

Julianstown Village Traffic Relief Scheme Project Outline Document



SYSTRA



comhairle chontae na mí
meath county council



JULIANSTOWN VILLAGE TRAFFIC RELIEF

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Department of Public Expenditure, NDP Delivery and Report Infrastructure Guidelines (available at <https://www.gov.ie/en/collection/e8040-infrastructure-guidelines/>)

Transport Appraisal Framework Module 3 – Project/Programme Outline Documents (available at <https://www.gov.ie/en/publication/c9038-transport-appraisal-framework-taf/>)

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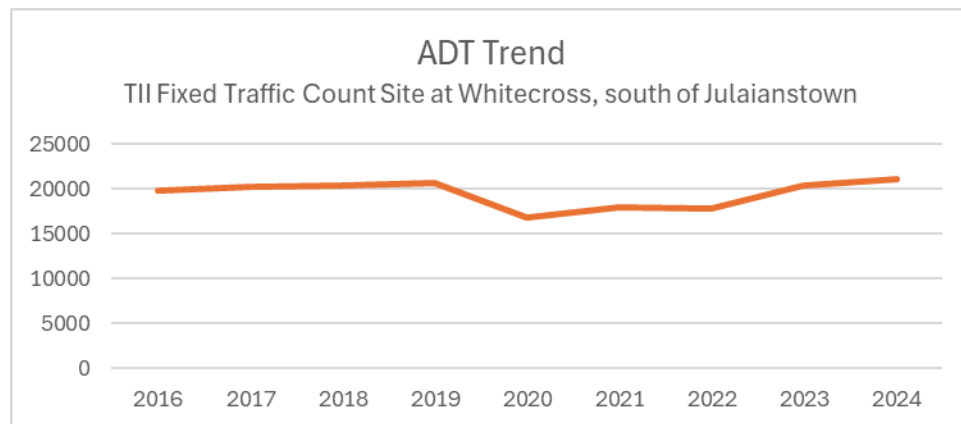
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EXECUTIVE SUMMARY

Description of the Project

High volumes of traffic pass through Julianstown every day resulting in a number of associated issues, including safety, air and noise pollution, impedance to active modes and economic impacts due to reliability and journey time impacts. Many bus services pass through Julianstown, and the high volume of traffic also has a negative impact on public transport journey times and reliability. This Project Outline Document (POD) concerns the need for intervention to address issues relating to very high volumes of traffic through Julianstown Village in County Meath.

Julianstown is a rural village, located on the R132 south of Drogheda and west of Laytown. The village has a population of 700 people, which is expected to grow to 756 by 2026. The R132 is a single carriageway road with a 50 kph speed limit in Julianstown. Except for the disruption due to the Covid-19 pandemic, traffic levels through Julianstown have been consistently high for many years, with current daily volumes of the order of 21,000 Average Annual Daily Traffic (AADT).



The overall objective of the Julianstown Traffic Relief Scheme is to:

‘To reduce traffic volumes on the R132 through Julianstown Village and improve the management of regional road traffic to deliver safer, more reliable and sustainable regional road connectivity in East Meath.’

Investment Rationale

The vision for Julianstown is established in the Meath County Development. The goal is to consolidate and strengthen the village by creating a well-defined village centre area and supporting a variety of land-uses that benefit the residential population. Further goals include improving the quality of the village's built and natural environments, while meeting the needs of the local community, and ensuring that the village develops in a sustainable manner as an appealing village in which to live, work, play, and visit.

Currently Julianstown is experiencing:

- Congestion and unreliable travel times;
- Safety concerns relating to traffic accident risk within the village as a result of traffic congestion, specifically as traffic levels constrain the use of active modes;
- An over-reliance on private cars; and
- Environmental issues of noise, local air quality and emissions from high levels of car use, congestion and the impact it has on the health of the population.

Without decisive intervention in terms of traffic relief in Julianstown:

- Road traffic congestion will continue to increase;
- Increased risk of accident/ collisions;
- Negative impact on the active modes based on safety concerns;
- Increased journey times will result in increasing costs for businesses, higher levels of travel stress and diminished quality of life;
- The effectiveness, safety, and dependability of current transport assets would be negatively impacted; and
- The negative effects of high traffic volumes will continue to impact the local population.

Policy Context and Objective Setting

The policy context has been reviewed across International, National, Regional and Local policies and strategies. As is demonstrated within this POD, there is consistency between the objectives for Julianstown Traffic Relief and current policies demonstrating that the project will support wider aims.

To aid in the development of the project's subsequent appraisal, a series of sub-objectives have been developed in addition to the overall objective stated above. These sub-objectives are categorised under appraisal criteria that align with the Department of Transport's Transport Appraisal Framework.

Initial Demand Analysis

The R132 at Julianstown caters for very high volumes of regional traffic, consistently exceeding 20,000 vehicles per day over many years apart from during the COVID-19 pandemic and the associated travel restrictions. Car traffic accounts for the majority, circa 87%, of vehicles that pass through Julianstown daily. Approximately 10% of traffic is Light Goods Vehicles. Heavy Goods Vehicles make up 2% of daily traffic. There are around 160 buses a day passing through Julianstown equating to just under 1% of vehicular traffic.

The R132 is the previous N1 Dublin-Belfast road via Drogheda. Since the opening of the M1 in 2003 measures have been taken on the R132 to calm traffic and install footpaths and central reservations. Many of the hard shoulders through Julianstown have been landscaped. The speed limit through Julianstown today is 50kph.

CRITERIA		PROJECT OBJECTIVES
Transport User Benefits and Other Economic Impacts	1	Reduce the impact of congestion at Julianstown on strategic regional network traffic
	2	Improve the reliability of transport for trips through Julianstown
Accessibility	3	Improve access to education and employment for those who rely on the regional road through Julianstown
Safety	4	Reduce the risk of road traffic accidents within Julianstown Village
Local Environment	5	Reduce the impact of traffic on noise pollution
	6	Manage the impact of transport infrastructure provision on the local environment including architectural conservation, biodiversity, land take and water

Prior to the COVID-19 pandemic, traffic volumes remained largely unchanged at around 20,000. However, over the last year levels of traffic have been increasing and the average daily flow over the last 12 months is in excess of 21,000 vehicles.

Given the population growth forecasted, for Julianstown and surrounding areas of Drogheda, Laytown, Bettystown and Mornington, it is anticipated that demand for transport will continue to rise in the coming years. Wider interventions in the delivery of sustainable transport and demand management will mitigate the impact of increasing demand, such as improvements to the Dublin Belfast rail corridor and DART+. However, it is expected that a significant proportion of transport demand will continue to be served by the road network through both private car and goods traffic. As a result, it is expected that traffic volumes

through Julianstown will remain high even as demand for public transport and active modes increase.

Various surveys were undertaken to obtain information in relation to traffic flows and transport demand. Data was collected and analysed from the following sources:

- National Transport Authority's Eastern Region Model (ERM)- Select Link Analysis (Origin and Destination) and Screenline Survey;
- TomTom- select link analysis; and
- Transport Infrastructure Ireland Automatic Traffic Counts (ATCs)

A key consideration in data analysis, was determining the origin and destination of trips through Julianstown. According to the data sets available, the vast majority of traffic demand travels between South Drogheda, the Laytown / Bettystown areas, and Dublin City. While the M1 is the primary national road along the corridor, given the location of interchanges onto the M1, the most direct route for the identified travel patterns is via Julianstown. Approximately 60% of traffic traveling south on the R132 through Julianstown travels via M1 junction 7.

The ERM was used to forecast traffic in 2043 in a scenario including new transport infrastructure proposed in the Greater Dublin Area Transport Strategy. The analysis indicates that rail demand along the corridor will increase significantly in the coming years. This reflects the anticipated investment in rail services such as DART+. Nonetheless, traffic through Julianstown is expected to remain very high unless additional interventions are implemented.

Identification of Options

Options were developed in alignment with relevant policies and the following reference cases were considered:

- **Do-Minimum-** the reference case includes committed schemes or projects in development that are likely to have a significant impact on demand for the Julianstown Traffic Relief Scheme, including:

- Delivery of Phase 1 of the Julianstown Traffic Calming Scheme; and
- Maintenance of the existing road network.

- **Do Something Options-** A long list of Do-Something Options has been identified, each of which has the potential to meet the objectives of the Julianstown Traffic Relief Scheme as follows:

- Option 1 – Traffic Management: Public Transport Priority Enhancement.
- Option 2 – Strategic Public Transport Service Enhancements.
- Option 3 – East West Link Road with Traffic Calming Measures on R132 and traffic management measures on R132 through Julianstown.
- Option 4 – Link Road from M1 to R132 North of Julianstown and traffic management measures on R132 through Julianstown.
- Option 5 – New Road Link on the Western Side of Julianstown and traffic management measures on R132 through Julianstown.
- Option 6 – New Road Link on the Western Side of Julianstown Connecting at R150 eastwards and traffic management measures on R132 through Julianstown.
- Option 7 – Reduction in the Road Toll on the M1.

Cost and Affordability Considerations

The cost of providing Julianstown Traffic Relief will depend on the option progressed. At this early stage it is assumed for the purposes of appraisal that the cost including VAT could possibly be in the [REDACTED] range for most options. Options 2 and 7 would cost considerably more but would also have wider impacts and potential benefits. There is a broad range of costs reflecting the range of potential measures identified in the long list. It should be noted that there is a high degree of uncertainty at this early stage in the project's development.

Minister for Transport Eamon Ryan and Minister of State Jack Chambers announced a €658 million investment program for regional and local roads in February 2024. The funding package will allow for the maintenance of approximately 2,640 km of roads and the strengthening of a further 2,160 km.



Julianstown was allocated €75,000 as part of the program's strategic regional and local roads category.

Risks

Risks identified for the Julianstown Traffic Relief Scheme are likely to fall under the following categories: Design and Construction; Cost; Planning; and Travel Demand. An initial risk assessment has been carried out, taking into account the likely impact and potential mitigation. At the Preliminary Business Case stage, a more comprehensive risk assessment will be required.

Next Steps

Following completion of this POD it is intended to proceed with a longlist appraisal. This will include the preparation of a more detailed review of the long list of options. Subsequently, the scheme will be subject to the preparation of a Preliminary Business Case in accordance with the Infrastructure Guidelines and Transport Appraisal Framework which will inform the options appraisal process.

1 SUMMARY OF THE PROPOSED SCHEME

1.1 Overview

- 1.1.1 Julianstown is a small settlement in County Meath situated on the R132 south of Drogheda and west of Laytown as shown in Figure 1. The village has a population of 700 people which is anticipated to grow to 756 by 2026. At Julianstown, the R132 is a single carriageway road with a 50 kph speed limit. Save for the period when travel was interrupted by the COVID-19 pandemic, traffic levels through Julianstown have been consistently high for many years and with current daily volumes in excess of 21,000 AADT (average annual daily traffic).
- 1.1.2 It is an objective of the Meath County Development Plan 2021-2027 (MOV OBJ 49) “to support essential public road infrastructure including, bypasses of local towns and villages”. Specific mention is made in the development plan to examine the feasibility and thereafter appropriately progress the design and delivery of a bypass at Julianstown. Meath County Council commissioned SYSTRA to explore the traffic issues in the Julianstown area and to prepare this POD for the Julianstown Traffic Relief Scheme.
- 1.1.3 The Julianstown Traffic Relief Scheme aims to reduce the excessive volume of traffic that passes through the village daily and in doing so, support the delivery of:
- Adequate management of regional traffic.
 - Improved safety, particularly for vulnerable road users within Julianstown Village.
 - A reduction in the harmful impacts of traffic on noise and air quality.
 - Transport user benefits due to journey time savings and better reliability.
- 1.1.4 A wide range of options have been identified that have the potential to deliver the primary aim. The options consider various modal interventions and traffic management changes.

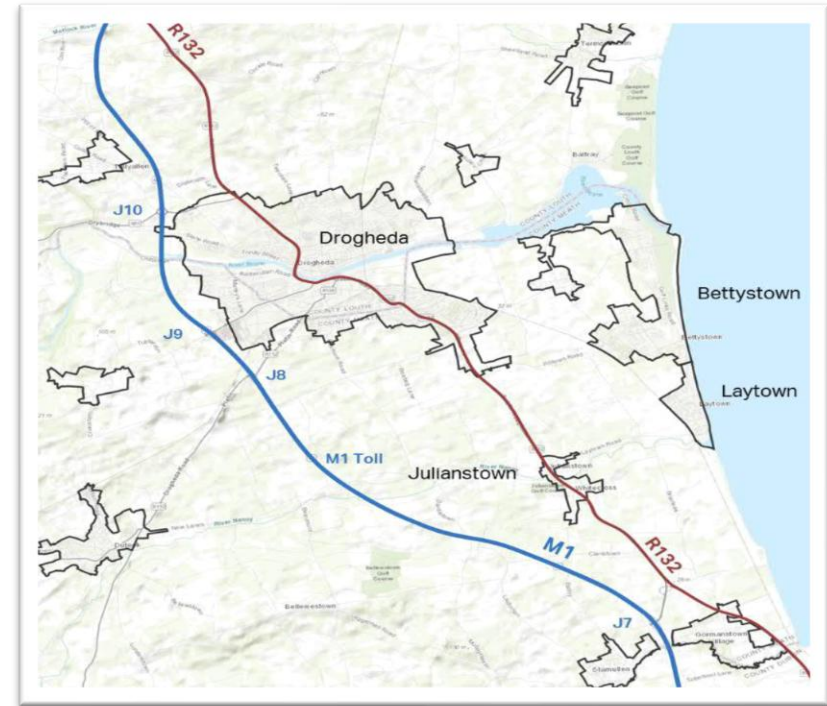


Figure 1. Julianstown and nearby settlements of Laytown, Bettystown and Drogheda

As per the Department of Transport’s Transport Appraisal Framework, this POD sets out:

- A summary of the proposed scheme
- Alignment with national and local policies
- An outline of the modal/service delivery options to be considered
- The potential range of costs and assess the proposal's affordability
- A proposed appraisal plan
- An outline governance plan.

