



Transport Access to the North-East of Monaghan Town (TANEMT)

Strategic Assessment Report

June 2023





TRANSPORT ACCESS TO THE NORTH-EAST OF MONAGHAN TOWN (TANEMT)

STRATEGIC ASSESSMENT REPORT

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TABLE OF CONTENTS

Executive Summary	4
1. Project Context	7
2. Investment Rationale	13
3. Objective Setting	22
4. Policy Context	25
5. Lessons Learned	39
6. Initial Demand Analysis	42
7. Identification of Options	46
8. SAR Cost & Affordability Considerations	58
9. Appraisal Methodology	60
10. Project Governance	63
11. Project Risk and Risk Management	65
12. Framework for Determining Key Performance Indicators	66



Executive Summary

Project Context

Monaghan Town is the Principal County Town acting as the administrative, business and services hub. The population of Monaghan Town was recorded as 7,678 in the 2016 Census. In keeping with the Project Ireland 2040 strategic aim for Compact Growth, the Core Strategy in the Monaghan County Development Plan sets out to build strong urban centres and supports the growth of Monaghan Town's population to 9,415 by 2025.

The successful growth and development of Monaghan Town will be significantly impacted by the local economy and the opportunities to access attractive employment. Access to local employment will directly affect travel patterns and will be essential to avoid long distance commuting for the future population of Monaghan Town and to support the Project Ireland 2040 strategic outcome for Sustainable Mobility.

Recognising the need for local employment growth, the current Development Plan includes 87 hectares of zoned commercial development land at Knockaconny/Annahagh/Tullyhirm to the northeast of Monaghan Town. The lands have limited transport access at present and there is a need to intervene to address this issue. The accessibility of these lands defines the core context and study area for TANEMT. The lands include the Industrial Development Authority (IDA) serviced estate at Knockaconny and a number of existing commercial developments, notably the CombiLift global headquarters, demonstrating the attractiveness of the location for the location of industry and employment. The lands are partially owned by Monaghan Council (49%) with the remainder in the private ownership of five identified landowners.

The overall objective of TANEMT is:

To provide appropriate transport access to the 87 hectares of land zoned for commercial development at Knockaconny, Tullyhirm and Annahagh in Monaghan Town to promote Monaghan as the key industrial and employment centre in line with its County Town Status and the principles of compact development.

Investment Rationale

There has been some industrial development on the periphery of the study area lands where transportation access onto the national road network was previously provided. Existing access to the lands is provided primarily via two roundabouts: one on the N12 that also provides access to the Monaghan Education Campus located to the north and one on the N2 at Annahagh that provides access to the existing CombiLift facility. Penetration of the lands is very limited to service road requirements for existing developments.

The analysis undertaken in the preparation of this SAR shows a variety of needs for the project, primarily:

- **Sustainable Development:** there is a need to support the future sustainable development of Monaghan Town and the study area lands have the potential to support significant employment. The existing development and current planning applications, being located at the periphery of the development lands adjacent to existing road infrastructure indicate that the lack of transport accessibility is inhibiting the development of the full zoned lands.
- **Economic Need:** The Department of Business, Enterprise and Innovation's Regional Enterprise Plan for the North-East outlined objectives to support a higher level of economic success including fostering clustering amongst enterprises. The right infrastructure is required to attract more companies that require skilled and professional labour and increase economic activity. This is reflected in the Monaghan Local Economic and Community Development Plan 2016-2021.



- **Need to Increase Sustainable Mode Share:** The existing access for active modes and public transport is limited and TANEMT will provide an opportunity to address critical links, such as junctions and connectivity to the Ulster Canal Greenway, to encourage active travel and improve safety.
- **Traffic Management:** The development of the lands will have an impact on traffic in the surrounding area, including along the adjacent N2 and N12. TANEMT will provide for consideration of impacts of alternative access arrangements, junction improvements and potential mitigation measures if traffic issues are identified.

Objective Setting, Policy Context and Lessons Learnt

To help in the development of the project and subsequent appraisal, in addition to the overall objective stated above, a series of sub-objectives have been developed. These sub-objectives are categorised under five appraisal criteria that align with the Department of Transport's Common Appraisal Framework. The sub-objectives were developed through a Logic Path Model presented in the SAR to ensure alignment with identified issues and desired outcomes.

The policy context has been reviewed across International, National, Regional and Local policies and strategies. As is demonstrated within the SAR, there is significant consistency between the TANEMT objectives and current policy demonstrating that the project will support wider aims.

In the absence of an intervention, it is likely that development will continue with associated transport infrastructure being provided on an ad hoc basis as has been the case in the recent past. A case study has been prepared in the preparation of this SAR which identified commercial lands that were developed over time with associated piecemeal transport access. From the case study the key lessons learned for TANEMT are:

- an ad hoc delivery of transport access would likely occur in the absence of a public intervention
- incremental delivery of transport access infrastructure is likely to result in a poorly performing network
- issues of connectivity and integration with external existing and proposed transport infrastructure will potentially arise if no intervention is made
- retrofitting sustainable infrastructure will be challenging and costly

Initial Demand Analysis and Identification of Options

The County Development Plan was informed by the 2018 Monaghan Land Use and Transportation Study (MLUTS) which examined the transport and land use proposals for Monaghan Town up to 2035. The overall purpose of MLUTS was to identify transportation and land use proposals for the future sustainable growth of Monaghan in all contexts of transportation including road network, public transport, car parking, walking and cycling. Consideration was given to the future development of the lands at Knockaconny, Tullyhirm and Annahagh. MLUTS has significantly informed this SAR and reference is contained within to relevant data forming the bulk of the initial demand analysis.

