the breakdown of the reported modes of transport for the population over 5 years for work or development means for the Naas Local Electoral Area.

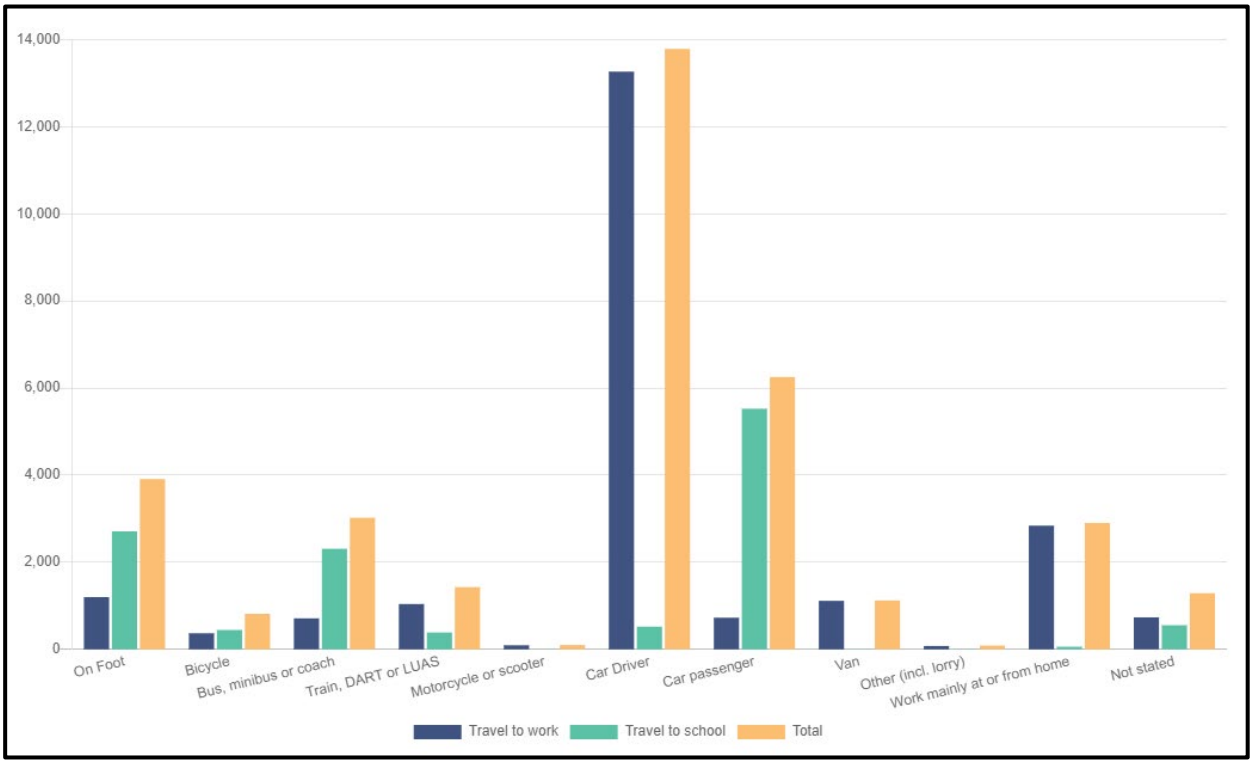

Figure 4.2: Population aged 5 years and over by means of travel to work, development or college in Naas Local Electoral Area as of 2022 (CSO)

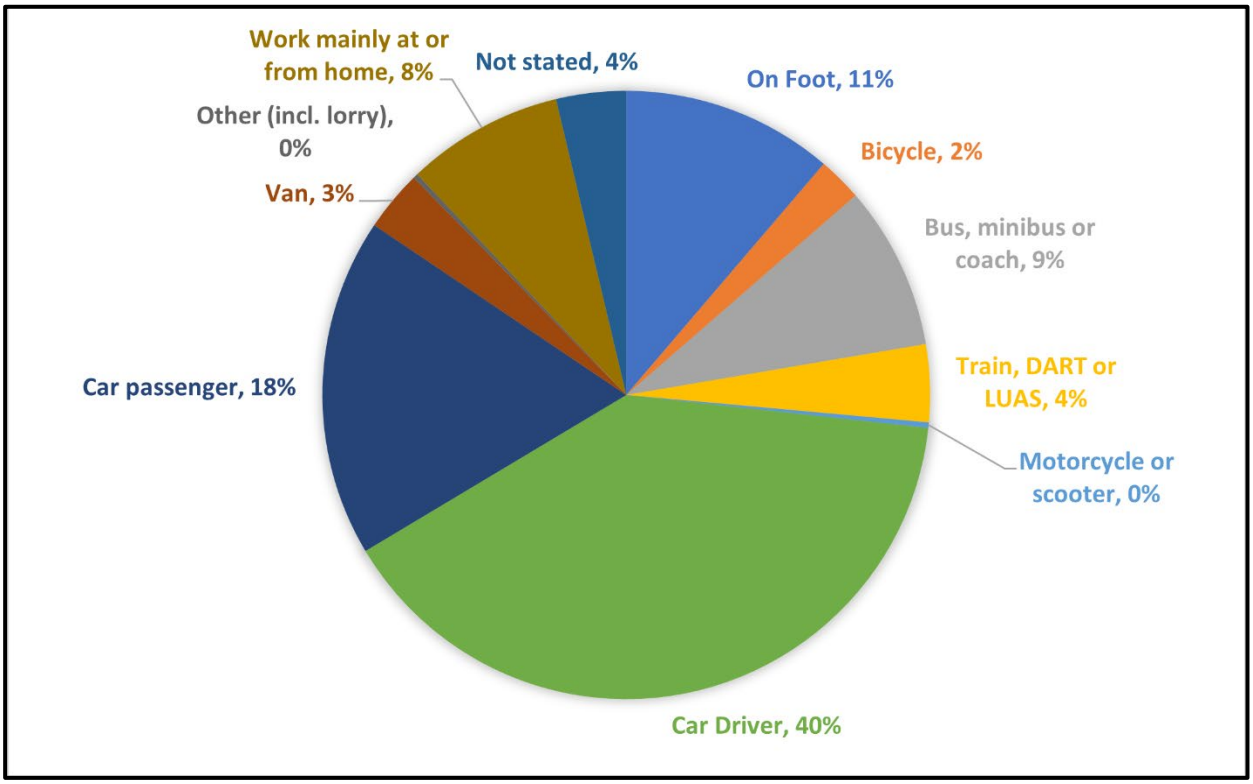

Figure 4.3: Breakdown of Means of Travel (Source: CSO.ie)

As can be seen, there is a heavy reliance on private cars with 58% either driving or being given a lift to school or work. Public transport, such as buses or trains, is used by 11% of the population within the settlement areas. Walking is the preferred mode of transport for 11% of the population, and cycling is only used by 2% of the population.