1.2 Introduction to Investment Rationale

- 1.2.1 The R132 was historically the main north south route between Drogheda, Dublin and beyond. In 2001, the section of the M1 from Dunleer to Dundalk was opened and in 2003, the Drogheda Bypass was completed. In 2002 the R132 had an AADT of over 24,666 vehicles. The construction of this infrastructure resulted in a reduction to 18,949 vehicles in 2004. However, population and economic growth has resulted in an increase in traffic levels in the interim and an AADT of 21,166 Passenger Car Units (PCU's) was observed during Automatic Traffic Counts (ATC's) undertaken in Autumn 2022. A fixed traffic counter immediately south of Julianstown at Whitecross has recorded average daily traffic volumes of over 21,000. For a village such as Julianstown, the impact of such high traffic volumes is significant.
- 1.2.2 Along with the 700 residents, a daily school population of over 400 pupils attends the primary school at Whitecross. The Whitecross National School is located adjacent to the R132, and the daily traffic passes in close proximity to classrooms. Whilst the school dates back to 1842, the school has been redeveloped many times most recently the building was renovated and extended in 2019. The school opened three Autism Spectrum Disorder (ASD) classes since September 2021.

Traffic Conditions and Existing Road Network

- 1.2.3 Drogheda town centre it is approximately 7km north of Julianstown along the R132. South of Julianstown, the R132 connects to Junction 7 on the M1 approximately 4 km from the village. The R150 and the R132 intersect in Julianstown, connecting east-west traffic from Duleek (about 10km west of the village) to the coastal towns of Bettystown and Laytown.

- 1.2.4 The demand for transport is increasing in South Drogheda and East Meath. With a population of 44,082 in 2022, Drogheda is Ireland's largest town. The population of nearby Laytown / Bettystown was recorded in the 2022 Census as 15,764 having increased by nearly a third since 2016. With continued projections for population and employment growth, the corridor connecting Drogheda to Dublin City is expected to see a high growth in transport demand.
- 1.2.5 Drogheda, Laytown and Bettystown are served by rail with regular commuter services to Dublin City. There is also a strong north south bus corridor serving a significant proportion of the transport demand. In the 2016 Census¹, of all the towns in the commuter belt, Laytown/Bettystown had the lowest percentage of commuters commuting by car to Dublin city and suburbs, at 58%, with another 16% using the train and 21% using the bus to get to work. The buses from Laytown / Bettystown pass through Julianstown on the R132.
- 1.2.6 The River Nanny passes through Julianstown and the R132 is the most easterly road crossing. Therefore, all southbound road traffic from the settlements to the east (Laytown / Bettystown) is routed via the R132 at Julianstown. The Nanny Estuary and Shore Special Protection Area, which starts 1 km east of the village, is designated as a Natural 2000 site.

Traffic Volumes through Julianstown

- 1.2.7 The high volumes of traffic, constrained capacity through the village and the staggered junctions of the R132 and R150 result in significant traffic delays in the area. The traffic acts as a barrier to active mode travel in the village and impacts on bus journey times and reliability. There are wider economic impacts due to delays. Locally, high volumes of traffic are associated with safety, air quality and noise issues.

¹ Census of Population 2016 – Profile 6 Commuting in Ireland – Where We Work
<https://www.cso.ie/en/releasesandpublications/ep/p-cp6ci/p6cii/p6www/>

Road Accident Data

- 1.2.8 A review of available collision data for the R132 through Julianstown from the time period of 2005 to 2016, shows that there have been 25 minor injury type collisions, and 3 serious injury type collisions which have resulted in 4 serious injury casualties and 42 minor injury casualties over this 12-year period.
- 1.2.9 Based on the very high AADT for the R132 at this location, the Personal Injury Collision Rate for the section of the road is not above the expected level, however for a village with a population of 700 people an average of 2.08 minor injury collisions and 0.25 serious injury collision annually (including pedestrian casualties) is considered a cause for concern.
- 1.2.10 Over the five years between 2017 and 2022 there have been 30 accidents in the area resulting in 25 material damage collisions, 4 minor injuries collisions and 1 collision resulting in serious injury.

Pollution in the Area

- 1.2.11 Based on the traffic volumes through Julianstown, and especially passing Whitecross Primary school, the air and noise generated by this traffic is a cause for concern. Noise can disturb various human activities and awareness is increasing of its negative impact on health. As a significant contributor to environmental noise, traffic noise can cause stress, difficulty concentrating, and difficulty sleeping, as well as more serious conditions like cardiovascular disease, cognitive impairment, and hearing loss.

1.3 Julianstown Traffic Calming Scheme – Interim Measures

- 1.3.1 Planning Permission exists for an interim Julianstown Traffic Management Scheme which includes new footpath works, pedestrian crossings and raised tables throughout the village. The Julianstown traffic calming scheme was approved by An Bord Pleanála in 2021. The scheme extends between the existing gateways to the north and south of the

village and includes the junctions of the R132 with the Laytown Road, the Duleek Road and the Ballygarth Road. The extent of the interim scheme is shown in the adjacent Figure 2. The scheme involves traffic calming of the R132 through widening of the footways, narrowing the carriageway, reducing junction radii and improving the bus stops and pedestrian crossings.



Figure 2. Julianstown Traffic Calming Scheme – Interim Measures (Source: Julianstown Traffic Calming Scheme - Design Statement, 2020, prepared by Aecom on behalf of Meath County Council)

1.3.2 The scheme proposes the retention of the existing gateway signage to the north and south of Julianstown village. Generally, the Julianstown Traffic Calming Scheme interim measures propose the reallocation of road space to introduce a new shared pedestrian and cyclist path along the eastern side of the R132. This will improve road safety by connecting residential development to the north with the village centre and the primary school to the south. Public lighting is currently provided on the R132 through Julianstown village.

1.3.3 The primary objective of the interim measures is to provide more immediate local traffic calming measures to encourage lower traffic speeds within the village and to provide a more comfortable environment for pedestrians and cyclists. It is not designed to address more strategic traffic issues associated with the current operation of the R132 through the village and the broader transport network. However, the interim measures can complement the wider traffic relief scheme and form part of an overall solution for Julianstown.

1.3.4 It is currently proposed to deliver the Traffic Calming Scheme measures on a phased basis subject to funding. Funding has been secured for Phase 1 of the works which is envisaged to include the following:

- Footpath upgrades and Kassel Kerbs at the bus stop north of Julianstown, along with installation of a raised table at the existing pedestrian crossing south of the bus stop
- Upgrade the bus stop on Main Street to include Kassel Kerbs
- R132/R150 (Duleek Road) Junction:
 - New kerbs to tighten corner radii
 - Round top speed ramp on northern arm
- R132/L56221 Junction:
 - New kerbs to tighten corner radii
 - Raised speed ramp on L56221 arm
 - Raised pedestrian crossing on southern arm of junction

- 3m wide shared surface path connecting R132/L56221 Junction to Whitecross Primary School car park
- New Kassel Kerbs at Whitecross Primary School bus stops
- R132/L16161 Junction:
 - Raised table at existing pedestrian crossing on northern arm
 - Tighten corner radii and upgrade footpaths
 - Upgrade footpath on eastern side from junction to Whitecross Primary School bus stops – 3m shared surface.

1.3.5 Phase 2 of the Traffic Calming Scheme is envisaged to include the following:

- Remainder of 3m wide shared surface path along eastern side of the R132 between the speed limit gateways north and south of Julianstown (elements not delivered in Phase 1)
- Carriageway reductions at specific locations to facilitate shared path
- R132/L56221 Junction – full raised junction
- R132/L16161 Junction – full raised junction.

1.3.6 As a committed scheme with funding secured, Phase 1 of the Julianstown Traffic Calming Scheme's interim measures are proposed to be included in the Do-Minimum Scenario. As the Phase 2 measures have planning permission but require a funding source, they will be included in all Do Something options for the Julianstown Traffic Relief Scheme.

1.4 Issues Identified

1.4.1 Currently Julianstown is experiencing:

- Congestion and unreliable travel times;
- Safety concerns relating to traffic accident risk within the village as a result of traffic congestion, specifically as traffic levels constrain the use of active modes;
- An over-reliance on private cars; and

- Environmental issues of noise, local quality and emissions from high levels of car use, congestion and the impact it has on the health of the population.

1.4.2 Without decisive intervention in terms of traffic relief in Julianstown:

- Road traffic congestion will continue to increase;
- Increased risk of accidents/ collisions;
- Negative impact on active modes based on safety concerns;
- Increased journey times will result in increasing costs for businesses, higher levels of travel stress and diminished quality of life;
- The effectiveness, safety, and dependability of current transport assets would be negatively impacted; and
- The negative effects of high traffic volumes will continue to impact the local population and those living and working in the wider area who do not have a reasonable alternative route or means of public transport.

1.5 Objectives

- 1.5.1 With consideration of the issues identified and the need to adequately provide for strategic regional and rural transport, along with the policy context set out later in this POD, the primary aim for the Julianstown Traffic Relief Scheme is to:

To reduce traffic volumes on the R132 through Julianstown Village and improve the management of regional road traffic to deliver safer, more reliable and sustainable regional road connectivity in East Meath.

- 1.5.2 The overarching aim is supported by objectives to help steer the consideration of the scheme and to ensure there is focus on the key success criteria. The objectives are aligned with the Transport Appraisal Framework appraisal criteria. Whilst not mandatory under TAF, it is

useful as suggested by the guidance and is well suited to the Julianstown Traffic Relief Scheme.

- 1.5.3 At this early stage, whilst ensuring the overall aim will be achieved, sufficient flexibility needs to be provided for within the objectives to avoid predetermination of the solution. The objectives are structured to be adaptable to a SMART structure (specific, measurable, attributable, realistic and time bound) with the expectation that they will become more detailed as the project progresses through later business case stages.

Table 1. Objectives

CRITERIA		PROJECT OBJECTIVES
Transport User Benefits and Other Economic Impacts	1	Reduce the impact of congestion at Julianstown on strategic regional network traffic
	2	Improve the reliability of transport for trips through Julianstown
Accessibility	3	Improve access to education and employment for those who rely on the regional road through Julianstown
Safety	4	Reduce the risk of road traffic accidents within Julianstown Village
Local Environment	5	Reduce the impact of traffic on noise pollution
	6	Manage the impact of transport infrastructure provision on the local environment including architectural conservation, biodiversity, land take and water

2 PRELIMINARY TRANSPORT DEMAND ANALYSIS

2.1 Public Transport Provision

2.1.1 Bus Eireann's 101 bus service currently serves Julianstown. This service connects Talbot Street in Dublin's city centre, to the Drogheda Bus Station via Swords and Balbriggan. Julianstown is also served by the 101x service, which provides access to Dublin Airport from Drogheda. The area is also served by the 910 Mathew's Coach as depicted in Figure 3. Details of these bus services are contained in Table 2.

Table 2. Details of bus services in the Julianstown area

SERVICE	ROUTE	WEEKDAY FREQUENCY		NUMBER OF SERVICES PER DAY
		AM / PM Peak	Off Peak	
101	Drogheda – Julianstown-Swords – Dublin	20 minutes	30 minutes (hourly overnight)	46 per direction
101x	Drogheda-Julianstown-Balbriggan-Dublin City	15-20 minutes (AM) 20-40 minutes (PM)		5 southbound and 4 northbound
910	Bettystown–Laytown-Julianstown–Dublin	30 minutes	60 minutes	21 southbound and 21 northbound
D2	Laytown - Drogheda	30 minutes	30 minutes	37 per direction

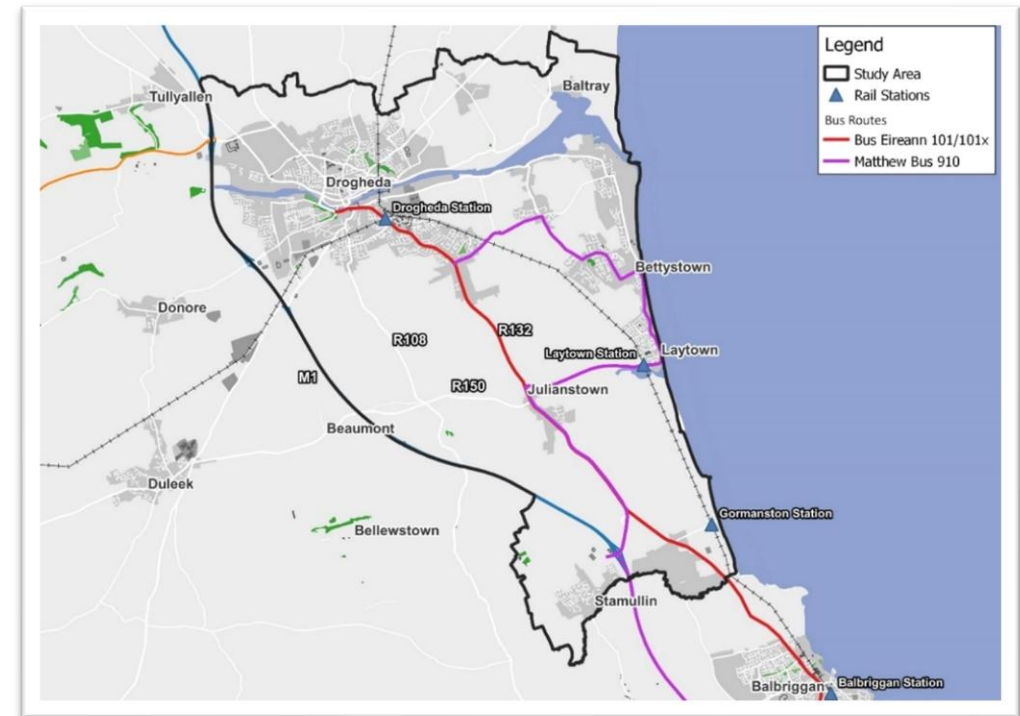


Figure 3. Graphical representation of bus routes

2.2 Existing Population

- 2.2.1 The population of Julianstown was 616 in 2011, 681 in 2016, 700 in 2022 and is expected to reach 756 by 2027. The major population centres in the vicinity of Julianstown are shown in Figure 4.