Building on the access options considered within MLUTS, consideration has been given to current policy and the objectives developed for TANEMT within the SAR to expand the long list of options. Alongside the base case, seven core options are presented with an initial consideration of alignment against the National Investment Framework for Transport in Ireland (NIFTI) modal and intervention hierarchies.

SAR Cost and Affordability Considerations

The cost of providing TANEMT 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 €10 million to €20 million range based on providing comprehensive access through the study area with access to both the N2 and N12. There is a high degree of uncertainty in relation to cost at this early stage. The approach to appraisal



is to ensure an appropriate level of analysis proportional to the cost outlay. Whilst there is a possibility that the outturn costs will be below €10 million, it is considered prudent to undertake an appraisal aligned with projects valued in the higher band.

The improvement and maintenance of local roads is the statutory responsibility of each local authority in accordance with the provisions of Section 13 of the Roads Act 1993. Recognising the wider benefits of transport access to the economy, society and the environment it is common for local roads to be publicly funded from the Council's own resources if available supplemented by State road grants. Monaghan County Council has a small rates base relative to the larger local authorities, and as a result has very limited discretionary income. In the case of TANEMT, sufficient funding for the project is not available within Monaghan County Council. Nonetheless, there is a strong entrepreneurial culture and work ethic in Monaghan and the opportunity to build upon these positive characteristics to further the economic development of the county.

Next Steps

To assist in the next steps in the event that TANEMT is approved to progress to the Preliminary Business Case stage, the SAR provides an outline for a number of key components, comprising the appraisal methodology, project governance structure, project risk and mitigation and an initial framework for determining key performance indicators.

Conclusions

There are a number of issues that can be addressed through the progress of TANEMT, notably the need to support sustainable development in Monaghan Town. With the anticipated population growth envisaged in the coming years, it is timely to intervene so as to support commensurate growth in local employment for the benefit of the economy and to avoid the necessity for long distance commuting. The consequences of Brexit also provide an opportune time to meet the needs of business seeking an EU base.

There is existing development within the study area, highlighting the attractiveness of the location for commercial activity and indicating the viability of future development with opportunities to take advantage of business synergies through consolidation and clustering. In the absence of TANEMT there is a risk that the continued delivery of transport access on a piecemeal development by development basis will create issues that are difficult and costly to address at a later stage.

Progressing TANEMT will provide for well-planned transport access, facilitating the most appropriate management of traffic impacts and providing for integration with wider transport networks to derive greater benefits from other investment in the local and national road networks and the significant active mode infrastructure.

1. PROJECT CONTEXT

1.1 Introduction

- 1.1.1 Monaghan County Council (MCC) commissioned SYSTRA Ltd to prepare a Strategic Assessment Report for Transport Access to the North-east of Monaghan Town (TANEMT).
- 1.1.2 Monaghan Town is the Principal County Town acting as the administrative, business and services hub. The population of Monaghan Town was recorded as 7,678 in the 2016 Census representing 12.5% of the County's total population of 61,386. In keeping with the Project Ireland 2040 strategic aim for Compact Growth, the Core Strategy in the Monaghan County Development Plan sets out to build strong urban centres and to increase the proportion of the County's population living in urban settlements. As such, the Plan supports the growth of Monaghan Town's population to 9,415 by 2025 increasing the projected population to 14% of the total County population.
- 1.1.3 The successful growth and development of Monaghan Town will be dependent upon the growth of the local economy and the opportunities to access attractive employment. Access to local employment will directly affect travel patterns and will be essential to avoid long distance commuting for the future population of Monaghan Town and to support the Project Ireland 2040 strategic outcome for Sustainable Mobility.
- 1.1.4 Recognising the need for local employment growth, the current Development Plan includes 87 hectares of zoned commercial development land at Knockaconny/Annahagh/Tullyhirm to the northeast of Monaghan Town, as shown in Figure 1.1. This defines the study area for TANEMT. The lands include the Industrial Development Authority (IDA) serviced estate at Knockaconny and a number of existing commercial developments, notably the CombiLift global headquarters, demonstrating the attractiveness of the location for the location of industry and employment.