4.2 Traffic Generation and Distribution Slips

In order to obtain a comparative trip rate for the development once operational, the TRICS database was consulted. The TRICS (Trip Rate Information Computer System) database contains traffic generation data for developments of a similar nature to the proposed development. TRICS was established in the UK and is a substantial source of validated empirical data which contains information on arrival and departure rates for a range of different types and sizes of development throughout Ireland.

4.2.1 TRICS Database Survey

To determine the worst-case scenario for the traffic generation from the TRICS data, the proposed development was assessed as “RESIDENTIAL/ M - MIXED PRIVATE/ AFFORDABLE HOUSING” with a calculation factor by dwelling. **Table 4.1** and **Table 4.2** show the trip data for the 28No. housing units.

Table 4.1 – TRICS output for Social Housing

TRICS 7.11.2						
Trip Rate Parameter: No of Dwellings						
TRIP RATE for Land Use 03 - RESIDENTIAL/ M - MIXED PRIVATE/ AFFORDABLE HOUSING						
Calculation Factor: 1 DWELLS						
Count Type: TOTAL VEHICLES						
TIME RANGE	ARRIVALS			DEPARTURES		
	No. Days	Ave. GFA	Trip Rate	No. Days	Ave. DWELL	Trip Rate
07:00-08:00	9	30	0.089	9	30	0.216
08:00-09:00	9	30	0.13	9	30	0.346
09:00-10:00	9	30	0.182	9	30	0.141
10:00-11:00	9	30	0.134	9	30	0.145
11:00-12:00	9	30	0.152	9	30	0.123
12:00-13:00	9	30	0.134	9	30	0.178
13:00-14:00	9	30	0.167	9	30	0.16
14:00-15:00	9	30	0.16	9	30	0.201
15:00-16:00	9	30	0.286	9	30	0.238
16:00-17:00	9	30	0.26	9	30	0.156
17:00-18:00	9	30	0.312	9	30	0.175
18:00-19:00	9	30	0.212	9	30	0.156
Daily Trips Rates:	2.218			2.235		

The TRICS output is presented in a trip rate per unit. The unit reference is dependent on the development in question, such as per person, per house or unit area. In this case, the multiplication factor to be applied to the unit rate is the number of residential units (28): 5

arrivals and 10 departures in the AM peak and 9 arrivals and 7 departures in the PM peak.

Table 4.2 – Expected Traffic from the development			
Time Range	Arrivals	Departures	Total
08:00-09:00	5	10	15
15:00-16:00	9	7	16

4.3 Cumulative Impact

As part of this Traffic Assessment, to assess the existing and expected traffic along the road network in the vicinity of the proposed development, the Kildare County Council planning website was consulted to include all committed developments in the area.

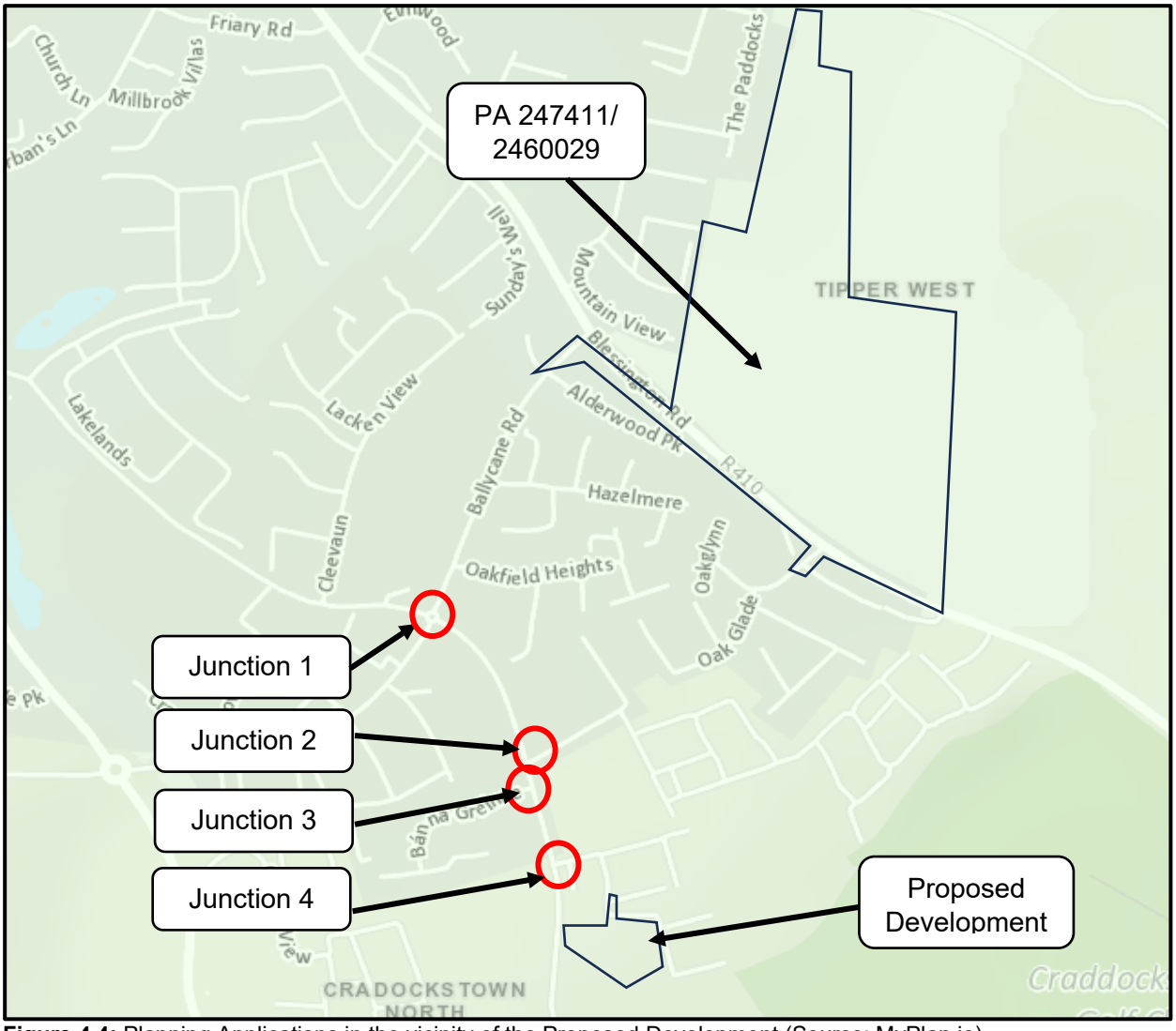

Figure 4.4: Planning Applications in the vicinity of the Proposed Development (Source: MyPlan.ie)

According to the Kildare County Council planning website, there is 1No. Planning Application that can affect the assessed junctions, as shown in **Figure 4.4** above and described in **Tables**