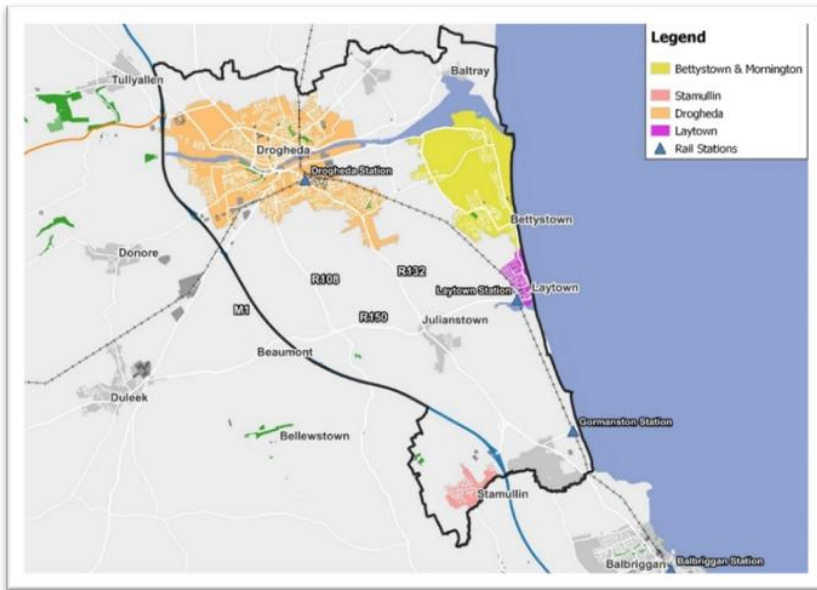


Figure 4. Extended study areas

2.3 Future Demand Growth

- 2.3.1 There has been a substantial population growth within the extended study area in recent history. The population of the Laytown-Bettystown-Mornington-Donacorney urban area has grown from 10,900 in 2011², to 11,900 in 2016³, to 15,700 in 2022⁴. This is an increase of 4,800 or 44% between 2011 and 2022. The population of Drogheda has grown from 38,600 in 2011⁵, to 41,000 in 2016⁶, to 44,100 in 2022⁷. This is an increase of 5,500 or 14% between 2011 and 2022. Given the substantial population growth within the extended study area, demand for transport has risen significantly over the past 15 years.
- 2.3.2 In the coming years wider interventions in the delivery of sustainable transport and demand management will mitigate the impact of increasing demand for transport on traffic problems, such as improvements to the Dublin Belfast rail corridor and DART+. However, a significant proportion of transport demand will continue to be served by the road network through both private car, goods traffic and bus based public transport. As a result, traffic volumes through Julianstown will remain high even as demand for public transport and active modes increase.

²

https://web.archive.org/web/20140714182209/http://census.cso.ie/sapmap2011/Results.aspx?Geog_Type=ST&Geog_Code=11013

³

https://web.archive.org/web/20210302012417/http://census.cso.ie/sapmap2016/Results.aspx?Geog_Type=ST2016&Geog_Code=ADC8C330-CEBE-4734-B55F-B65BE6198DAC#SAPMAP_T1_100

⁴

<https://visual.cso.ie/?body=entity/ima/cop/2022&boundary=C04160V04929&guid=1a51d2fd-a5fc-4954-bff4-7fcf3554cf32>

⁵ <https://www.cso.ie/en/releasesandpublications/ep/p-cp2tc/cp2pdm/pd/>

⁶ <https://www.cso.ie/en/releasesandpublications/ep/p-cp2tc/cp2pdm/pd/#:~:text=Census%202016%20results%20show%20that,the%20largest%20town%20in%20Munster.>

⁷ <https://www.cso.ie/en/releasesandpublications/ep/p-cpp1/censusofpopulation2022profile1-populationdistributionandmovements/keyfindings/>

2.4 Traffic Patterns

2.4.1 Various surveys were undertaken to obtain information in relation to traffic flows and trips. For this POD data was collected and analysed from the following:

- NTA's Eastern Region Model (ERM)- Select Link Analysis (Origin and Destination) and Screenline Survey
- TomTom- select link analysis
- Automatic Traffic Counts (ATC)'s from October 2022.

2.4.2 The Eastern Region Model (ERM) was used to examine origin and destination trips. Whilst the model has a base year of 2016, it can project demand into the future. Transport demand has been modelled for 2043. The specific ERM data that was extracted in the analysis includes:

- Julianstown Northbound 2016 AM and PM
- Julianstown Southbound 2016 AM and PM
- M1 Northbound 2016 AM and PM
- M1 Southbound 2016 AM and PM.

2.5 Eastern Regional Model (ERM)

2.5.1 Select link analysis was completed using the 2016 base year model and a 2043 projection. The data was used to produce QGIS maps to show both the distribution of origin and destination trips for Julianstown, and the M1 for both Southbound and Northbound journeys. All link analysis was completed for the AM and PM peaks, as shown in Figure 5.

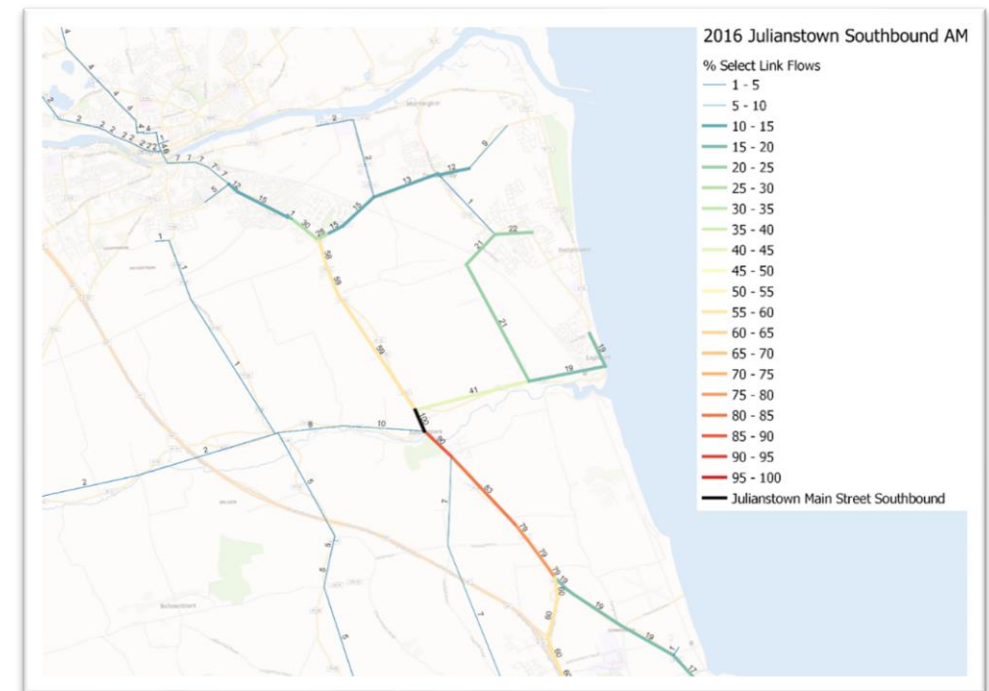


Figure 5. Select link analysis for Julianstown Mainstreet Southbound during the AM peak for 2016

2.5.2 The percentage of traffic flow through Julianstown southbound during the morning peak (AM), as shown in Figure 5, indicates:

- 59 % travel on the R132 into Julianstown,
 - inclusive of 28% from the Northeast; and
- 41% travel from the east on the R150.

2.5.3 This indicates that the majority of trips through Julianstown are from a dispersed local area predominantly within northeast Meath and south Drogheda. Approximately 60% of the traffic travelling south through Julianstown on the R132 continues to travel south via junction 7 on the M1 towards Dublin. The data from the ERM correlates with what was obtained from the TomTom data, indicating similar southbound travel patterns and traffic flows for the AM traffic flows.

2.5.4 Northbound traffic movements in the PM peak period are shown in Figure 6. As traffic travels north through Julianstown: 42% travels eastwards on the R150, with destinations in either Laytown or Bettystown and surrounding areas. Based on the data, 26% of the traffic travels to the Northeast, 31% travels to Drogheda mainly to the southern side of the town.

2.5.5 The comparison of the TomTom Data and the ERM Data, shows similar traffic patterns for the AM, PM, and 24-hour periods.

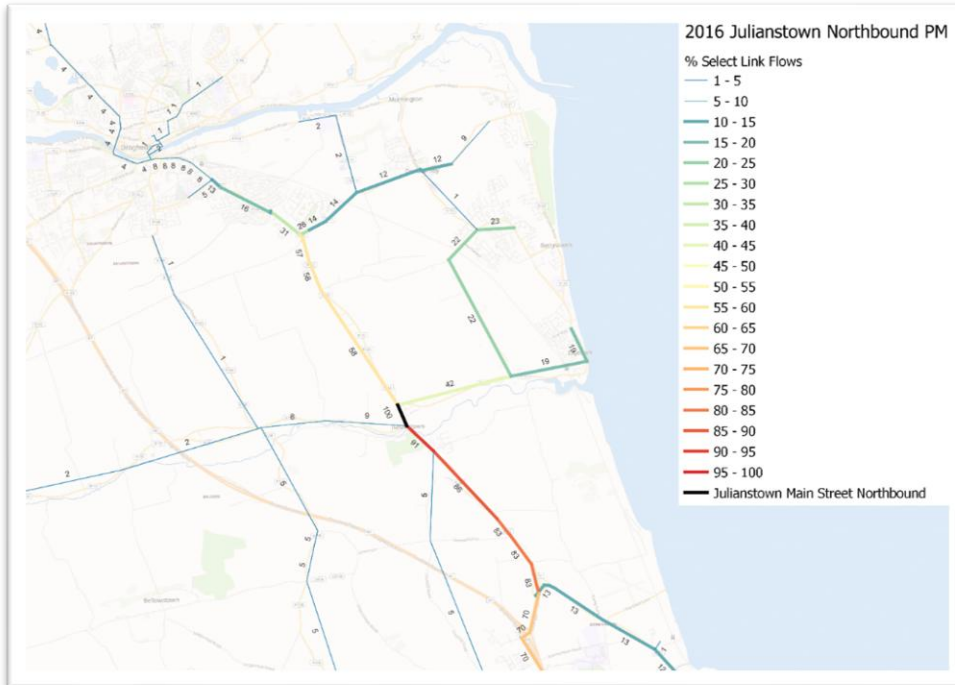


Figure 6. Select link analysis for Julianstown Northbound during the PM peak for 2016

2.6 Regional Function of R132

- 2.6.1 There has been speculation that traffic volumes through Julianstown are somewhat influenced by toll avoidance on the M1. The M1 runs parallel to the R132, and as the primary national road corridor caters for high volumes of traffic within the corridor. At the site of a fixed traffic counter on the M1 between junction 7 Julianstown and junction 8 Duleek the average daily traffic (ADT) volume in 2023 was 38,202
- 2.6.2 The M1 is operated as a PPP concession between Junctions 7 and 18 with fixed tolls applied between Gormanstown and Monasterboice (see Figure 7). The main online toll location is west of Julianstown. Consideration was given as to whether toll avoidance results in a proportion of the traffic demand through Julianstown.