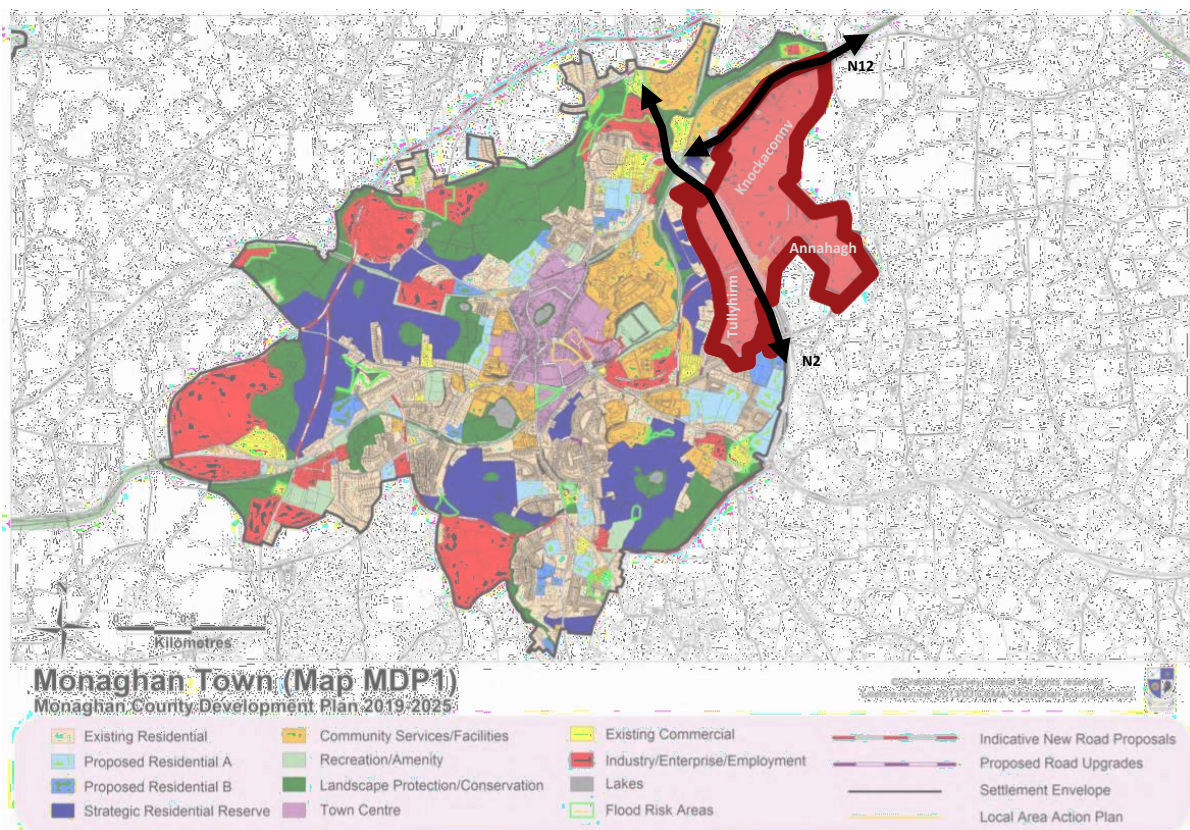


Figure 1.1 Study Area at Knockaconny, Annahagh and Tullyhirm (Base map: Monaghan County Development Plan 2019 - 2025)



- 1.1.5 The existing development in the area is located in close proximity to the existing road network, namely the N2 and N12 national roads which border the lands. The remainder of the zoned land is largely inaccessible resulting in a need to intervene to provide transport infrastructure to support the proper development of the lands and provide access to local employment opportunities which is the key issue to be addressed by TANEMT.

The overall objective of TANEMT is:

To provide appropriate transport access to the 87 hectares of land zoned for commercial development at Knockaconny, Tullyhirm and Annahagh in Monaghan Town to promote Monaghan as the key industrial and employment centre in line with its County Town Status and the principles of compact development.

- 1.1.6 TANEMT aligns with the National Investment Framework for Transport in Ireland (NIFTI) Investment Priority for mobility of people and goods in urban areas to facilitate compact and sustainable growth in Monaghan Town. The project will also allow for the consideration of the impact of development of the zoned lands on the surrounding national road network, thereby supporting the NIFTI Investment Priority for Enhanced Regional and Rural Connectivity.
- 1.1.7 To explore the need for the project in more detail and ensure that the options for transport access are properly assessed, Monaghan County Council commissioned the preparation of this Strategic Assessment Report (SAR). Subject to the Approving Authority being satisfied that the SAR meets the required standards and that there is a justification for developing TANEMT further, the next stage becomes the more substantive development of the Preliminary Business Case (PBC) and subsequent Final Business Case (FBC) stages.

1.2 Background

- 1.2.1 The Northern and Western Regional Spatial and Economic Strategy (NWRSES) 2020-2032 recognises the importance of transport infrastructure in:
- supporting the regional economy;
 - providing access to employment;
 - attracting investment and skilled labour; and
 - improving wellbeing by affecting the ease with which people can get around for leisure, education and work purposes.
- 1.2.2 The NWRSES acknowledges the strategic location of Monaghan Town and its connectivity to the Dublin to Letterkenny/Derry City corridor and proximity to the Dublin/Belfast eastern economic corridor. The NWRSES sets out key future priorities for Monaghan Town specifically referencing the industry, enterprise and employment lands in the North East of the town. The NWRSES states “These lands could be connected to the national road network and their development should be integrated with the population growth and are of strategic importance to the future employment of the town”.
- 1.2.3 The Monaghan County Development Plan 2019-2025 provides the overall strategy for the proper planning and sustainable development of County Monaghan over the timescale of the Plan. In keeping with the Regional Planning Guidelines, the Plan has regard to large-scale land and infrastructure needs which should be considered and provided for to allow for sufficient serviced zoned industrial and commercial lands. Within the County Development Plan, the 87 hectares of land at Knockaconny, Tullyhirm & Annahagh in North-East Monaghan Town are zoned for commercial use, industry, enterprise and employment.
- 1.2.4 The County Development Plan was informed by the 2018 Monaghan Land Use and Transportation Study (MLUTS) which examined the transport and land use proposals for Monaghan Town up to 2035. The overall purpose of MLUTS was to identify transportation and land use proposals for the future

sustainable growth of Monaghan in all contexts of transportation including road network, public transport, car parking, walking and cycling. Consideration was given to the future development of the lands at Knockaconny, Tullyhirm and Annahagh.

- 1.2.5 The Monaghan County Development Plan includes a new road proposal for the development of an “industrial link road from N12 Armagh Road at Knockaconny to N2 Dublin Road at Annagh Roundabout”. This proposal will be considered as part of the TANEMT project along with all potential interventions that could achieve the project objectives.

1.3 Existing Transport Network

- 1.3.1 The existing transport infrastructure and services relevant to the study area are described in this section.

Active Modes Network

- 1.3.2 There is a footpath and two way cycleway alongside the N12 between the Coolshannagh Roundabout and the entrance to the Monaghan Institute / IDA Business Park. The Ulster Canal Greenway can be accessed from the N12 near the Coolshannagh Roundabout providing active mode connectivity to Monaghan Town and beyond. As part of a separate project, a consultant team has been appointed to progress a Greenway Spur along the N2.
- 1.3.3 Figure 1.2 illustrates the County Cycle Network identified by Aecom on behalf of the National Transport Authority. This provides a strategic context to the future development of routes. In the vicinity of the study area the N12 is identified as an urban secondary route and the N2 as an Inter-Urban route. Notably, the Annahagh Roundabout could potentially be upgraded. On the basis of the indicative plans, there would be continuous, well connected cycle infrastructure from the boundary of the study area offering the potential for integration.