4.3 and **4.4.**

Table 4.3 – Committed Developments				
Planning Reference	**Decision Type**	**Description**	**Traffic Generation**	
			AM	**PM**
PA 247411/ 2460029	Conditional	Development at a site of 21.85ha: residential development of 410No. dwellings and a Neighbourhood centre of c. 1,978sqm comprising a single storey crèche (990sqm) with 8No. set down car spaces and crèche play area; a two-storey element comprising a retail unit, including a cafe (c. 362sqm), and gymnasium (c. 432 sqm); 41No. car parking spaces and 20No. cyclist spaces; and a playground.	366	350

Table 4.4 – Total Typical Daily Generated Profile by PA 247411/ 2460029			
Time Range	**Arrivals**	**Departures**	**Total**
Residential			
AM	60	179	239
PM	98	158	256
Creche			
AM	22	43	65
PM	14	34	48
Retail/ Café			
AM	13	25	38
PM	14	26	40
Gym			
AM	8	16	24
PM	2	4	6
TOTAL			
AM	103	263	366
PM	128	222	350

In the existing TTA for PA 2460029, traffic from the development assumed in a conservative approach is very close to the calculated above: 354 PCU for the AM peak and 369 PCU for the PM peak, out of which 67 PCU are expected to use Ballycane Road during the morning period, and 71 PCU in the evening, see **Figure 4.5** below.

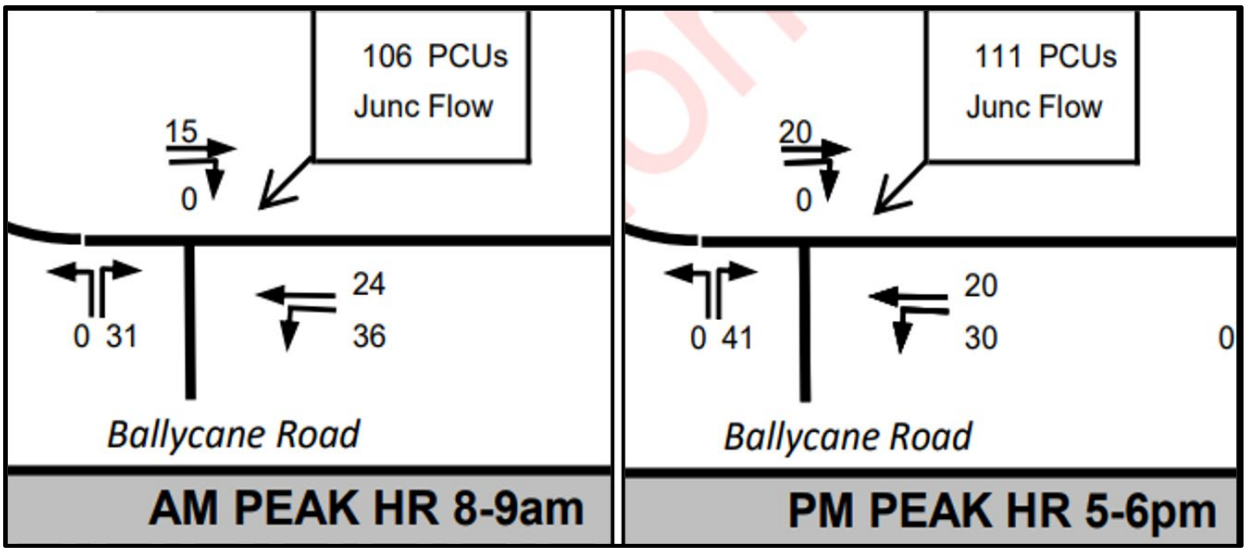

Figure 4.5: Traffic from the Committed Development at Ballycane Road/ Blessington Road Junction (Source: MyPlan.ie)

For the purposes of this assessment, as a worst-case scenario, it can be assumed that all the vehicles from the proposed Blessington Road development, after turning to the Ballycane Road, will approach Junction 1. Therefore, 31 PCU and 41 PCU as arrivals and 36 PCU and 30 PCU as departures, for the AM and PM peak respectively, can be added to the junction traffic in the Do-nothing scenarios for the future years.

4.4 Future Year Traffic Growth

Transport Infrastructure Ireland (TII) issues a range of forecasts: low growth, central growth and high growth. The implementation of policies relating to the National Sustainable Mobility Policy will act as a deterrent to high growth in car-based travel. Low growth factors are however likely to be equally unrealistic at present, therefore, this assessment has used central growth factors, which were extracted from the TII Publication PE-PAG-02017 Project Appraisal Guidelines for National Roads Unit 5.3 – Travel Demand Projections, published in October 2021, outlined in **Tables 4.5** to **4.7** below.

Table 4.5 – Development Location Information	
Location of Development	Kildare
Sensitivity Area	Central
Year of Traffic Counts	2024
Year of Assessment	2024
Year of Development Construction	2026

Table 4.6 - TII Annual Growth Rates (Central Growth) For Co. Kildare	
2016 – 2030	1.0378
2030 – 2040	1.0155
2040 – 2050	1.0187

Table 4.7 – Growth Factors for Future Design Years			
Counts	**Opening**	**Opening +5**	**Opening +15**
2024	2026	2031	2041
1.000	1.040	1.131	1.202

4.5 Traffic Impact Assessment

Based on the traffic counts obtained at the 4No. junctions in June 2024, the travel distribution was established, and it is assumed that traffic generated by the proposed development will follow the same trends. **Figures 4.6 to 4.9** show the proportion of traffic and summarise the traffic expected to and from the proposed development at each of the 4No. junctions during the AM and PM periods.

For traffic splits between the junctions, calculations were carried out for the worst-case scenario in each case, as a conservative approach: assuming that all traffic arriving to the proposed development will be using the analysed junction.