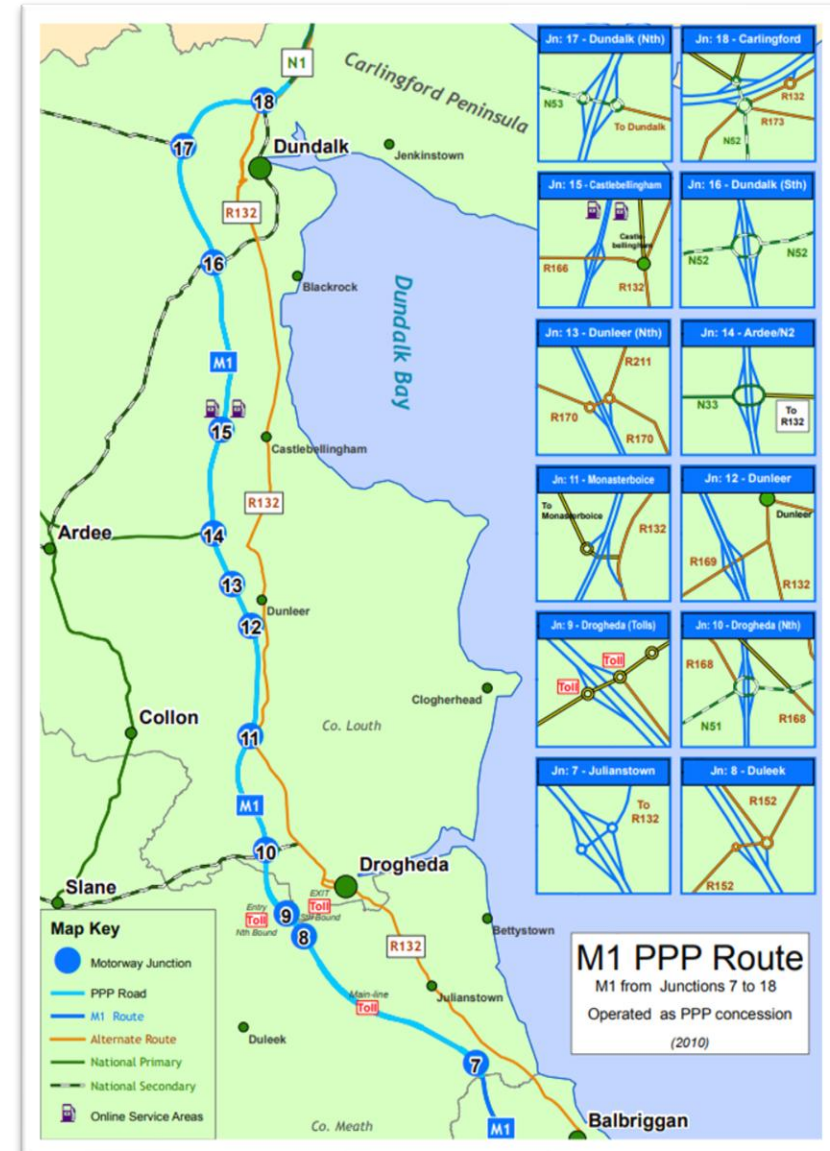


Figure 7. Map of M1 PPP Route and locations of Tolls

- 2.6.3 The traffic patterns identified through the preliminary demand analysis showed that the traffic through Julianstown is largely moving between Dublin to the south and areas to the north and east of Julianstown, including south Drogheda and Bettystown / Laytown. There is a relatively long gap between junctions on the M1 between junction 7 Julianstown and junction 8 Duleek.
- 2.6.4 For the majority of the traffic through Julianstown, it would not be efficient to join the M1 north of Julianstown (i.e., at Junction 8 or 9). A reduction in the toll on the M1 or even its removal is therefore unlikely to divert a significant proportion of the traffic from the R132 to the M1.
- 2.6.5 Previous studies have reached the same conclusion. Whilst a small proportion of traffic is avoiding the toll by routeing via Julianstown, the majority is following a direct route and toll avoidance is not the root cause of high traffic volumes through Julianstown.

2.7 Potential Impact of DART+ and other public transport interventions

- 2.7.1 The DART+ Coastal North project is proposed to provide a significant increase in service on the rail line serving Laytown and Drogheda. Whilst this project is subject to planning and funding, it is well developed. On the 21st May 2024, Minister Eamon Ryan secured agreement from the Cabinet for the DART+ Coastal North rail project to enter the planning system. Following Government approval, a Railway Order (planning application) for the DART+ Coastal North project was submitted to An Bord Pleanála on the 12th of July 2024. Subject to planning permission and funding arrangements, construction works on the route could commence later this decade, taking approximately three years to complete.
- 2.7.2 Given the importance of DART+ to serving transport demand in the study area, an analysis has been undertaken of its' potential impact on travel patterns. The NTA's ERM was used to model a future scenario for 2043 which includes the full delivery of the Greater Dublin Area Transport Strategy, including DART+.

- 2.7.3 Figure 8 and Figure 9, show data extracted from a screenline analysis in the ERM within the area of reference, with a specific focus on 2016 and the forecasted 2043 numbers in relation to the modal split. The tables that follow provide comparisons in the traffic volumes and the modal split between 2016 and 2043 for the AM and PM Southbound and Northbound.

- 2.7.4 It is evident that private vehicles are the predominant mode of transportation, and it is predicted that 2043 will see a continuation of this trend despite a significant increase in rail travel as a result of the improvements planned under the GDA Transport Strategy such as DART+.

Table 3. Southbound and Northbound AM

Location On Screenline	Mode	Southbound			Northbound		
		Traffic Volume		Difference	Traffic Volume		Difference
		2016	2043		2016	2043	
M1	Cars	1,137	1,881	744	574	576	2
	Buses	10	11	1	8	9	1
Dardistown Cross	Cars	310	798	488	129	286	157
Julianstown	Cars	1,138	1,250	112	481	468	(13)
	Buses	7	7	0	5	5	0
Rail	Train	1,060 people	2,029 people	969	149	301	152

Table 4. Southbound and Northbound PM

Location On Screenline	Mode	Southbound			Northbound		
		Traffic Volume		Difference	Traffic Volume		Difference
		2016	2043		2016	2043	
M1	Cars	480	546	66	854	1,285	431
	Buses	6	7	1	13	14	1
Dardistown Cross	Cars	95	190	190	350	783	433
Julianstown	Private Vehicles	558	541	(17)	1,133	1,185	52
	Buses	5	5	0	6	7	1
Rail	Train	142	260	118	585	1,104	519

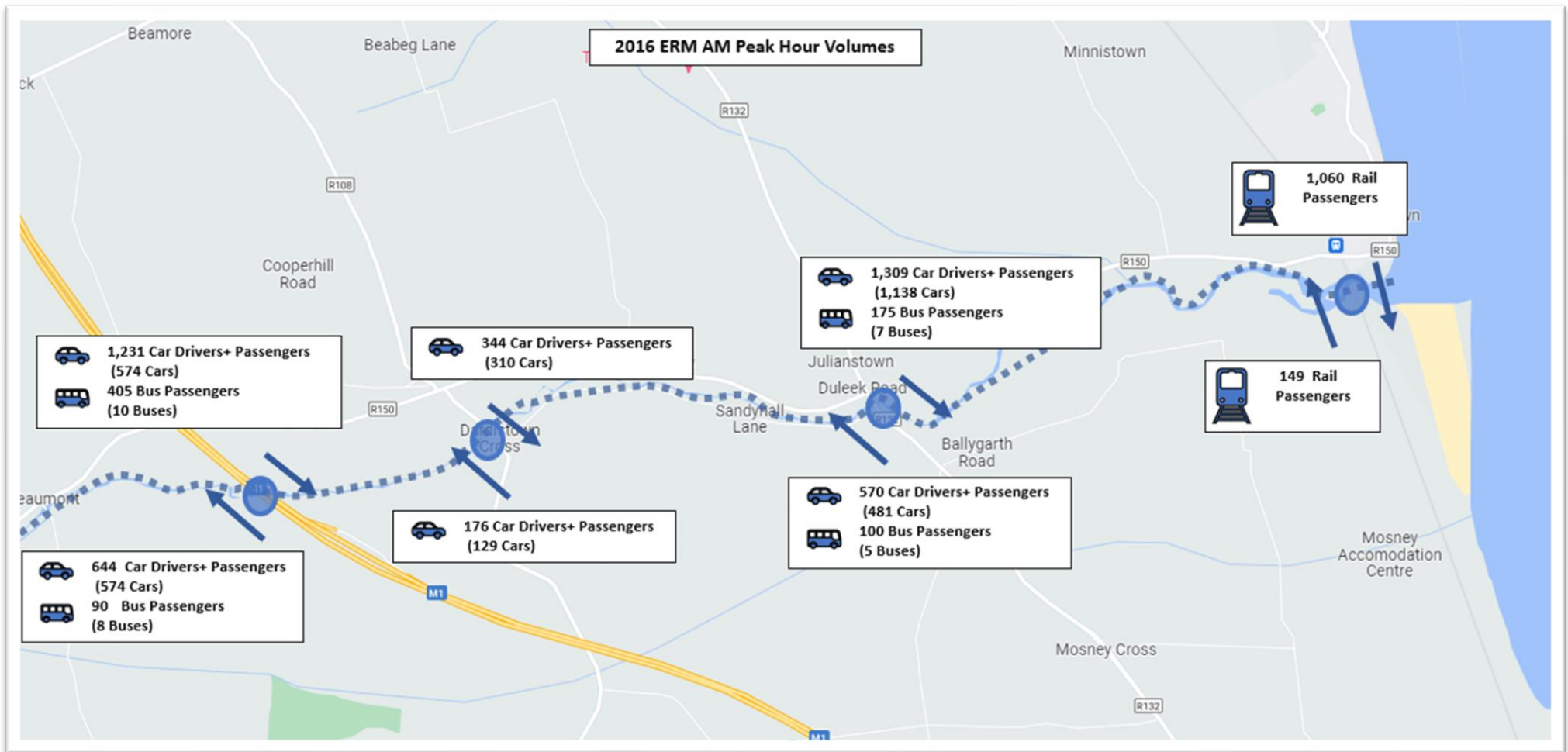


Figure 8. Area of reference screenlines – ERM 2016 run

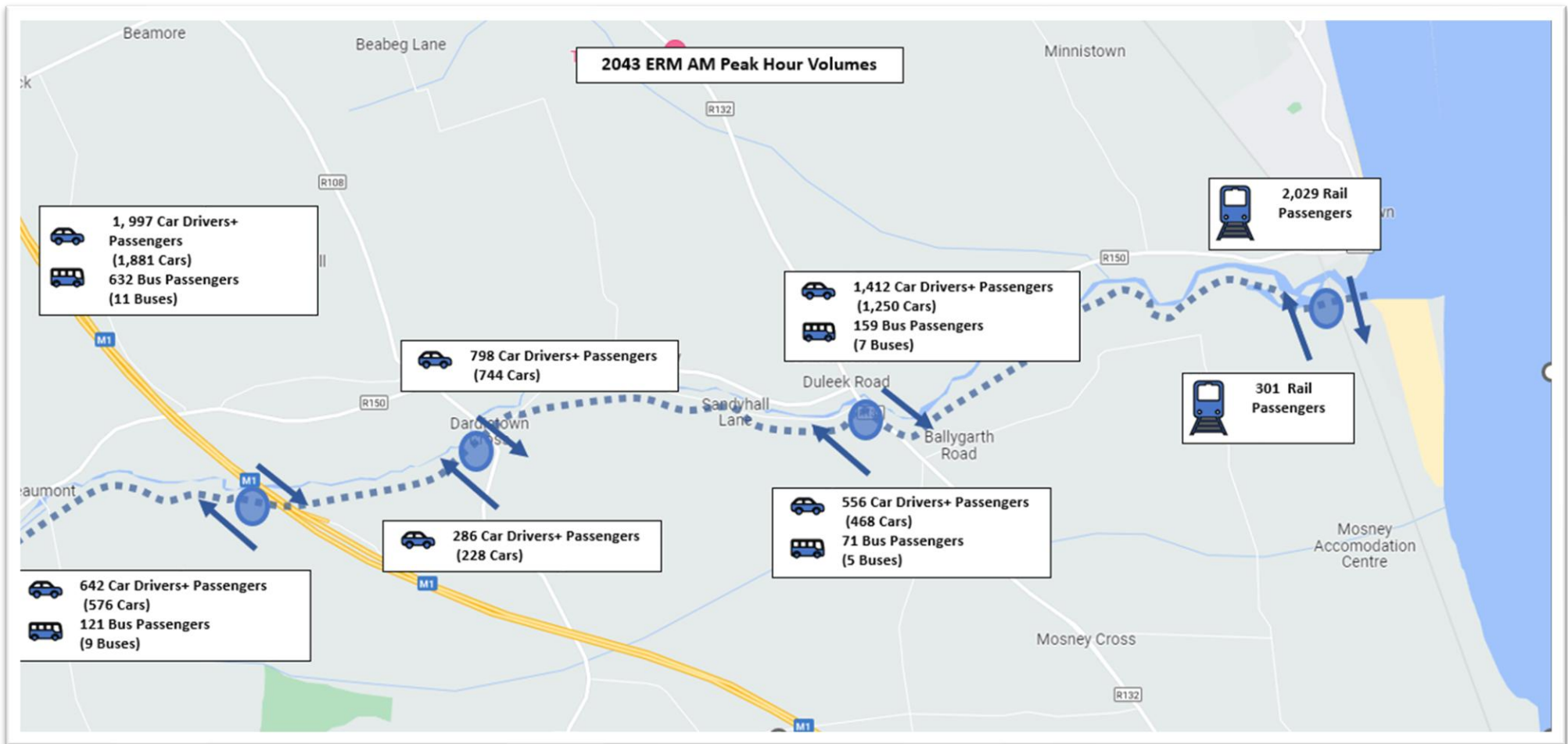


Figure 9. Area of reference screenlines – ERM 2043 run with Greater Dublin Area Transport Strategy interventions modelling including DART+⁸

⁸ Forecast traffic volumes have been extracted from readily available ERM runs. Further modelling and analysis will be undertaken as part of the options assessment process.

2.8 Conclusions on Preliminary Demand Analysis

- 2.8.1 Traffic volumes through Julianstown have been consistently above 20,000 AADT (Average Annual Daily Traffic) with the exception of the period of interruption to travel during the COVID-19 pandemic- and reached over 21,000 AADT during 2024. Traffic data from surveys undertaken in Autumn 2022 show that traffic levels have increased slightly on pre-pandemic volumes. The fixed counter south of Julianstown has recorded daily average traffic volumes in excess of 21,000.
- 2.8.2 In analysing the data, a key consideration was the identification of the origin and destination of trips through Julianstown. The data sets available show that the vast majority of the traffic demand is travelling between South Drogheda, the Laytown / Bettystown areas and Dublin City. Whilst the M1 is the primary national road along the corridor, given the location of interchanges onto the M1, travelling via Julianstown is the most direct route for the travel patterns identified. Of the traffic passing through Julianstown in the AM peak hour, approximately 5-15% travel from central/north Drogheda, across the River Boyne, instead of potentially joining the M1 at the Donore Road interchange (Junction 9) or the Platin Road interchange (junction 8). Approximately 60 % of the traffic travelling south through Julianstown on the R132 travels south via junction 7 on the M1.
- 2.8.3 Analysis of forecast traffic in 2043 in a scenario including new transport infrastructure proposed within the Greater Dublin Area Transport Strategy shows that in years to come there will be significant growth in rail demand along the corridor. This reflects the planned investment in rail services such as is included in DART+. Nonetheless, the traffic volumes through Julianstown are forecast to remain very high unless further interventions are made. This is largely due to the significant growth in population in the larger settlements within the wider area of south Drogheda and East Meath.