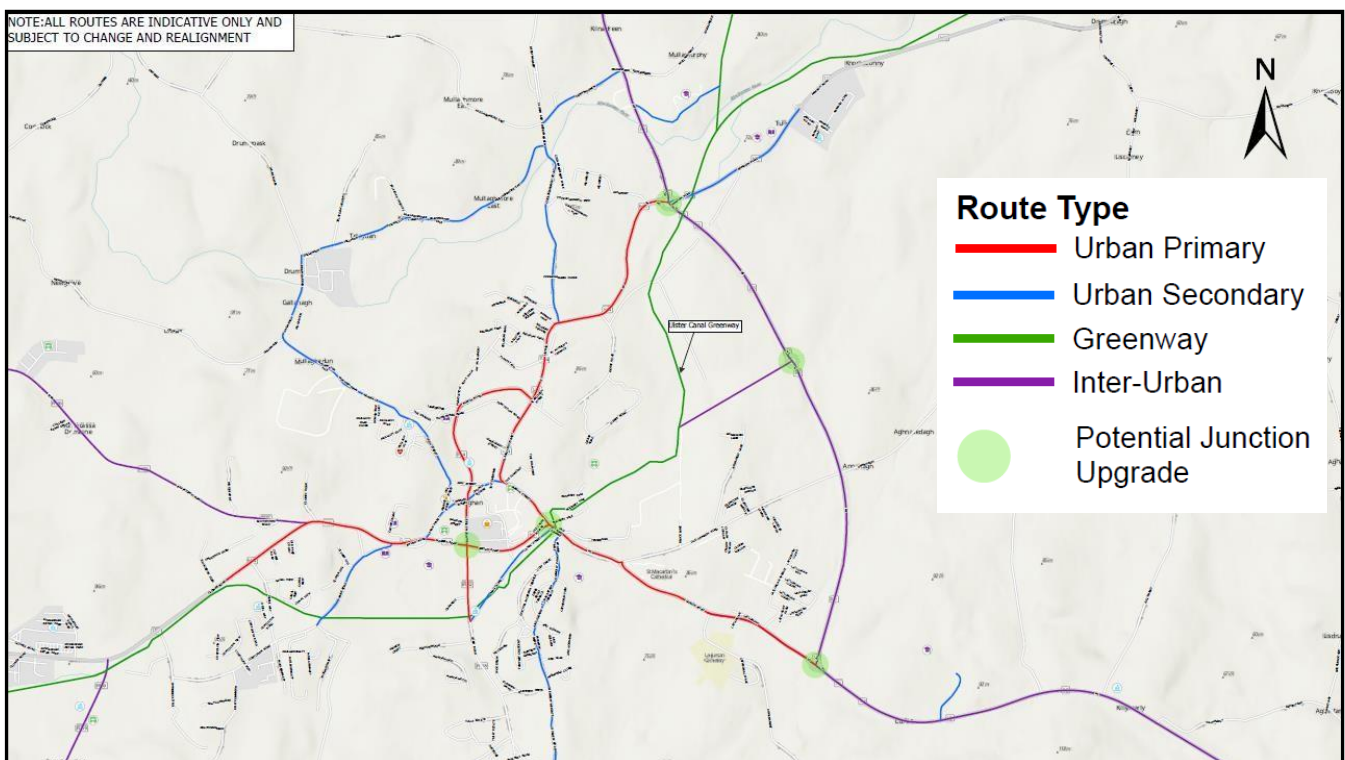


Figure 1.2 Potential to Provide Active Travel Infrastructure Improvements connecting into the Study Area (source: National Transport Authority / Aecom County Cycle Network)



Public Transport Network

1.3.4 Monaghan Town is not connected to the Irish Rail network. The closest rail infrastructure is the Dublin to Belfast Rail corridor 40km to the east of the study area. The public transport network in Monaghan Town is wholly bus based and comprises a combination of service types including Local Link services and commercially operated bus services. Relevant to the study area there are existing bus stops located at the Monaghan Institute and CombiLift and on the far side of the Coolshannagh Roundabout on the N2 and R135. The location of these stops is shown in Figure 1.3 along with the list of services which are described in the table below.

ROUTE NO.	OPERATOR	ORIGIN	DESTINATION	FREQUENCY
M1	Local Link Cavan Monaghan	Knockatallon / Tedavnet	Monaghan Institute	6 return services daily Monday to Friday
			CombiLift	2 return services daily Monday to Friday
M2	Local Link Cavan Monaghan	Castleblayney / Ballybay	Monaghan Institute	5 return services daily Monday to Friday
			CombiLift	1 return service daily Monday to Friday
176	Local Link Cavan Monaghan	Cavan	St Macartans School, Monaghan	1 service to school in the AM and 3 services from school in the afternoon Monday to Friday
			Monaghan Institute	1 return service Monday to Friday
932	McGinley Coach Travel	Letterkenny	Dublin	Monday: 3 return services; Tuesday to Thursday: 2 return services; Friday: 5 return services; Saturday: 2 return services; Sunday: 3 return services
NI01	Eamon McEntee	Carrickmacross	Monaghan Institute	1 return service Monday to Friday
32	Bus Éireann	Letterkenny	Dublin	9 return services daily
65	Bus Éireann	Galway	Monaghan	2 return services daily Monday to Friday, and 1 return service Saturday, 1 return service Sunday
162	Bus Éireann	Monaghan	Dundalk	1 return service daily Monday to Friday
175	Bus Éireann	Monaghan	Cavan	6 return services daily Monday to Friday, and 4 return services Saturday
175A	Bus Éireann	Cavan	Monaghan	1 return service daily in the AM Monday to Friday, 1 return service in the AM Saturday, and 1 1 return service in the AM Sunday
182	Bus Éireann	Drogheda	Monaghan	7 return services daily Monday to Friday, 4 return services Saturday, and 4 return services Sunday