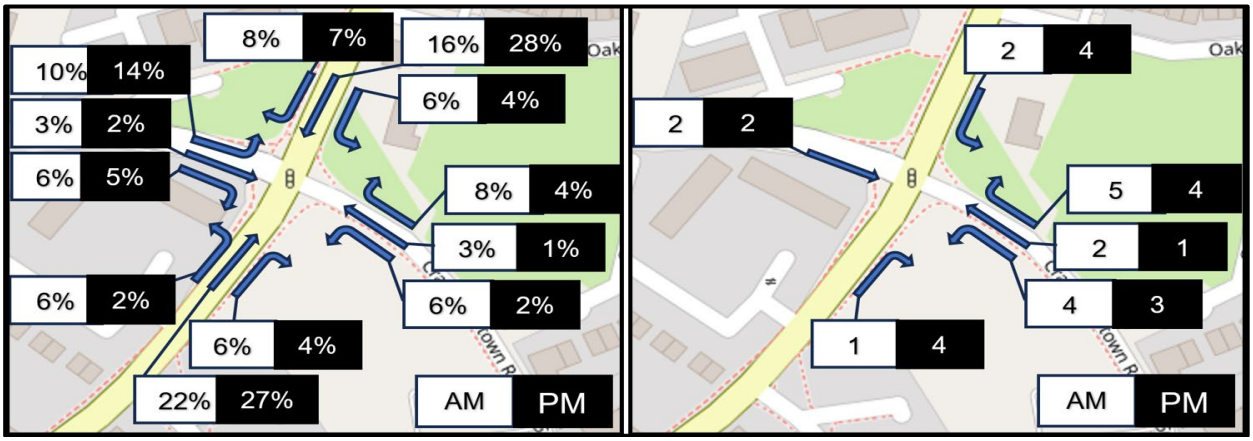

Figure 4.6: Existing Traffic Proportions and Expected Traffic to/ from Development at Junction 1

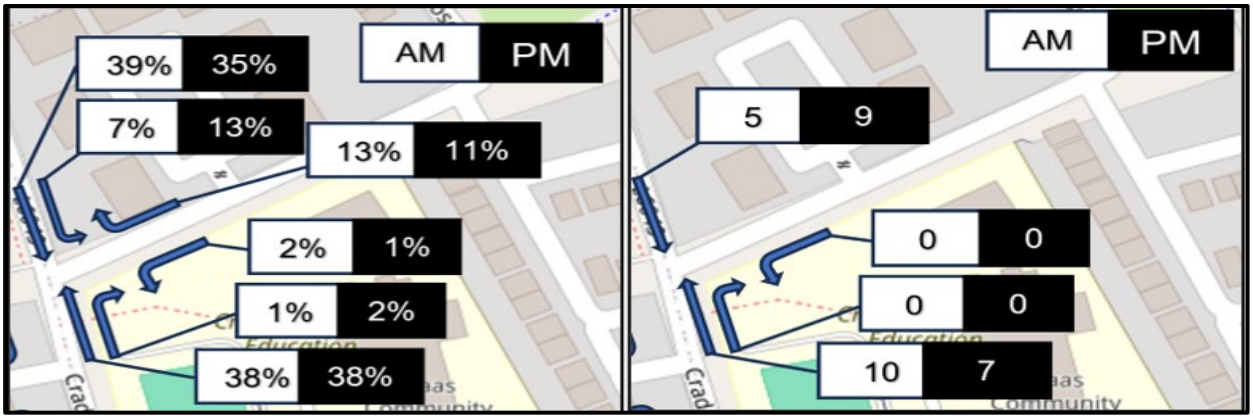

Figure 4.7: Existing Traffic Proportions and Expected Traffic to/ from Development at Junction 2

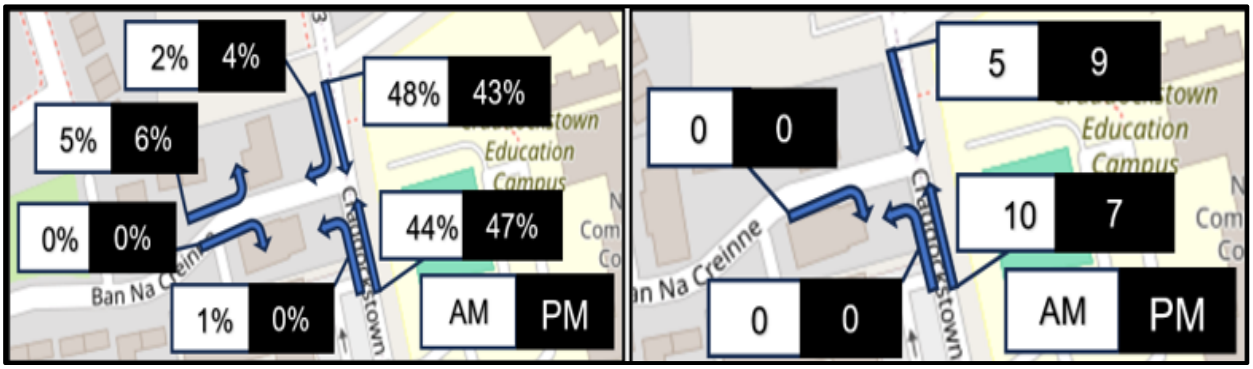

Figure 4.8: Existing Traffic Proportions and Expected Traffic to/ from Development at Junction 3

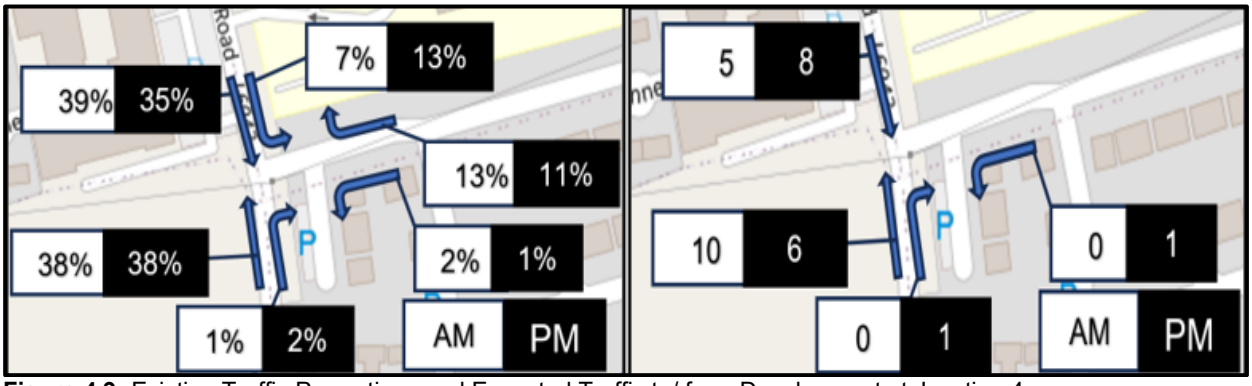

Figure 4.9: Existing Traffic Proportions and Expected Traffic to/ from Development at Junction 4

4.5.1 Traffic and Transport Assessment Guidelines

The Kildare County Council Development Plan 2023 – 2029 requires that Traffic and Transport Assessments shall be carried out in all proposed significant developments, and it should be in accordance with the TII Publication PE-PDV-02045 from June 2014.

The TII publication PE-PDV-02045 recommends that junction modelling should be carried out where new traffic exceeds 5% of existing flows if congestion already exists and if traffic generated by the development exceeds 10% where no traffic congestion is present. As can be seen from **Table 4.8** below, the predicted traffic from the development will generate an increase of over 5% on the Junction 3 (Craddockstown Road/ Ban na Greinne) and an increase of over 10% on the Junction 4 (Craddockstown Road/ Eustace Demesne Drive). For Junction 1 and Junction 2, the increase in traffic is low.