2.9 Acceptable Levels of Traffic

A separate assessment was undertaken, examining the traffic levels in Julianstown from the perspectives of road capacity, comparisons with similar settlements, and noise pollution, to determine an acceptable level of traffic for the village. This assessment can be read in its entirety in Appendix A.

Julianstown experiences disproportionately high traffic volumes, significantly exceeding the capacity of the R132. The road's design capacity for maintaining an acceptable Level of Service (LOS D) is 8,600 AADT, yet the current traffic flow is over 21,000 AADT. This excessive traffic, which leads to congestion and delays, impacts both local journeys and the accessibility to the M1 motorway for south Drogheda, Laytown, and Bettystown.

A comparison with other villages of similar population size highlights the extent to which Julianstown is an outlier. While comparable towns experience AADT levels below 10,000, Julianstown faces more than double that amount.

In addition to congestion, the high traffic volume contributes directly to excessive noise pollution, with recorded levels exceeding 70 dB in Julianstown. According to the European Environment Agency (EEA), prolonged exposure to noise pollution at these levels can lead to health risks, particularly for children, including cognitive impairment and sleep disturbances. Guidance from the UK Design Manual for Roads and Bridges (DMRB) confirms that in order to achieve a meaningful reduction in noise levels, traffic volumes would need to be reduced significantly—by approximately 50% to 70%—bringing Julianstown's AADT within a range of 6,000 to 10,000 AADT.

Combining of all of these factors leads to a conclusion that the AADT on the R132 through Julianstown should be reduced to under 8,000 AADT in order to restore the function of the corridor, ensure traffic levels consistent with similar villages and improve the quality of life for residents.

3 STRATEGIC ALIGNMENT

3.1 Policy Context

3.1.1 All United Nations Member States, including Ireland, adopted the 2030 Agenda for Sustainable Development in 2015 which included Sustainable Development Goals (SDGs). There is a strong correlation between the United Nations (UN) SDGs and the National Strategic Outcomes (NSOs) of the National Planning Framework 2040. The alignment of the project with NSOs is described in this section.

3.1.2 Julianstown Traffic Relief aims to address a combination of the following SDG's:

- **SDG 3: Good Health and Well-Being;** reducing harmful emissions and in turn the reduction of severance and an inhospitable environment for active modes due to congestion will help ensure healthy lives and promote well-being for people of all ages.
- **SDG 8: Decent Work and Economic Growth;** Improving access to employment and services to promote sustained, inclusive and sustainable economic growth, full and productive employment and decent work for all.
- **SDG 10: Reduced Inequalities;** By providing enhanced connectivity, a reduction in barriers to travel and accessibility to employment, education and services.

Addressing the harmful impacts of traffic in Julianstown will support the health and well-being of the local population. Reducing traffic delays and improving reliability, including for public transport, will improve access to education and employment and support the economy.

3.1.3 The Table below outlines the key existing National, Regional, and local policies, plans, and guidelines, relevant to the scheme.

Table 5. Planning and Policy Documents

National Level	
○	Project Ireland 2040: National Planning Framework 2040 (First Revision April 2025) and National Development Plan 2021-2030 (Review 2025)
○	National Investment Framework for Transport in Ireland 2021
○	Climate Action Plan / National Adaptation Framework / Sectoral Adaptation Plan for Transport Infrastructure
○	2022 National Sustainable Mobility Policy
○	Our Journey Towards Vision Zero: Road Safety Strategy 2021-2030
Regional Level	
○	NTA's Greater Dublin Areas Transport Strategy 2022 – 2042
○	Eastern and Midland Regional Spatial and Economic Strategy 2019 – 2021
Local Level	
○	Meath County Development Plan 2021 - 2027

3.2 National Policy

Project Ireland 2040: National Planning Framework (First Revision April 2025) (Government of Ireland, 2025)

3.2.1 A key future policy priority for the Eastern and Midland Region included in Project Ireland 2040 is: “A focused approach to compact, sequential and sustainable development of the larger urban areas along the Dublin – Belfast economic and transport corridor, along which there are settlements with significant populations such as Dundalk and Drogheda.”

3.2.2 Julianstown Traffic Relief is aligned with the 10 key NSO's as follows:

- **NSO 3: Strengthened Rural Economies and Communities-** the scheme will directly benefit the community of Julianstown making it a healthier, more attractive place to live and attend school.
- **NSO 5: Sustainable Mobility-** there is the potential to address the barrier that traffic volumes pose to active modes and to improve bus journey times and reliability together with better access to bus stops.
- **NSO 8: Transition to a Carbon-Neutral and Climate Resilient Society-** care will need to be taken in the design and consideration of options to avoid growth in car traffic demand, particularly in the short term when the proportion of vehicles powered by internal combustion engines is high.
- **NSO 10: Access to Quality Childcare, Education and Health Services-** improved connectivity and journey times will enhance access to services and reduce the barriers to travel.

3.2.3 The option development and consideration of the Julianstown Traffic Relief Project will need to be aligned with the core principles set out by NPF 2040. There is potential to support an increase in sustainable travel locally such as safe routes to Whitecross National School and to address some of the inequality created by high car dependency, particularly in rural areas.

Project Ireland 2040: National Development Plan Review 2025 (Government of Ireland, 2025)

3.2.4 The NDP supports targeted improvements to sections of the regional and local road networks. Projects completed to date under the NDP include the Bettystown to Laytown regional road. Investment in roads to address safety issues, deliver traffic management and to support the local community is aligned with the NDP.

National Investment Framework for Transport in Ireland (Dept of Transport, 2021)

3.2.5 The alignment of options to deliver Julianstown Traffic Relief Scheme will have to be considered within the NIFTI criteria. This will include improving conditions for active travel and public transport through the village whilst prioritising use of existing infrastructure.

Climate Action Plan 2024 (Department of the Environment, Climate and Communications, 2023)

3.2.6 The impact of Julianstown Traffic Relief Scheme on transport emissions will require careful consideration. Current travel patterns in the area are very dependent on cars and measures to support local journeys by active modes and accessibility to bus stops will align with CAP 2024

National Sustainable Mobility Policy (DoT, 2022)

3.2.7 Local interventions to improve mobility of the population in Julianstown will align with the National Sustainable Mobility Policy. Options that deliver traffic relief whilst improving conditions for active modes and public transport relative to car will perform best against policy themes.

Our Journey Towards Vision Zero: Road Safety Strategy 2021-2030

3.2.8 Julianstown Traffic Relief Scheme will assist in the implementation of the Road Safety Strategy, through the reduction of congestion and risk of collisions.

3.3 Regional Policy

Regional Spatial and Economic Strategies (RSES)

3.3.1 Julianstown is centrally located in this region. RSES is focusing on and intends to improve the economies locally and attract investment by improving the quality of life within the region.

3.3.2 The growth in population envisaged within the RSES for the region generally and particularly Drogheda, Bettystown and Laytown will increase demand for transport along the corridor to Dublin including on the R132 through Julianstown. The Julianstown Traffic Relief Scheme will need to take into account the additional transport demand and the impact on the local population, environment and wider economy.

Greater Dublin Area Transport Strategy 2022- 2042 (National Transport Authority 2022)

3.3.3 The objectives for the Julianstown Traffic Relief Scheme align with objectives set in the GDA by the NTA with aims for improving transport options and connectivity through Julianstown leading to a better quality of life for the local population and supporting a strong and stable economy and inclusive transport system given the function of the strategic regional road to provide for connectivity to isolated areas. The high volumes of buses routed along the R132 will benefit from interventions which would strengthen public transport along the corridor.

3.4 Local Policy

Meath County Development Plan 2021- 2027 (Meath County Council 2021)

3.4.1 The policies (MOV POL) contained in the Movement Strategy relevant to the Julianstown Traffic Relief Scheme are as follows:

- **MOV POL 9:** To ensure that the design and planning of transport infrastructure and services accords with the principles of sustainable safety, in order that the widest spectrum of needs, including pedestrians, cyclists, the ageing population and those with mobility impairments are taken into account.
- **MOV POL 30:** To liaise with the NTA and TII (where appropriate) on appropriate control measures within its remit, designed to better manage the demand for road space to allow the efficient movement of essential traffic.

- **MOV POL 32:** To ensure the protection of the existing roads infrastructure while improving the capacity and safety of the road network to meet future demands.

3.5.7 The key objectives under the movement strategy (MOV OBJ) are:

- **MOV OBJ 28:** To revise road junction layouts, where appropriate, to provide dedicated pedestrian and cycling crossings, reduce pedestrian crossing distances, provide more direct pedestrian routes, and reduce the speed of turning traffic.
- **MOV OBJ 35:** To support the installation of appropriate traffic management measures on a case-by-case basis on the approach roads to all schools throughout the county in the interest of road safety.
- **MOV OBJ 49:** To support essential public road infrastructure including, bypasses of local towns and villages and proposed national road schemes and where necessary reserve the corridors of any such proposed routes free of development, which would interfere with the provision of such proposals. A list of such schemes is included in the Development Plan with reference to the R132 Julianstown Bypass. Each of these projects will be subject to the outcome of an Appropriate Assessment process.
- **MOV OBJ 50:** To continue to deliver targeted capacity road upgrades within the County to eliminate congestion blackspots.
- **MOV OBJ 55:** To promote the delivery of the following key strategic road Bryanstown Link Road (Drogheda).
- **MOV OBJ 66:** To assess the potential for, and, if appropriate, introduce, HGV management measures in town centres

Consideration of Julianstown Traffic Relief Scheme is an objective of the current Meath County Development Plan. The main policies and objectives set out in the Development Plan will be cascaded down to the project with a focus on the reduction of the congestion, traffic calming and traffic management whilst supporting the role of the essential road network.

3.4.2 The Meath CDP sets out the following Movement Objectives for Julianstown:

- **JUL OBJ 8:** To seek to introduce traffic management and traffic calming through Julianstown in order to provide an enhanced and safer environment for the village.
- **JUL OBJ 9:** To provide/upgrade pedestrian crossing facilities such as a raised junction treatment at key locations.
- **JUL OBJ 10:** To improve linkages along the R150 between Julianstown and Laytown including the improvement of cyclist and pedestrian connectivity and facilities between both centres.
- **JUL OBJ 11:** To examine the feasibility and progress the design and delivery of a preferred option for the Julianstown Bypass in conjunction with relevant stakeholders.

3.4.3 The policies and objectives set out in the Meath CDP will be cascaded down to the project with a focus on pedestrian improvements and the reduction of the congestion, traffic calming and traffic management.

5 MODAL / SERVICE DELIVERY OPTIONS

5.1 Guiding Principles

5.1.1 Aside from the objectives, initial demand analysis, and policy context, it is critical to consider the constraints and opportunities in the area that will impact the options available for relieving traffic within Julianstown. In line with the requirements of NIFTI it will be important to take a multi-modal approach to the consideration of options and seek to improve provision for active modes and public transport. The utilisation of existing infrastructure will also be an important part of options development in keeping with the NIFTI investment hierarchy whilst being conscious of the current policy and the scheme objectives.

5.2 Constraints

5.2.1 Prior to the identification of potential options to meet the project aim and objectives, consideration was given to underlying issues and constraints.

Environmental Protection Areas

5.2.2 Under the EU Birds Directive (79/409/EEC) Special Projects Areas are designated for the protection of rare and vulnerable species. The River Nany Estuary and Shore SPA is located to the east of Julianstown as shown in Figure 10. The designated site comprises the estuary of the River Nanny and sections of the shoreline to the north and south of the estuary mouth. The overarching Conservation Objective for River Nanny Estuary and Shore Special Protection Area is to ensure that waterbird populations and their wetland habitats are maintained at, or restored to, favourable conservation condition. This includes, as an integral part, the need to avoid deterioration of habitats and significant disturbance; thereby ensuring the persistence of site integrity.

5.2.3 In addition to the SPA, the Laytown Dunes and Nanny Estuary are proposed Natural Heritage Areas (NHAs). NHAs have been created by the Natural Parks and Wildlife Service (NPWS) as they are considered important for the habitats present or areas which hold species whose habitats require protection. They are the basic designation for wildlife protection in the Irish state. The NHA dataset comprises of a range of sites designated under Irish legislation. The process of designation is on-going.

5.2.4 Both the SPA and NHA are considered constraints in the context of the Julianstown Traffic Relief Scheme at this POD stage.