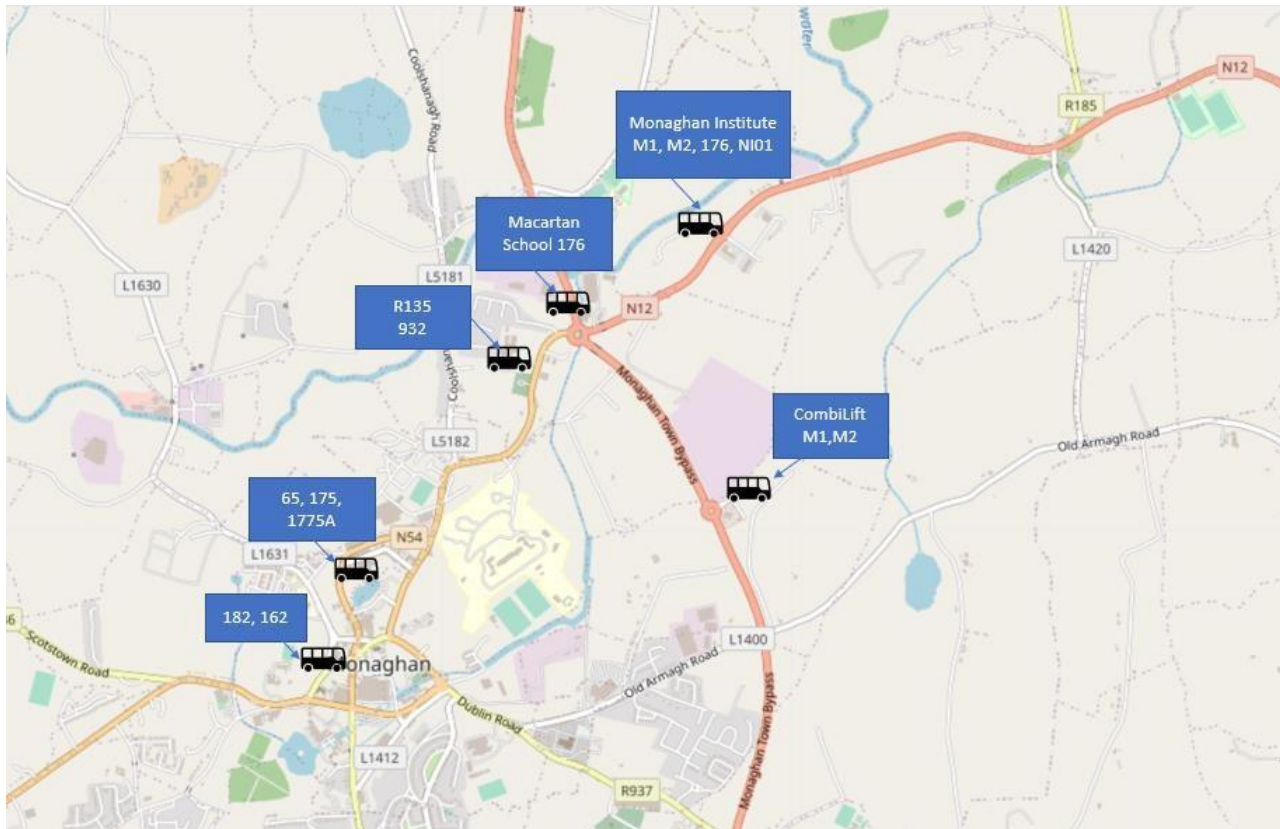


Figure 1.3 Existing Bus Services in the Study Area and nearby

1.3.5 Whilst limited in terms of frequency, there is a reasonable level of public transport service in the vicinity of the study area with timetables generally suited to traditional working hours. There are no bus stops south of the N12 or east of the N2 within the study area, illustrating the lack of existing permeability of the lands and reflecting current land uses.

Roads Network

1.3.6 Monaghan Town is strategically located at the intersection of three national routes:

- N2 Dublin to Derry National Primary Road;
- N12 Monaghan to Armagh/Craigavon/Belfast National Primary Road; and
- N54 Monaghan to Cavan National Secondary Road.

1.3.7 The TANEMT study area is bounded by the N12 and N2 as shown in Figure 1.1. The existing Annahagh Roundabout on the N2 provides access to CombiLift and Monaghan Fire Station. The existing developments within the IDA Monaghan Business & Technology Park have access via a roundabout on the N12 which also caters for access to the Monaghan institute Education Campus. Other than service roads to access existing development, there is no substantial existing road infrastructure within the study area to the south of the N12 and east of the N2.