Table 4.8 – Traffic Impact on the Neighbouring Junctions

Junction	2026 Projected Traffic		Traffic from Development		Increase in Traffic		TII Threshold of 5%	
	AM	PM	AM	PM	AM	PM	AM	PM
Junction 1	1447	1343	15	16	1.0%	1.2%	Below	Below
Junction 2	454	344	15	16	3.3%	4.6%	Below	Below
Junction 3	364	260	15	16	4.1%	6.1%	Below	Above
Junction 4	98	93	15	16	15.3%	17.2%	Above	Above

Table 4.9 overleaf provides the thresholds for a TTA. The new traffic is expected to exceed 5% of existing flows at one of the assessed junctions (Junction 3) during the evening peak; it is also expected to exceed 10% of existing flows at Junction 4, at a location where congestion does not exist. Therefore, a Traffic Assessment is required to demonstrate the proposed development will not negatively affect the public roads.

Table 4.9 – Traffic Management Guidelines Thresholds for Transport Assessments (TII)	
Yes	Traffic to and from the development exceeds 10% of the traffic flow on the adjoining road.
Yes	Traffic to and from the development exceeds 5% of the traffic flow on the adjoining road where congestion exists, or the location is sensitive
N/A	Residential development in excess of 200 dwellings
N/A	Retail and leisure development in excess of 100m^2
N/A	Office, education and hospital development in excess of 2,500m^2
N/A	Industrial development in excess of 5,000m^2
N/A	Distribution and ware in excess of 10,000m^2

5 Capacity Analysis

5.1 Capacity Analysis Introduction

Capacity assessments were undertaken on the junctions in vicinity of the proposed development as agreed with Kildare County Council to demonstrate if the traffic associated with the site adversely affects the functionality of the road network. The performance of the junctions during the AM and PM peak hours was assessed using *PICADY* and *OSCADY* software for the following design years:

- 2024, base year;
- 2026, planned year of the development conclusion;
- 2031, 5 years after conclusion;
- 2041, 15 years after conclusion.

Figure 5.1 below shows the junctions for which traffic simulation was undertaken in order to determine whether the junctions will cater for the predicted level of traffic from the proposed scheme.

Figure 5.1: Location of Analysed Junctions (Source: Google Maps)

5.2 Traffic Impacts of the Proposed Development on the Local Road Network

Presently, the site location is a green field area. As stated in **Section 3.5**, traffic counts were undertaken at the junction locations on Thursday the 20th of June 2024, a typical weekday. Central Sensitivity traffic growth rates for Co. Kildare were applied to the existing background traffic and were not applied to the proposed development and the committed development, as the potential traffic is limited by the development size. The junctions were modelled using *PICADY* software for the priority junctions and *OSCADY* for the signalised.

The capacity assessments were modelled for three different scenarios:

- Base-year: 2024 traffic flows modelled according to traffic counts obtained in June 2024
- Do-nothing: modelled without the intervention of the proposed development. For this analysis, the traffic counts were factored up using TII's Central Growth Factor for the design years, 2026, 2031 and 2041. The committed development mentioned in **Section 4.3** was added to this analysis.
- Do-something: the impact of the traffic generated by the proposed development was added to the design years 2026, 2031 and 2041. This analysis will enable the comparison with the 'Do-nothing' scenario.

5.2.1 Junction 1: Ballycane Road/ Craddockstown Road Signalised 4-Arm Junction

In the following analysis of the Junction 1, displayed in **Figure 5.2** below, the junction was assessed for AM and PM peak periods, and the arms were labelled as follows:

- Arm A: Ballycane Road North;
- Arm B: Craddockstown Road East;
- Arm C: Ballycane Road South;
- Arm D: Craddockstown Road West.

Figure 5.2: Junction 1 Arm Names (Source: Google Maps)

The Craddockstown Road/ Ballycane Road junction is located to the southeast of Naas, at a distance of approx. 550m to the northwest from the proposed site entrance. The junction has a 12-hour daily volume of 11,725 vehicles recorded, and it has a lower than the TII threshold of 5% increase in traffic on the adjoining road.

To determine the operation details of the junction, ORS reviewed the raw video footage from the traffic count cameras. Consequently, the current controller configuration is based on these observations.

As per the observations made for the junction, the analysis includes five stages, where the last stage represents pedestrians. The cycle time is 120sec to include the pedestrian phase, which represents the worst-case scenario.

The pedestrians cross the crossing on demand, which means that the pedestrian phase will not be activated in every cycle; therefore, the results can be considered as conservative.

For signalised junctions, DOS (Degree of Saturation) value serves as an indicator of the junction's operational capacity. When the DOS value is 85% or less, it suggests that the junction is functioning within its capacity. If the DOS value ranges between 85% and 100%, it implies that the junction is still within its capacity but is starting to exhibit signs of queuing and delay. In urban areas, during peak traffic periods, a DOS value of less than 100% is considered desirable. However, it is not uncommon to observe DOS values exceeding 100% at many junctions.

The queue levels are presented in Passenger Car Unit (PCU) and quantify the total number of vehicles queueing on each arm.

Figure 5.3 below shows the current controller configuration for the Ballycane Road/ Craddockstown Road Signal Controlled Junction based on observations.

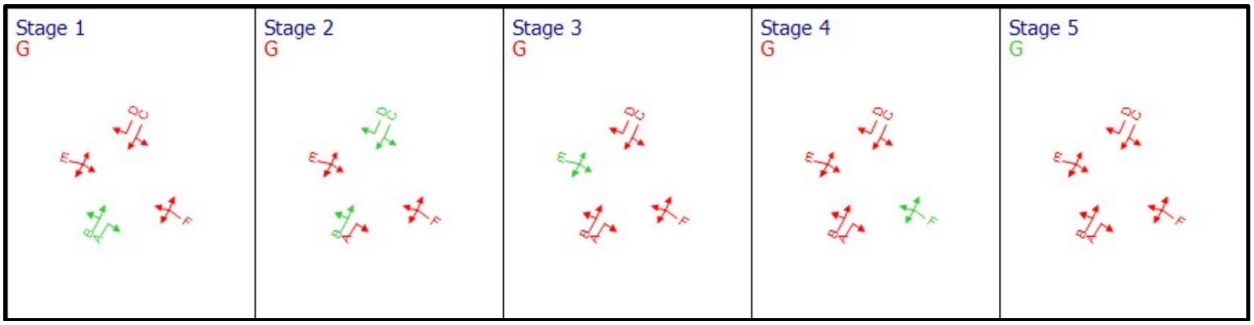

Figure 5.3: *Controller Configuration for the Ballycane Road/ Craddockstown Road Junction*

Table 5.1 shows the results of the analysis for junction using the *OSCADY* transport modelling software for signalised junctions for the assessment year (2024), the year of opening (2026), 5 years after the development completion (2031) and 15 years after the development completion (2041) for the 'Do-Nothing' and 'Do-Something' scenarios.