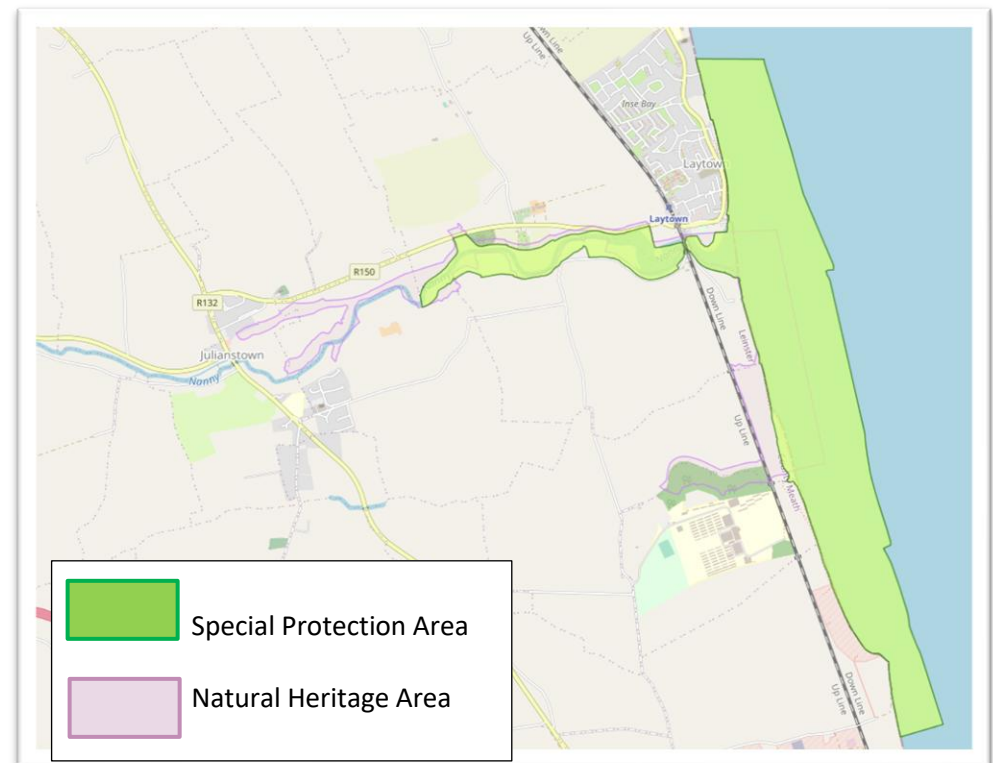


Figure 10. Designated Areas of Environmental Protection

HGV Restrictions

- 5.2.5 Whilst HGV volumes on the R132 are not particularly high as a percentage of overall traffic, the volume of HGVs is significant, and they have a disproportionate impact on the local environment. Consideration was given to the potential for HGV restrictions as a means of contributing towards achieving the objectives for the Julianstown Traffic Relief Scheme. The alternative routes for HGVs are limited, primarily due to the lack of bridge crossings and the severance caused by the River Nanny. There is a significant risk that severe restrictions on HGV's would results in long diversions. Additional vehicle kilometres would not only result in unacceptable costs, but there would also be a likely increase in transport emissions.
- 5.2.6 Minor HGV restrictions would do little other than move the problem to a different time of day and would be insufficient to adequately meet the objectives for the Julianstown Traffic Relief Scheme. More severe HGV restrictions could be considered in conjunction with options that provide alternative viable routes.

5.3 Definition of Reference Case

- 5.3.1 The definition of the reference case is an important step in the development of options. A 'Do-Nothing' reference case would result in no change to transport infrastructure provision from what exists today. The population of the wider area is anticipated to grow in the coming years and should no additional transport infrastructure be provided there would be detrimental impacts on the environment, economy and well-being of the population. In addition, the legally binding targets for the decarbonisation of transport set out in the CAP 2024 would not be met. Therefore a 'Do-Nothing' reference case is not considered appropriate.
- 5.3.2 A 'Do-Minimum' reference case may include committed schemes or projects in development that are likely to have a significant impact on demand for the Julianstown Traffic Relief Scheme. The 'Do-Minimum' is assumed to include:

- Delivery of Phase 1 of the Julianstown Traffic Calming Scheme; and
- Maintenance of the existing road network.

5.4 Sensitivity Testing of the Reference Case

- 5.4.1 DART+ Coastal North was submitted for planning in July 2024. As the scheme is subject to Railway Order and funding, it is not included in the reference case for the Julianstown Traffic Relief Scheme. The progress of DART+ Coastal North will need to be monitored through later appraisal stages.
- 5.4.2 As the scheme has a significant impact on transport in the corridor it would be remiss not to consider its potential impact and contribution to delivering the objectives of the Julianstown Traffic Relief Scheme. Therefore, as a minimum, sensitivity tests will need to be prepared to examine any potential intervention in the context of a future transport network that includes DART+ Coastal North.

5.4 Do Something Options

- 5.4.1 A long list of Do-Something Options was identified having the potential to meet the objectives of the Julianstown Traffic Relief Scheme. The options are presented in the table below. A high-level early assessment of alignment with the NIFTI modal and intervention hierarchy is provided.
- 5.4.2 The options comprise different interventions such as new road links, traffic management, bus priority or road widening. It should be noted that options may be delivered in combination, for example, a new road link could be delivered in conjunction with traffic management and/or bus priority through Julianstown. Also, more than one road link could be delivered and may result in wider benefits. The Phase 2 interim traffic calming scheme measures discussed in Section 1.3 have planning approval in place, however, do not have funding secured. As such, these measures are included in all Do Something options.

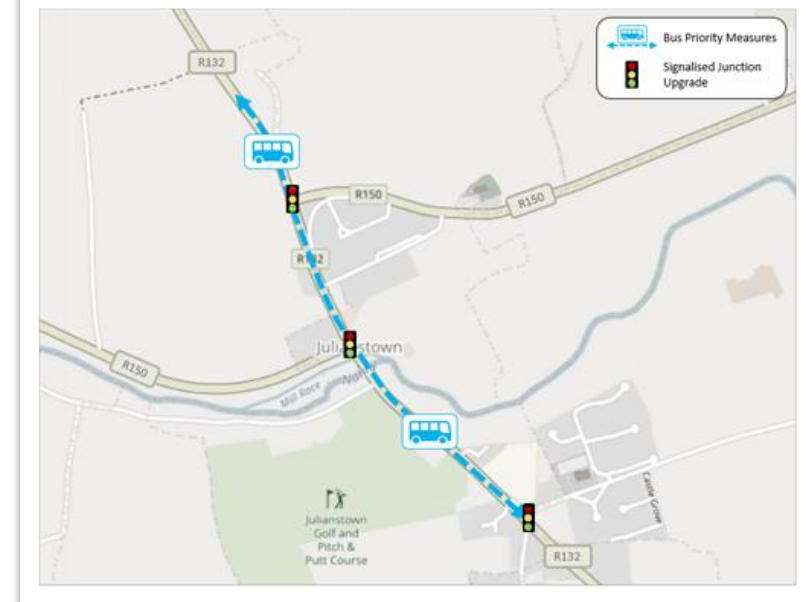
OPTION 1 TRAFFIC MANAGEMENT: PUBLIC TRANSPORT PRIORITY ENHANCEMENT

Route 101 Bus Eireann connects Drogheda and Julianstown with approximately 46 buses per day operating over 24 hours. The route, mostly on the R132 road, runs every 20 to 30 minutes from Drogheda bus station to Talbot Street in Dublin City Centre.

Option 1 comprises the signalisation of the junctions of the R132 and R150, along with the R132/L16161 (Ballygarth Road) junction to the south of Julianstown. Bus priority would be provided through signal control and would be further enhanced through the provision of bus lanes on the R132 on approach to the junctions north and south of Julianstown so that buses are not delayed in traffic.

Suitable provision for active travel would be included in option 1 following the principles that have been applied to BusConnects infrastructure design. The newly signalised junctions would incorporate pedestrian crossings. The capacity for vehicular traffic would be reduced through Julianstown through control of the new traffic lights.

Construction and land costs would largely be dependent on the scale of road widening required to provide the new bus priority and active mode infrastructure.



NIFTI Modal Hierarchy		NIFTI Intervention Hierarchy		Comment
Active Travel	✓	Maintain	✓	Option 1 scores high on both the NIFTI Modal and Intervention Hierarchies. It supports active travel and prioritisation of public transport. In terms of intervention, the focus would be on improving existing infrastructure on the R132 and maintaining infrastructure elsewhere. Option 1 aligns with the NIFTI priority of Protection and Renewal by improving safety in Julianstown Village. This option also supports the NIFTI priority for decarbonisation through the provision of public transport priority and improvements in active mode infrastructure.
Public Transport	✓	Optimise	✗	
Private Vehicles	✗	Improve	✓	
		New	✗	

OPTION 2 STRATEGIC PUBLIC TRANSPORT ENHANCEMENT

Julianstown is well served by high frequency bus, with the wider area also well served by rail connections to Dublin. There is potential benefit in increasing services, particularly on the rail corridor. DART+ Coastal North proposes to more than double rail services between Drogheda and Dublin providing for an increase in passenger carrying capacity from 12,500 to 26,600. Under the plans, there could be as many as 8 train services per hour providing a frequency of every 7.5 minutes.


Increase from **12,500 to 26,600**
passengers (per 3hr peak)


Increase from **11 to 24**
services (per 3hr peak)


1 Enterprise Service per hour
2 Commuter Services per hour
5 DART Services per hour
* All services originating in
Drogheda

In addition to DART+ Coastal North, longer term potential investment in rail is identified within the Draft All Island Strategic Rail Review (AISRR). Long term interventions identified in the AISRR include a new rail line between Clongriffin and Drogheda, a rail spur to Dublin Airport and four tracking between Clongriffin and Dublin Connolly. These interventions would provide a very large increase in rail capacity within the study area.

The existing bus services are largely focused on connectivity to Dublin City Centre. There are no direct bus services between Bettystown / Laytown and Dublin Airport or Swords. Public transport journey times between these large trip generators and the study area do not compare favourably with car journey times of the order of 30 to 45 minutes and public transport journey times approximately 80 minutes and requiring a transfer.

Option 2 comprises enhancements to strategic public transport services comprising:

- Delivery of DART+ Coastal North
- Delivery of interventions identified in the AISRR
- New direct bus service between Bettystown/Laytown and Swords/Dublin Airport every 15 minutes
- Doubling in frequency of existing bus services in the corridor (101, 101X, 910 and D2)



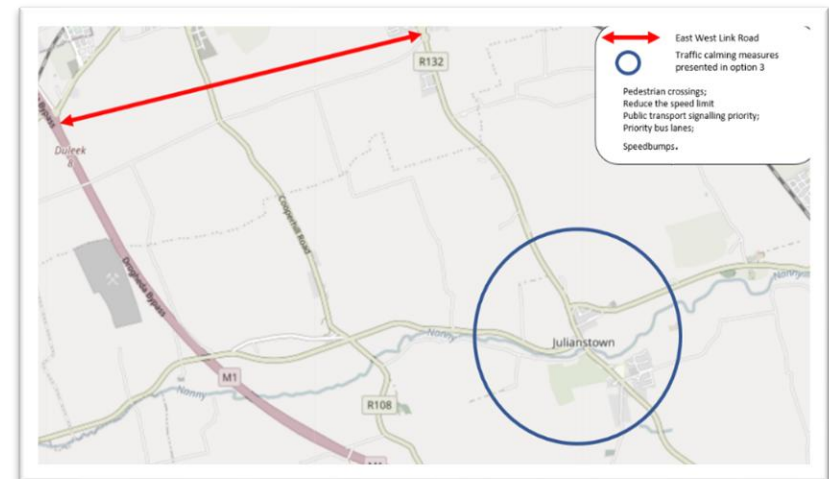
NIFTI Modal Hierarchy		NIFTI Hierarchy		Comment
Active Travel	✗	Maintain	✗	Option 2 scores high on the NIFTI Modal Hierarchy. It supports significantly improved provision of public transport. In terms of intervention, the focus would be on delivering rail interventions that have been identified through previous studies, and as such is in line with transport policy and strategy. Option 2 mainly comprises new infrastructure or services, though some improvements are also incorporated. Option 2 would incur relatively high costs both in terms of capital investment and ongoing public transport subsidy.
Public Transport	✓	Optimise	✗	
Private Vehicles	✗	Improve	✓	
		New	✓	

OPTION 3 EAST WEST LINK ROAD AND TRAFFIC MANAGEMENT MEASURES ON R132 THROUGH JULIANSTOWN

Option 3 would comprise a new east west road link to the south of Drogheda connecting Junction 8 on the M1 with the R132 at the roundabout with Colpe Road and traffic management measures on the R132 through Julianstown. This new link would take the form of a single carriageway in each direction and pedestrian and cycle facilities as appropriate. This link is incorporated into Meath County Development Plan's land use zoning objectives map, and it has the potential to provide wider benefits to meeting the future demands from the significant development lands in south Drogheda. The Development Plan does reference the need for a thorough examination, this should include a detailed cost benefit analysis given the likely investment costs. In addition, traffic management measures on the R132 through Julianstown will be introduced. These will include measures such as traffic signalisation and speed ramps, as well as improvements to infrastructure for active travel such as widened footpaths, pedestrian crossings and cycle lanes.

Previous traffic modelling to evaluate this scenario revealed traffic displacement from the existing junction to the new south Drogheda distributor road via the R152. There was little change in traffic through Julianstown, and the total vehicle kilometres travelled, and travel time were only slightly affected (drops of 0.05% and 0.31%, respectively). A minor positive impact on M1 tolls resulted in a 0.1 percent annual increase, however the modelling will need to be reviewed in later appraisal stages.

This option will include significant traffic management measures through Julianstown. It will ensure significant improvements to the public realm in Julianstown through the delivery of measures such as traffic signalisation and speed ramps, as well as improvements to infrastructure for active travel such as widened footpaths, pedestrian crossings and cycle lanes. The proposed traffic management measures through Julianstown will be designed to serve two key functions. Firstly, to prioritise the needs of active travel and public transport users, as well as enhancing the public realm in the village centre. Secondly, to further reduce traffic speeds through the Village - thereby ensuring that the alternative link road, whilst longer in length, remains the more attractive route for vehicular traffic.