1.3.8 Further information on the existing traffic conditions is presented in Section 6: Initial Demand Analysis.



1.4 General Economic Conditions

- 1.4.1 In the 2016 Census, the population of Monaghan Town aged 15 and over was 6,053 of which 10.6% were unemployed, 14.2% retired and 54.2% (3,278) at work. The unemployment rate recorded in the Census for County Monaghan fell from 20.6% in 2011 to 13.0% in 2016. County Monaghan had a higher change in unemployment than the national average which fell from 19.0% to 12.9% over the same period.
- 1.4.2 Of the 5,054 people over the age of 15 living in Monaghan Town who have completed their education, 45% have completed a level of education post-secondary school, including 1,008 people who had attained a degree, national diploma or post graduate degree. In addition the Census recorded 1,000 people living in Monaghan Town over the age of 15 whose education had not ceased.
- 1.4.3 Graduate employment within County Monaghan is low, reflecting the limited opportunities within the county for professional employment. From the Higher Education Authority's survey of graduates of the classes of 2017¹ and 2018² 1% of Level 6 & 7 and Honours degree graduates were working in County Monaghan whilst 0% of postgraduates were working in the county. Many graduates from Monaghan go on to employment outside the county. A socio economic analysis prepared by Monaghan County Council in 2015³ showed that, compared to other counties in Ireland, with between 18% and 30%, Monaghan had one of the lowest rates of employment in comparison to the number of graduates over the period 2004-2008.
- 1.4.4 Project Ireland 2040 envisages an additional 180,000 people living across the Northern and Western Region, requiring an additional 115,000 jobs to be created⁴ by 2040. As mentioned earlier, as a Key Town, it is expected that Monaghan Town will provide for a higher than average level of population growth. There will need to be a commensurate growth in employment to support the objectives of sustainable development.
- 1.4.5 Monaghan has a long tradition in the development of indigenous industry and as an incubator hub for innovation in business and agriculture nationally. One area of potential employment growth identified within the NWRES is the agri-food sector. The Agri-Food sector accounts for 60% of County Monaghan's employment and 90% of the food produced within the county is exported (NWRES). Whilst Monaghan's agri-food industry is already established, the NWRES references the need to develop higher-end value-added products in response to Brexit. However, the NWRA Region lacks biotechnology infrastructure to support start ups. One initiative to address this is the not for profit Biotech Innovation Centre, established by project partners Monaghan County Council, Monaghan Bioscience and Monaghan Institute to be located within the study lands at Knockaconny.
- 1.4.6 Brexit and changes in working patterns accelerated by the COVID pandemic are increasing the demand for accessible development lands in Monaghan. In the case of Brexit, companies in Northern Ireland are seeking locations south of the border to maintain a European presence. From stakeholder meetings held during the preparation of this SAR with the IDA and Enterprising Monaghan it is understood that Monaghan is particularly attractive as a location for Northern Irish companies seeking to establish an EU base given the proximity to their existing workforce. It was also mentioned during stakeholder meetings that due to greater levels of remote working, companies and employees are looking to establish remote working hubs closer to Monaghan Town, reducing the need for long distance commuting.

¹ <https://hea.ie/assets/uploads/2019/02/HEA-Graduate-Outcomes-Survey.pdf>

² <https://hea.ie/assets/uploads/2020/06/HEA-Graduate-Outcomes-Survey-Class-of-2018.pdf>

³ <https://monaghan.ie/communitydevelopment/wp-content/uploads/sites/8/2016/12/MonaghanSocioEconomicDraftforConsulationApril2015.pdf>

⁴ Details of Project Ireland as reported within the Northern and Western Regional Assembly Regional Spatial and Economic Strategy 2020-2032

1.4.7 The feedback from the stakeholders consulted was that, in general, the economic conditions are good with high demand for serviced commercial development lands. With the appropriate infrastructure in place, it is expected that the study lands will strengthen Monaghan Town and attract private sector investment in jobs and the economy.

1.5 Business Case Workflow and this SAR

1.5.1 This SAR is the first stage of the Project Lifecycle (Decision Gate 0) as set out in the Department of Public Expenditure and Reform's Public Spending Code (PSC). The SAR forms an important element of the bridge between the policy and the project delivery, examining the rationale for potential policy interventions and to ensure the strategic fit with government policy, particularly Project Ireland 2040: the National Planning Framework 2040 (NPF) and the National Development Plan 2021-2030 (NDP).

2. INVESTMENT RATIONALE

2.1 Description of the Area

2.1.1 The location of the subject lands for which access is required comprises Knockaconny, Annahagh and Tullyhirm (see Figure 2.1). Knockaconny and Annahagh comprise 67 hectares to the east of the N2. The lands are bounded by the N12 to the north. An additional 20 hectares is located within Tullyhirm to the west of the N2.