Table 5.1 – *PICADY* Results for Junction 1					
		AM		PM	
Analysis	**Stream**	**Queue (PCU)**	**DOS**	**Queue (PCU)**	**DOS**
1 – 2024, base year	Arm A	15.0	0.97	14.2	0.72
	Arm B	12.3	0.95	2.8	0.38
	Arm C	14.2	0.92	10.0	0.56
	Arm D	14.5	0.96	12.8	0.94
2 – 2026, do-nothing	Arm A	27.9	1.27	18.9	0.94
	Arm B	16.7	1.01	3.1	0.41
	Arm C	15.9	0.95	11.1	0.58
	Arm D	20.4	1.03	19.5	1.02
3 – 2026, do-something	Arm A	28.0	1.27	19.1	0.94
	Arm B	21.2	1.06	3.4	0.45
	Arm C	16.2	0.97	11.4	0.63
	Arm D	21.1	1.04	20.2	1.03
4 – 2031, do-nothing	Arm A	41.9	1.61	28.7	1.18
	Arm B	25.4	1.10	3.4	0.44
	Arm C	19.2	1.04	12.3	0.63
	Arm D	31.5	1.12	30.0	1.11
5 – 2031, do-something	Arm A	42.0	1.61	29.0	1.18
	Arm B	31.5	1.15	3.7	0.48
	Arm C	19.7	1.05	12.6	0.68
	Arm D	32.5	1.12	31.0	1.12
6 – 2041, do-nothing	Arm A	54.2	1.92	39.2	1.41
	Arm B	34.1	1.17	3.6	0.47
	Arm C	22.4	1.10	13.2	0.67
	Arm D	42.3	1.19	40.3	1.18
7 – 2041, do-something	Arm A	54.2	1.92	39.7	1.41
	Arm B	41.3	1.22	3.9	0.51
	Arm C	23.0	1.11	13.6	0.72
	Arm D	43.5	1.19	41.4	1.18

Analysis 1 is a representation of the current base year 2024. As can be seen from the table above, the DOS is at its maximum 0.97 in Arm A (Ballycane Road North) in the morning period and 0.94 in Arm D (Craddockstown Road West) in the evening period, with queueing formation of 15 and 12.8 PCU, respectively.

Analysis 2 represents traffic conditions in 2026 without the proposed social housing but with inclusion of the committed Blessington Road development located at a distance of circa 650m to the northeast of the Junction 1. The maximum DOS of 1.27 in Arm A in the morning peak and 1.03 in Arm D in the evening peak show that demand is higher than the capacity limit, and no further traffic can progress through the junction.

If the proposed development is added to the scheme (Analysis 3), it increases the DOS of all

arms by 5% maximum during both AM and PM peak.

In Analysis 6 & Do-Nothing scenario which is representation of the likely traffic conditions of the study area without the proposed scheme in place, the junction has a maximum DOS of 1.92 in the morning period and 1.41 in the evening period in 2041, both in Arm A, with maximum queueing formation of 54.2 PCU here during the AM peak. All four arms have DOS above 1 during the morning peak; for the evening peak, the DOS value is higher than 1 in arms A and D.

In Do-Something scenario for 2041, which represent the anticipated traffic conditions of the study area with the inclusion of the proposed development, Arm B (Craddockstown Road East) has a maximum increase in DOS by 5% in the morning peak and by 4% in the evening peak, and an increase in queueing formation by up to 7.2 PCU. In Arm C (Ballycane Road South), DOS increases by 1% in the AM peak and by 5% in the evening. Arms A and D experience no increase of DOS with the inclusion of the proposed social housing.

It can be concluded that the signalised Craddockstown Road/ Ballycane Road junction is currently at capacity, and upgrades might be required in the following years to accommodate the increase in traffic.

5.2.2 Junction 2: Craddockstown Road/ Oak Glade Close Priority T-Junction

From the junction modelling for the 3No. 3-arm priority junctions (Junction 2, Junction 3 and Junction 4), the Ratio of Flow to Capacity (RFC) was obtained for each arm of the junction. The RFC describes the capacity of each approach to the junction and determines whether the junction will cater for the predicted level of traffic. An RFC below 0.85 (85%) implies that an approach road is operating satisfactorily well within capacity; between 0.85 to 1.0 RFC means the approach operates well within capacity but at less optimal efficiency; and an RFC above 1.0 means that demand and capacity are equal and no further traffic can progress through the junction.

In the following analysis of the Junction 2 displayed in **Figure 5.4** below, the junction was assessed for AM and PM peak periods and the arms were labelled as follows:

- Arm A: Craddockstown Road North;
- Arm B: Oak Glade Close;
- Arm C: Craddockstown Road South.

The 3-arm Craddockstown Road/ Oak Glade Close priority junction is located in approx. 280m to the north from the proposed site entrance and has a 12-hour daily volume of 2,625 vehicles recorded. As stated in **Section 4.5.1**, it has a lower than the TII threshold of 5% increase in traffic on the adjoining road.

Figure 5.4: Junction 2 Arm Names (Source: Google Maps)

Table 5.2 – *PICADY* Results for Junction 2

		AM		PM	
Analysis	**Stream**	**Queue (PCU)**	**Ratio of Flow to Capacity (RFC)**	**Queue (PCU)**	**Ratio of Flow to Capacity (RFC)**
1 – 2024, base year	B-AC	0.2	0.18	0.1	0.10
	C-AB	0.0	0.00	0.0	0.01
2 – 2026, do-nothing	B-AC	0.2	0.19	0.1	0.11
	C-AB	0.0	0.00	0.0	0.01
3 – 2026, do-something	B-AC	0.2	0.19	0.1	0.11
	C-AB	0.0	0.00	0.0	0.01
4 – 2031, do-nothing	B-AC	0.3	0.21	0.1	0.12
	C-AB	0.0	0.00	0.0	0.02
5 – 2031, do-something	B-AC	0.3	0.21	0.1	0.12
	C-AB	0.0	0.00	0.0	0.02
6 – 2041, do-nothing	B-AC	0.3	0.23	0.1	0.13
	C-AB	0.0	0.00	0.0	0.02
7 – 2041, do-something	B-AC	0.3	0.23	0.1	0.13
	C-AB	0.0	0.00	0.0	0.02

Table 5.2 above and **Table 5.3** and **5.4** below show the results of the analysis for each 3-arm junction using the transport modelling software for priority junctions for the assessment year (2024), the year of opening (2026), 5 years after the development completion (2031) and 15 years after the development completion (2041) for the 'Do-Nothing' and 'Do-Something'

scenarios.