NIFTI Modal Hierarchy		NIFTI Hierarchy		Comment
Active Travel	✓	Maintain	✗	In terms of NIFTI Modal Hierarchy, this option provides an alternative road access to the M1 for private vehicles. However, the option also comprises additional traffic management measures in Julianstown to create a more attractive environment for pedestrians, cyclists and public transport. Therefore, it is considered to have a positive impact for both active travel and public transport.
Public Transport	✓	Optimise	✓	
Private Vehicles	✓	Improve	✗	Option 3 aligns with the NIFTI priority for the movement of people and goods in urban areas through concentrating the new road and active travel infrastructure within Drogheda providing wider benefits for accessibility for the planned future population in this growth area. The provision of traffic management and active mode infrastructure within Julianstown Village supports the NIFTI priority for decarbonisation.
		New	✓	

OPTION 4 NEW LINK ROAD FROM THE M1 TO THE R132 NORTH OF JULIANSTOWN AND TRAFFIC MANAGEMENT MEASURES ON R132 THROUGH JULIANSTOWN

Option 4 would comprise of a new link road from the R150 Laytown junction (at the north end of Julianstown) to the M1 with a new interchange provided on the M1. This link could utilise existing sections of the R150 along with the bridge over the M1. To reduce costs, the M1 interchange could be developed as a southbound on-ramp and northbound off-ramp only. This would provide an alternative route for traffic travelling through Julianstown to and from the M1 at Junction 7

However, this new link would not be the most direct route southbound, particularly for traffic travelling to/from the Laytown/Bettystown area. The proposed junction with the M1 would be located north of the toll point, and as such traffic using this link to travel southbound would still be required to pay the toll. The benefit of providing the new proposed southbound on/northbound off M1 junction north of the existing toll point is that it would reduce the possibility of traffic displacement from the M1 to avoid existing tolls.

As with Option 3, this option will include significant traffic management measures through Julianstown. It will ensure significant improvements to the public realm in Julianstown through the delivery of measures such as traffic signalisation and speed ramps, as well as improvements to infrastructure for active travel such as widened footpaths, pedestrian crossings and cycle lanes. The proposed traffic management measures through Julianstown will be designed to serve two key functions. Firstly, to prioritise the needs of active travel and public transport users, as well as enhancing the public realm in the village centre. Secondly, to further reduce traffic speeds through the Village - thereby ensuring that the alternative link road, whilst longer in length, remains the more attractive route for vehicular traffic.

Traffic modelling will need to be undertaken to understand the potential for this option to reduce traffic volumes through Julianstown and achieve the overall objectives for the Traffic Relief Scheme. Bus based public transport would benefit from Option 4 due to decreases in journey times and improvements in reliability as they travel through Julianstown with additional priority and potentially lower traffic conditions.



NIFTI Modal Hierarchy		NIFTI Hierarchy		Comment
Active Travel	✓	Maintain	✗	In terms of NIFTI Modal Hierarchy, this option provides an alternative road access to the M1 for private vehicles. However, the option also comprises additional traffic management measures in Julianstown to create a more attractive environment for pedestrians, cyclists and public transport. Therefore, it is considered to have a positive impact for both active travel and public transport.
Public Transport	✓	Optimise	✓	
Private Vehicles	✓	Improve	✗	
		New	✓	Option 4 would incur significant investment costs, requiring both land acquisition and major new infrastructure. This cost could be reduced through optimising the existing R150 infrastructure as much as possible along with the delivery of a smaller M1 interchange (southbound on/northbound off)
				Option 4 requires further consideration in terms of its potential to achieve the overall study objectives given the fact that it's not the most direct route for traffic travelling southbound.

OPTION 5 NEW ROAD LINK ON THE WESTERN SIDE OF JULIANSTOWN AND TRAFFIC MANAGEMENT MEASURES ON R132 THROUGH JULIANSTOWN

Option 5 would comprise a new road link parallel to the R132 creating a bypass around the village to the west.

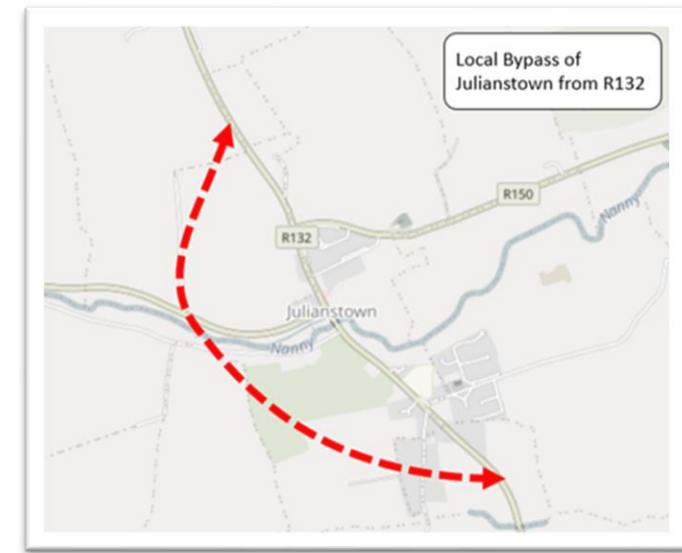
The capacity and design of the road and the connecting junctions with the R132 would be subject to further design.

Option 5 could be combined with Option 1 which would likely increase the potential benefits for the local population in Julianstown and encourage use of the new road link by through traffic.

Previous analysis indicated that this option could remove the majority of traffic from Julianstown Village with as much as an 80% reduction in traffic volumes.

As with Options 3 and 4, this option will include significant traffic management measures through Julianstown. It will ensure significant improvements to the public realm in Julianstown through the delivery of measures such as traffic signalisation and speed ramps, as well as improvements to infrastructure for active travel such as widened footpaths, pedestrian crossings and cycle lanes. The proposed traffic management measures through Julianstown will be designed to serve two key functions. Firstly, to prioritise the needs of active travel and public transport users, as well as enhancing the public realm in the village centre. Secondly, to further reduce traffic speeds through the Village - thereby ensuring that the alternative link road, whilst longer in length, remains the more attractive route for vehicular traffic.

Bus based public transport would benefit from Option 5 due to reduction in journey times and improvements in reliability as they travel through Julianstown in significantly lower traffic conditions.



NIFTI Modal Hierarchy		NIFTI Hierarchy		Comment
Active Travel	✓	Maintain	✗	In terms of NIFTI Modal Hierarchy, this option provides an alternative road access to the M1 for private vehicles. However, the options also comprises additional traffic management measures in Julianstown to create a more attractive environment for pedestrians, cyclists and public transport. Therefore, it is considered to have a positive impact for both active travel and public transport.
Public Transport	✓	Optimise	✗	
Private Vehicles	✓	Improve	✗	
		New	✓	Option 5 would incur relatively high costs due to the provision of new infrastructure including a new bridge crossing over the River Nanny. Combining Option 5 with Option 1 would improve the performance in terms of the NIFTI modal and hierarchy interventions. Option 5 would support the NIFTI priority for enhanced regional and rural connectivity and warrants further consideration.

Option 6 NEW ROAD LINK ON THE WESTERN SIDE OF JULIANSTOWN CONNECTING AT R150 EASTWARDS AND TRAFFIC MANAGEMENT MEASURES ON R132 THROUGH JULIANSTOWN

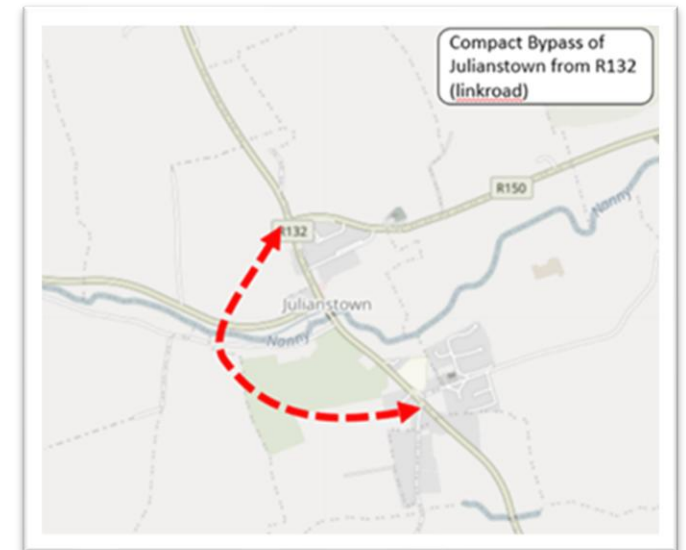
Option 6 is similar to Option 5 in that it would comprise of a new road link parallel to the R132 creating a bypass around the village to the west. Option 6 would connect directly with the R150 to the west, providing more direct access to the Laytown / Bettystown area.

The capacity and design of the road and the connecting junctions with the R132 would be subject to further design.

Like Options 3, 4 and 5, this option will include significant traffic management measures through Julianstown. It will ensure significant improvements to the public realm in Julianstown through the delivery of measures such as traffic signalisation and speed ramps, as well as improvements to infrastructure for active travel such as widened footpaths, pedestrian crossings and cycle lanes. The proposed traffic management measures through Julianstown will be designed to serve two key functions. Firstly, to prioritise the needs of active travel and public transport users, as well as enhancing the public realm in the village centre. Secondly, to further reduce traffic speeds through the Village - thereby ensuring that the alternative link road, whilst longer in length, remains the more attractive route for vehicular traffic.

Option 6 could be combined with Option 1 which would likely increase the potential benefits for the local population in Julianstown and encourage use of the new road link by through traffic.

Bus based public transport would benefit from Option 6 due to decreases in journey times and improvements in reliability as they travel through Julianstown in significantly lower traffic conditions.



NIFTI Modal Hierarchy		NIFTI Hierarchy		Comment
Active Travel	✓	Maintain	✗	In terms of NIFTI Modal Hierarchy, this option provides an alternative road access to the M1 for private vehicles. However, the options also comprises additional traffic management measures in Julianstown to create a more attractive environment for pedestrians, cyclists and public transport. Therefore, it is considered to have a positive impact for both active travel and public transport.
Public Transport	✓	Optimise	✗	Option 6 includes Phase 2 of the planned Julianstown Traffic Calming Scheme which would improve the attractiveness of active travel locally. The provision of an alternative vehicular route around Julianstown will also provide opportunities for further road space reallocation and traffic management within the village to create a safer environment for pedestrians and cyclists (e.g. traffic signals, footpath widening, HGV ban etc.).
Private Vehicles	✓	Improve	✗	
		New	✓	Option 6 would incur relatively high costs due to the provision of new infrastructure including a new bridge crossing over the River Nanny. Combining Option 6 with Option 1 would improve the performance in terms of the NIFTI modal and hierarchy interventions. Option 6 would support the NIFTI priority for enhanced regional and rural connectivity and warrants further consideration.

Option 7 Reduction in the Road Toll on the M1

Option 7 considers the impact of road tolling on route choice and the possibility that a proportion of the traffic through Julianstown is due to road toll avoidance. Previous analysis has indicated that, should the toll on the M1 be reduced or removed, the vast majority of traffic would continue to route via Julianstown. Nonetheless, it is worth considering the level of benefit that may result from changes in the toll structure.

The M1 toll is operated by Celtic Roads Group under a Public Private Partnership (PPP) toll concession. The contract was signed on the 9th February 2004 and extends for 30 years (i.e. the contract expires in ten years' time on February 2034).

If the reduction/removal of the M1 toll leads to lower traffic conditions in Julianstown, then this option would benefit Bus based public transport due to decreases in journey times and improvements in reliability. In addition, buses using the M1 would benefit from the reduction in toll charges.

Option 7 includes Phase 2 of the planned Traffic Calming Scheme which will create a more attractive environment for walking and cycling locally in Julianstown.



NIFTI Modal Hierarchy		NIFTI Intervention Hierarchy		Comment
Active Travel	✓	Maintain	✓	
Public Transport	✓	Optimise	✗	There is a risk that the delivery of Option 7 in and of itself would improve the relative attractiveness of travel by private car which would not support the NIFTI priority for decarbonisation.
Private Vehicles	✓	Improve	✗	Combining Option 7 with Option 1 would improve the performance in terms of the NIFTI modal and hierarchy interventions.
		New	✗	Option 7 warrants further consideration to understand the impact it can have on traffic volumes through Julianstown and achieving the overarching objectives for the Traffic Relief Scheme. It would not bring rise to any additional capital investment, but could have implications in terms of revenue foregone and the cost of contractual implications.

6 COST & AFFORDABILITY

6.1 Understanding of Costs

6.1.1 The expected costs of the options identified in the longlist vary widely. In addition, some options may be developed in combination. Further work is required to develop designs and the considerations of costs presented in this POD is only an outline indication.

6.2 Initial assessment

6.2.1 In order to gain a further understanding of the nature of the issues in Julianstown, an initial assessment was carried out, where a number of scenario's were compared, using a model developed for Julianstown.

- **Scenario 1:** Do-Minimum
- **Scenario 2:** No Toll, Scenario 1 plus removal of M1 Toll Plaza
- **Scenario 3:** Rail Enhancement, Scenario 2 plus improving rail services
- **Scenario 4:** Bus Enhancement, Scenario 2 plus improving bus services.

The full outcome of this assessment can be found in Appendix B.