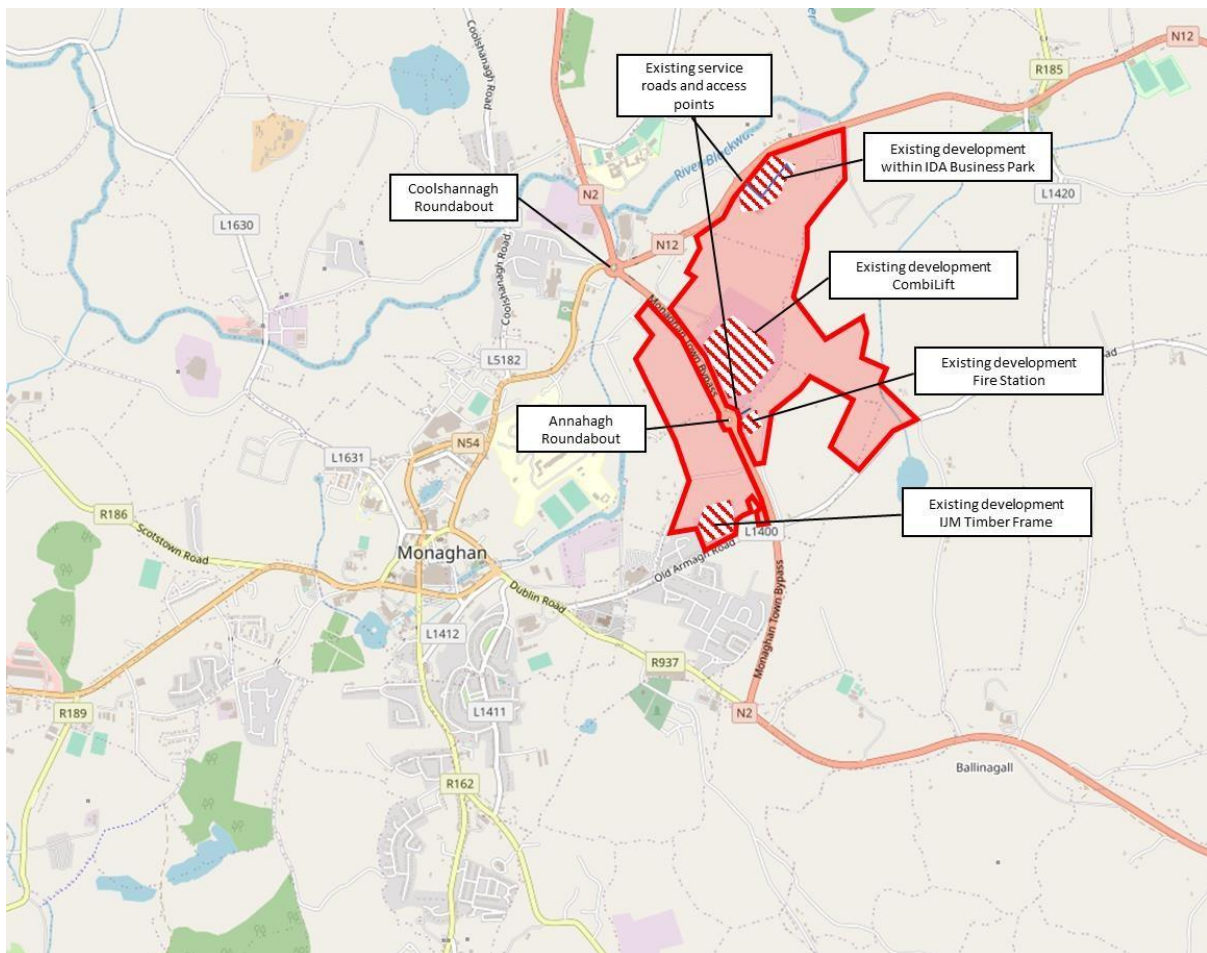


Figure 2.1 Location of Subject Lands at Knockaconny, Annahagh and Tullyhirm (Base map: OpenStreetMap)



2.1.2 There has been some industrial development on the periphery of the development lands where transportation access onto the national road network was previously provided. Existing access to the lands is provided primarily via two roundabouts: one on the N12 that also provides access to the Monaghan Education Campus located to the north and one on the N2 at Annahagh that provides access to the existing Combilift facility. Penetration of the lands is very limited to service road requirements for existing developments.

2.1.3 As shown in Table 2.1 and illustrated in figure 2.2, recent planning applications have been clustered near the two existing primary access points:

- Within and adjacent to the IDA Monaghan Business & Technology Park, Knockaconny with access onto the N12
- East and west of the Annahagh Roundabout on the N2

Table 2.1 Summary Description of Recent Planning Applications within Subject Lands

FIGURE REFERENCE NO.	PLANNING APPLICATION NO.	YEAR OF APPLICATION	SUMMARY DESCRIPTION	STATUS/DECISION
1	15168	2015	Applicant: Combilift Location: N2, Annahagh Roundabout 41,450m ² production facility 4,650 m ² three storey office block	Granted; with conditions
2	17611	2017	Applicant: Monaghan County Enterprise Fund Ltd Location: IDA Monaghan Business & Technology Park 1,950 m ² two storey office building	Granted; with conditions
3	18286	2018	Applicant: Monaghan County Enterprise Fund Ltd Location: IDA Monaghan Business & Technology Park 3,600m ² advanced technology building	Granted; with conditions
4	20308	2020	Applicant: BioConnect Innovation Centre 1,639 m ² research and innovation centre comprising two storeys of laboratory, office and meeting accommodation	Granted; with conditions
5	20159	2020	Applicant: Enterprising Monaghan Location: N12, Knockaconny 1900 m ² Three storey office/workspace	Granted; with conditions
6	16191	2016	Applicant: Irish Water Location: N12, Knockaconny Permission for the construction of waste water pumping station, site compound secured with paladin fence, connection to public services and all associated site works	Granted; with conditions
7	2168	2021	Applicant: Danbywiske Unlimited Company Location: Knockaconny, Monaghan, Co. Monaghan permission for a development consisting of the construction of a single storey ESB substation and switch room building together with all ancillary and associated site works	Granted; with conditions
8	15292	2015	Applicant: Pdraig Watters Location: Annahagh (Ed: Monaghan Rural), Monaghan, Co. Monaghan up filling of existing land, with soils excavated from the proposed Combilift Development (Planning Ref: 15/168), together with all other associated ancillary site works	Granted; with conditions
9	19315	2019	Applicant: Industrial Development Agency Ireland (IDA) Location: Monaghan Business & Technology Park, Knockaconny, Co. Monaghan	Granted; with conditions

FIGURE REFERENCE NO.	PLANNING APPLICATION NO.	YEAR OF APPLICATION	SUMMARY DESCRIPTION	STATUS/DECISION
			permission for development consisting of a new advanced technology unit comprising two storeys of office accommodation and a production space, together with associated car parking, yard, landscaping, ancillary signage and site development works.	
10	1869	2018	Applicant: Monaghan County Enterprise Fund Limited Location: Annahagh, Monaghan outline permission for development of proposed new advanced technology building together with access from proposed service road, connection to existing public services, car parking, signage and all associated ancillary works.	Granted; with conditions