The RFC was obtained for each arm of the Junction 2. Analysis 1 performed for the 'do-nothing scenario' indicates that the road network is currently experiencing no congestion during peak hours, with a maximum RFC of 0.18 (18%) and a maximum queue formation of 0.2 PCU in Arm B (Oak Glade Close) during the morning peak.

In Do-Nothing scenarios which are representations of future years and the likely traffic conditions of the study area without the proposed scheme in place, the RFCs are at their maximum 0.23 (23%) in the morning and 0.13 (13%) in the evening period in 2041 (both in Oak Glade Close).

In Do-Something scenarios, which represent the anticipated traffic conditions of the study area with the inclusion of the proposed scheme, Junction 2 experiences no increase in RFC in 2041. So, the RFC value does not rise above 23% which is far below the threshold of 85%. It shows that the junction will perform satisfactorily in the future years.

5.2.3 Junction 3: Craddockstown Road/ Ban na Greinne Priority T-Junction

In the following analysis of the Junction 3 displayed in **Figure 5.5** below, the junction was assessed for AM and PM peak periods and the arms were labelled as follows:

- Arm A: Craddockstown Road North;
- Arm B: Ban na Greinne;
- Arm C: Craddockstown Road South.

Figure 5.5*:* Junction 3 Arm Names (Source: Google Maps)

Table 5.3 – *PICADY* Results for Junction 3					
		AM		PM	
Analysis	Stream	Queue (PCU)	Ratio of Flow to Capacity (RFC)	Queue (PCU)	Ratio of Flow to Capacity (RFC)
1 – 2024, base year	B-AC	0.0	0.03	0.0	0.03
	C-AB	0.0	0.02	0.0	0.02
2 – 2026, do-nothing	B-AC	0.0	0.03	0.0	0.03
	C-AB	0.0	0.02	0.0	0.03
3 – 2026, do-something	B-AC	0.1	0.06	0.0	0.04
	C-AB	0.0	0.03	0.1	0.04
4 – 2031, do-nothing	B-AC	0.0	0.04	0.0	0.03
	C-AB	0.0	0.02	0.0	0.03
5 – 2031, do-something	B-AC	0.1	0.06	0.1	0.05
	C-AB	0.0	0.04	0.1	0.05
6 – 2041, do-nothing	B-AC	0.0	0.04	0.0	0.03
	C-AB	0.0	0.03	0.0	0.03
7 – 2041, do-something	B-AC	0.1	0.06	0.1	0.05
	C-AB	0.1	0.04	0.1	0.05

The 3-arm Craddockstown Road/ Ban na Greinne priority junction is located in approx. 240m to the north from the proposed site entrance and has a 12-hour daily volume of nearly 1,700 vehicles recorded. In the AM peak, the increase in traffic on the adjoining road here is below the TII threshold of 5%, but during the PM peak it increases by 5.7%.

In Analysis 1, there is no congestion, with a maximum RFC of 0.03 (3%) in Arm B (Ban na Greinne) during both peak hours, and no queue formation or delays.

In Do-Nothing scenarios of future years, the RFCs are at their maximum of 0.04 (4%) in the morning in Ban na Greinne, with no queueing formation in 2041.

In Do-Something scenarios, Junction 3 experiences an increase in RFC by 2% in all arms in the morning and in Arm B in the evening period, and queueing formation of 0.1 PCU in all arms in 2041.

The RFC values of Junction 3 are far below the threshold of 85% (6% maximum) showing that the junction will perform satisfactorily in the future years.

5.2.4 Junction 4: Craddockstown Road/ Eustace Demesne Drive Priority T-Junction

In the following analysis of the Junction 4 displayed in **Figure 5.6**, the junction was assessed for AM and PM peak periods and the arms were labelled as follows:

- Arm A: Craddockstown Road North;
- Arm B: Eustace Demesne Drive;
- Arm C: Craddockstown Road South.

Figure 5.6: Junction 4 Arm Names (Source: Google Maps)

Table 5.4 – *PICADY* Results for Junction 4

		AM		PM	
Analysis	**Stream**	**Queue (PCU)**	**Ratio of Flow to Capacity (RFC)**	**Queue (PCU)**	**Ratio of Flow to Capacity (RFC)**
1 – 2024, base year	B-AC	0.1	0.08	0.1	0.07
	C-AB	0.0	0.00	0.0	0.00
2 – 2026, do-nothing	B-AC	0.1	0.09	0.1	0.08
	C-AB	0.0	0.00	0.0	0.00
3 – 2026, do-something	B-AC	0.1	0.09	0.1	0.08
	C-AB	0.0	0.00	0.0	0.00
4 – 2031, do-nothing	B-AC	0.1	0.09	0.1	0.09
	C-AB	0.0	0.00	0.0	0.00
5 – 2031, do-something	B-AC	0.1	0.09	0.1	0.09
	C-AB	0.0	0.00	0.0	0.00
6 – 2041, do-nothing	B-AC	0.1	0.10	0.1	0.09
	C-AB	0.0	0.00	0.0	0.00
7 – 2041, do-something	B-AC	0.1	0.10	0.1	0.10
	C-AB	0.0	0.00	0.0	0.00

The 3-arm Craddockstown Road/ Eustace Demesne Drive priority junction is located just 120m to the north from the proposed site entrance. This junction has a 12-hour daily volume of only 507 vehicles recorded. The increase in traffic on the adjoining road due to inclusion of the

proposed development will be higher than the TII threshold: 10.6% during the AM and 14.5% during the PM peak.

The road network here is currently (in 2024, Analysis 1) experiencing no congestion during peak hours, with a maximum RFC of 0.08 (8%) and queue formation of 0.1 PCU in Arm B (Eustace Demesne Drive) during the morning peak, and no delays.

In Do-Nothing scenario of 2041, the RFC is 0.1 (10%) in the morning and 0.09 (9%) in the evening period (both in Eustace Demesne Drive), with maximum queueing formation of 0.1 PCU here.

In Do-Something scenario of 2041, Junction 4 experiences an increase in RFC by 1% (from 0.09 to 0.1) in Arm B in the evening period.

For Craddockstown Road, both RFC and queueing formation are zero in all years.

In total, RFC values of all 3No. T-junctions analysed in this TTA do not rise above 23% which is far below the threshold of 85%. It shows that the junctions will perform satisfactorily in the future years.

It can be concluded that the proposed development traffic will not adversely affect the functionality of the existing road network.

6 Conclusions

The main conclusions of this assessment are summarised as follows:

- ORS has been commissioned by Hayes Higgins Partnership to carry out a Traffic and Transport Assessment (TTA) for the construction of a Social Housing in Naas, Co. Kildare.

- The proposed development involves the construction of 28No. residential dwellings comprising of 21No. houses and 7No. apartments. The proposed development also includes all site works associated with the above. The proposed layout includes 34No. car parking spaces and a new access road from the Craddockstown Road to the north of the site.