6.2.2 The improvement of rail services refers to an increase in the number of services operating per hour to and from Laytown station. The summary of route and frequency are shown in table below:

Table 6. Existing and Proposed Rail Average Services per Hour during Peak Hours

Routes (AM/PM Peak Time)	Existing Average Services per hour	Proposed Average Services per hour
Drogheda - Hazelhatch & Celbridge	4	8
Dundalk - Hazelhatch & Celbridge	2	4
Irish Rail: Drogheda - Bray	3	5
Total Average Services per hour	6	12

6.2.3 The improvement in bus services refers to an increase in the number of services operating per hour through Julianstown. The summary of bus route and frequency are shown in table below:

Table 7. Existing and Proposed Bus Average Services per Hour during Peak Hours

Service	Routes (AM/PM Peak Time)	Existing Average Services per hour	Proposed Average Services per hour
101	Drogheda – Julianstown- Swords – Dublin	3	10
910	Bettystown–Laytown- Julianstown–Dublin	2	10
Total Average Services per Hour		5	20

6.2.4 The impact of removing the toll on the M1, either by itself or in conjunction with rail or bus network enhancements are negligible. Removing the toll on the M1 causes a reduction in traffic on the R132 of 75 southbound vehicles during the AM peak, and a reduction of 60 vehicles northbound during the PM peak. This represents reductions of 3 percent and 2 percent during the AM and PM peaks respectively. Adding rail enhancements to the removal of the toll does not cause a further reduction in traffic levels during either the AM peak (southbound) or PM peak (northbound). The bus enhancements cause a further reduction of 2% in the AM peak, and 1% in the PM peak. The results of the assessment can be found in Appendix B.

6.2.5 To put these figures into context, and as discussed in section 2.9, from a perspective of a) an acceptable Level of Service (LOD), b) equity with other villages, c) and a meaningful reduction in noise pollution, traffic would have to be reduced to maximum 8,000 AADT, which would be a reduction of 60% from an AADT of over 21,000 now.

6.3 Option 2 Strategic Public Transport Enhancements

- 6.3.1 Option 2 includes a range of public transport interventions for both rail and bus services in the study area. The rail interventions, in particular, are of a strategic nature and the rationale for investment arises from more than just the traffic issues of concern for the Julianstown Traffic Relief Scheme.
- 6.3.2 The feasibility working cost estimate DART+ Coastal North reported in the DART+ Preliminary Business Case is €442 million (in 2019 market prices and including risk and contingency). The All Island Rail Review estimated the cost of four-tracking between Dublin and Clongriffin to be of the order of €700 million to €1 billion. A new line between Clongriffin and Drogheda to provide additional capacity would incur similar costs (€600 million to €1 billion). These rail interventions would provide a considerable amount of wider benefits beyond the scope of the Julianstown Traffic Relief Scheme.
- 6.3.3 The cost of the strategic public transport enhancements are very high compared to the scale of the issues in Julianstown alone. As discussed in section 6.2, the improvements in public transport have little effect on traffic in Julianstown in isolation, and the proposed upgrades to the network should be viewed in the wider context of national transport strategy and policy. Whilst Option 2 would not represent value for money to meet the Julianstown Traffic Relief Scheme objectives in isolation, it is proposed that the impact of Option 2 should be tested to ascertain the impact on traffic in Julianstown. However, given the scale of investment it is not proposed that these interventions would be progressed as part of the Julianstown Traffic Relief Scheme. Option 2 will therefore be progressed as a sensitivity test.

6.4 Option 7 Reduction in the Road Toll on the M1

- 6.4.1 Unlike the other options, Option 7 would not bring rise to capital investment. Therefore, rather than costs it is more appropriate to look at

revenue foregone and the cost of contractual implications. Estimated toll revenue is in the region of €30m per annum (source: Opening Statement of the Joint Committee on Transport and Communications Networks 28 June 2023 to discuss Toll increases).

- 6.4.2 A proportion of the toll revenues above a specified traffic volume are paid to Transport Infrastructure Ireland. In 2021 no share was paid to TII with traffic volumes impacted by the COVID-19 travel restrictions. In 2022 TII received €2m in toll revenue under the terms of the PPP contract for the M1. The PPP toll concessionaires own the remainder of revenue collected on tolls.
- 6.4.3 The cost to the Exchequer of potentially buying out the M1 toll contract would be considerable, likely well in excess of €100m. The future cost of maintenance of the section of motorway covered by the PPP contract would also have to be shouldered by the Exchequer were tolls to be removed.
- 6.4.4 As discussed in section 6.2, removing the M1 toll has a negligible effect on traffic levels in Julianstown. Given the scale of investment, it is not proposed that this intervention will be progressed as part of the Julianstown Traffic Relief Scheme. However, it will be progressed as a sensitivity test

6.5 Understanding of Costs at POD Stage

- 6.5.1 The costings of the Julianstown Traffic Relief Scheme will depend on the option chosen. At this early stage it is assumed for the purposes of appraisal that, excluding Option 2 and 7, the cost including VAT could possibly be in the range of between [REDACTED], as shown in Table 6.

Table 8. Breakdown of costings

LIST OF POTENTIAL OPTIONS	FORECAST RANGE (€ MILLION)	COST
Do-Nothing	■	
Do-Minimum (Base Case)	■■■■■	
Option 1 - Traffic Management: Public Transport Priority Enhancement	■■■■■	
Option 2 - Strategic Public Transport Enhancement	■■■■■ ■■■■■	
Option 3 – East West Link Road and Traffic Management Measures on R132 through Julianstown	■■■■■	
Option 4 - Link Road from M1 to R132 North of Julianstown and Traffic Management Measures on R132 through Julianstown	■■■■■	
Option 5 - New Road Link on the Western Side of Julianstown and Traffic Management Measures on R132 through Julianstown	■■■■■	
Option 6 - New Road Link on the Western Side of Julianstown Connecting at R150 eastwards and Traffic Management Measures on R132 through Julianstown	■■■■■	
Option 7 - Reduction in the Road Toll on the M1	■■■■■	

* Option 2 is not considered value for money in relation to the scale of the objectives for the Julianstown Traffic Relief Scheme alone but may progress as outlined in current transport strategy as schemes with significantly wider benefits.

6.5.2 The order of magnitude of costs is in keeping with similar road projects that are in development, such as:

- Ardee Bypass: single carriageway 4.5km: €20 m to €50 m
- Mallow Relief Road: single carriageway 5.1km: €20 m to €50 m
- Athy Southern Distributor Road: single carriageway 3.4km: €20 to €50m

6.5.3 It should be noted that there is a very high degree of uncertainty at this early stage in the development of the project. Through further design work, cost estimates will be refined. The Preliminary Business Case (PBC) is a key step in determining a more precise set of costs.

6.6 Assessment of Affordability and Availability of Funding for the Project

6.6.1 In accordance with the provisions of Section 13 of the Roads Act 1993, each local authority has statutory responsibility for the improvement and maintenance of their regional and local roads. Works on those roads are funded from local authorities' own resources and are supplemented by State Road grants. Of these grants, the vast majority (approximately 90%) are targeted at the maintenance and renewal of the existing network with approximately 10% of the remaining funding invested in new roads/bridges or for road realignments. There is a limited budget available for projects under the Regional and Local Road Strategic Grant Programme.

6.6.2 Minister for Transport Eamon Ryan and Minister of State Jack Chambers announced a €658 million investment program for regional and local roads in February 2024. The funding package will allow for the maintenance of approximately 2,640 km of roads and the strengthening of a further 2,160 km. Julianstown was allocated €75,000 as part of the program's strategic regional and local roads category.

6.6.3 The project affordability and funding requirements will be driven by the timing of investment requirements. The phasing of the project will be considered in more detail in the preliminary business case. At this POD stage, it is expected that the scheme would benefit from progressing in the short term to align with the growth forecasts set out in the Meath County Development Plan.

7 APPRAISAL PLAN

7.1 Introduction

- 7.1.1 This section presents an overview of the process to filter potential options and arrive at a preferred option at the Preliminary Business Case (PBC) stage and a high-level consideration of the appraisal plan, including the economic and financial appraisal, sensitivity analysis and risk and contingency.

7.2 Appraisal of long list

- 7.2.1 In accordance with the DPENDR's Infrastructure Guidelines (IG) and the Department of Transport's Transport Appraisal Framework (TAF), the Preliminary Business Case (PBC) identifies a preferred option.
- 7.2.2 At PBC stage, either a Multi-Criteria Analysis (MCA), or a Cost-Benefit Analysis (CBA) and Transport and Accessibility Appraisal (TAA) will be required. As the estimated cost of (one or more of) the options is valued at €30m or greater, a TAA will be required on the shortlisted options, as well as a CBA on all shortlisted options or a subset of the shortlist informed by TAA results. The TAA scoping tab will be provided before proceeding to the PBC stage.
- 7.2.3 Within the preparation of the Preliminary Business Case, the prevailing values for parameters will be used in compliance with guidance. This includes parameter values contained within Module 8 of the Transport Appraisal Framework which are likely to have a significant bearing on the economic appraisal of the project, such as discount rates, shadow price of public funds, value of travel time and journey time reliability.

7.3 Appraisal of short list

Cost Preparation

- 7.3.1 For the PBC, the following cost estimates will be required:

- Target Cost (TC) – This is the realistic estimate of the Final Outturn for the project based on assumptions made, identified risks and defined scope of work inclusive of VAT and inflation; and
- Total Scheme Budget (TSB) – This is the formal cost estimate for the project incorporating the identified core cost elements, an appropriate contingency in respect of these elements, and an allowance for future inflation to the completion of the project. In addition, a programme level contingency, known as “Programme Risk”, will be included to cover the situation of exceptional items occurring on isolated projects.

Consideration of Appraisal Tools

- 7.3.2 To inform the multi-criteria assessment it would be beneficial to build on the analysis undertaken within previous studies. However, care will be taken to ensure the data used to inform the PBC are as up-to-date as possible. For example, data used will be from the post-COVID period.

Traffic Modelling

- 7.3.3 The extent of traffic modelling should be commensurate with the scale of the project and the need for quantified impacts to be assessed to inform the decision-making process. The NTA's Eastern Regional Model (ERM) has provided useful information for the purposes of the preparation of the POD. Depending on the further design and consideration of options, the ERM could be suitable to assess the likely impact of the project. The Appraisal Tools component of the ERM includes modules for TUBA and COBALT. Transport Infrastructure Ireland's economic appraisal tool for

active modes, TEAM, could further strengthen the appraisal to reflect active mode impacts.

- 7.3.4 As a minimum, junction modelling should be prepared using suitable tools such as LinSIG or ARCADY to assess the impact of options on the major junctions within the study area. A local area model in SATURN or similar should be considered and would provide for the use of TUBA (Transport User Benefits Appraisal) for the monetisation of impacts and COBALT to assess safety aspects. The economic parameters in TUBA would in this instance be taken from the CAF guidance as appropriate.

Financial Appraisal

- 7.3.5 A financial appraisal of the scheme will be reported within the Preliminary Business Case. This will detail an Exchequer cashflow analysis and present the net costs in clearly defined economic terms. The profile of spend will need to be presented and consideration given to appropriate use of discounting. The financial discount rate set by the National Development Finance Agency should be used unless otherwise instructed by the Department of Transport. This value is set quarterly and can vary over time.
- 7.3.6 Financial indicators such as the Net Present Value (NPV) and Internal Rate of Return (IRR) should be clearly identifiable.

Sensitivity Testing

- 7.3.7 Sensitivity testing will need to be undertaken as part of the PBC in line with the requirements of TAF. Scenarios with higher than estimated costs and lower than anticipated demand should be presented.
- 7.3.8 Whilst it is proposed that DART+ is not included in the Do-Minimum, this project is subject to planning and designs may evolve prior to implementation. A sensitivity test with DART+ would be appropriate.

- 7.3.9 While existing bus services primarily focus on connectivity to Dublin City Centre, there are currently no direct bus services between Bettystown/Laytown and Dublin Airport or Swords. Given that public transport journey times to these significant trip generators are extensive and require a transfer. A sensitivity test evaluating direct public transport connections to Dublin Airport and Swords would be appropriate.
- 7.3.10 Whilst Option 2 – the delivery of the interventions in the AISSR, as well as an extensive upgrade of the bus network – was not considered to be a realistic option for the scheme under review, it is appropriate to include it as a sensitivity test. This would allow for the evaluation of its potential impacts on traffic patterns and scheme effectiveness.
- 7.3.11 Whilst Option 7 – a reduction in the M1 toll – is not considered a realistic option for the scheme under review, it is appropriate to include it as a sensitivity test. This would allow for the evaluation of its potential impacts on traffic patterns and scheme effectiveness.

Risk and Contingency

- 7.3.12 The intended approach for the incorporation of risks and contingencies within the appraisal will be outlined in full as the project progresses. At this stage, it is expected that at a minimum a range of inflation and contingency scenarios will be explored.
- 7.3.13 Depending on the identified shortlist and cost of the project, the sensitivity analysis is expected to be based on tools and techniques such as Reference Class Forecasting (RCF), Quantified Risk Analysis and benchmarking against similar schemes nationally. The consideration of risk and contingency should be proportionate to the scale of investment.

8 PROJECT GOVERNANCE

8.1 Proposed Governance Arrangements

- 8.1.1 The Infrastructure Guidelines requires there to be a Sponsoring Agency and Approving Authority for the appraisal and delivery of public investment projects. The outline governance plan presented here will be built upon in the latter business case stages as more detailed consideration is given to implementation.

8.2 Approving Authority

- 8.2.1 The Approving Authority is normally the Government Minister, Department or Public Body, with responsibility of implementing PBC Government Policy and for providing funding for capital Programmes and Projects. The Approving Authority is responsible for granting the approvals required to proceed through the life cycle of publicly funded projects.
- 8.2.2 In the case of the Julianstown Traffic Relief Scheme, the Department of Transport (DoT) will fulfil the role of the Approving Authority taking responsibility for the day-to-day oversight functions, such as evaluating the business case & development proposals, issuing approvals, overseeing steering group, assessing changes and reviews.

8.3 Sponsoring Agency

- 8.3.1 The Sponsoring Agency is the Local Authority that requires the Project to be undertaken, in this case Meath County Council (MCC). It has overall responsibility for the proper appraisal, planning and management of the Project (including current expenditure) and for ensuring that the project proceeds along the lines approved by the Approving Authority.

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