- The Roads Planning Department of Kildare County Council has requested by correspondence with the design team that a Traffic Assessment was carried out as part of this application and that the report should focus on 4No. junctions in the vicinity of the site location, to assess existing and future traffic flow related to the proposed development.

- Automated junction turning counts were undertaken on Thursday the 20th of June 2024 at the 4No. junctions by a third-party company, IDASO. From the traffic counts, it was observed that the AM peak hour occurs between 08:30-09:30 at all 4No. junctions; the PM peak differs significantly (affected by the vicinity of the Naas Community National School to the Junctions 2, 3 and 4). At Junction 1 (Craddockstown Road/ Ballycane Road), the PM traffic peak was identified between 16:45 – 17:45; at Junction 2 (Craddockstown Road/ Oak Glade Close) and Junction 4 (Craddockstown Road/ Eustace Demesne Drive), the evening peak was recorded between 14:30 – 15:30. At Junction 3 (Craddockstown Road/ Ban na Greinne), the PM peak occurred at 14:15 – 15:15.

- Junction 1 has a 12-hour traffic volume of 11,725 vehicles (12,007 PCUs). A 12-hour traffic volume at Junction 2 was 2,625 vehicles (2,535 PCUs), at junction 3 – 1,698 vehicles (1,660 PCUs), and at Junction 4 - 507 vehicles (692 PCUs).

- The Kildare County Council planning website was consulted to obtain information about committed developments near the proposed development to be included in this traffic analysis. 1No. committed development in the vicinity of the proposed development was added into ‘do-nothing’ scenarios.

- The expected trip generation from the social housing was obtained from Trip Rate Information Computer System (TRICS) database. The traffic splits at the junctions could be calculated from the traffic counts and it is expected that the traffic from the development will follow the same trend.

- The increase in traffic corresponding to the inclusion of the proposed development rises above the threshold of 10% increase in traffic by the site at Junction 4 where congestion does not exist, and above 5% at Junction 3. The junctions were examined using *PICADY* and *OSCADY* software for the junctions, for the AM and PM peak conditions under conservative future projections and central background traffic growth, to check if the proposed site will not pose a negative impact on the junctions.
- It can be concluded, basing on the results of the analysis, that the proposed Social Housing development will not have a significant impact on the existing road network. However, the

signalised 4-arm junction (Junction 1) is already at capacity, according to the conservative analysis undertaken, and upgrades might be required in the following years to accommodate the increase in traffic.

- A general improvement of the existing infrastructure is necessary for the part of the Craddockstown Road between the Craddockstown Road/ Eustace Demesne Drive junction and the proposed site entrance. Adding footpaths and cycle track from the proposed site entrance up to the Junction 4 improved as a part of the Craddockstown Road Active Travel Scheme, will be beneficial for the safety of vulnerable users.

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Appendix A – Traffic Data

Traffic data available upon request.

Appendix B – Junctions 9 Modelling Data

Junctions 9 data available upon request.

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Appendix C – TRICS Trip Generation Data

TRICS data available upon request.

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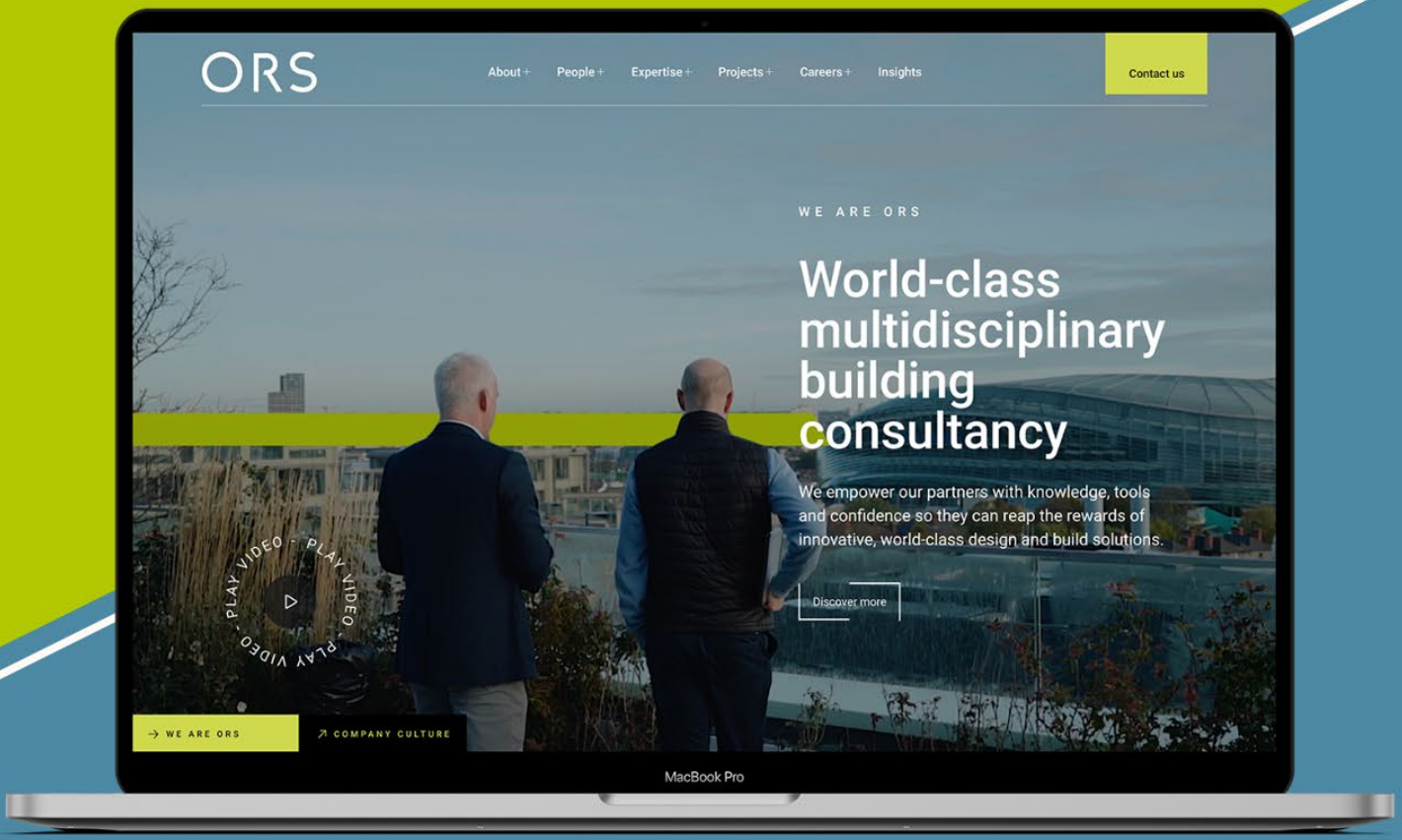

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