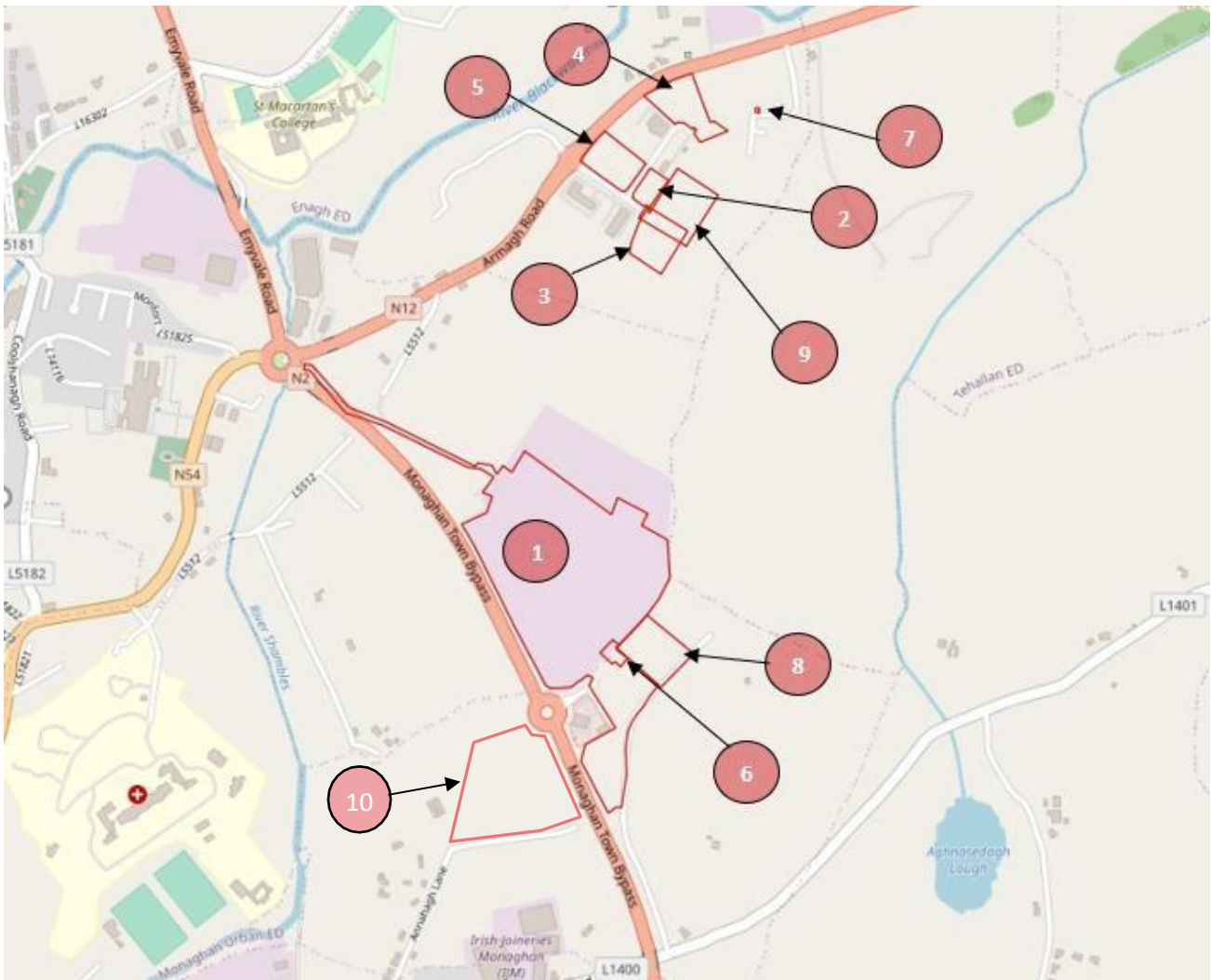


Figure 2.2 Location of Planning Application Lands at Knockaconny, Annahagh and Tullyhirm (Base map: OpenStreetMap)

2.2 Need for Intervention

- 2.2.1 The importance of integration between land use development and transport is well established within relevant strategies, policies and plans as demonstrated by the review presented in Section 4. Monaghan Town, with a population of 7,678 (Census 2016) and 3,715 jobs (National Planning Framework) is the largest town in the County and the only Tier 1 Principal Town. Within the Development Plan, the targeted population in Monaghan Town is 9,415 by 2025 which supports the NWRSES population growth in Tier 1 towns.
- 2.2.2 The strengthening of Monaghan Town as a centre of population and employment is important in a regional and cross border context in terms of attracting investment and supporting the economy. A number of key industries are already located within the town, including CombiLift which employs 650 staff at its global headquarters located in Annahagh within the study area.
- 2.2.3 The strategic location of the subject lands, at the intersection of the N2 Dublin – Derry/Letterkenny route and the N12 link to Armagh and Belfast provides an excellent opportunity to capitalise on Monaghan’s relationship with the Dublin-Belfast economic corridor which is a key driver for this regional area. Post Brexit, Monaghan is an attractive location for Northern Irish businesses seeking to set up a base within the EU.
- 2.2.4 As stated within the National Planning Framework:
“addressing economic resilience and connectivity will be strategic priorities for this area. The maintenance of seamless cross-border movement for people, goods and services, together with improvements in digital and physical infrastructure will create new opportunities to leverage employment and for sustainable population growth, focused on the county towns”.
- 2.2.5 The MLUTS concluded that opening up access to the study area through the provision of new transport infrastructure would allow Monaghan to achieve the full benefits of these development lands. MLUTS identified that the lands at Knockaconny/Annahagh/Tullyhirm offered the best scope in terms of consolidation and expansion of existing large scale economic development to serve the demands of this regional town. MLUTS set out the potential development of the 87 hectares of land in three phases as follows:
- Phase 1 – 46ha on the eastern side of the N2 with the full development of this area predicted to result in approximately 1,400 jobs;
 - Phase 2 – 21ha on the western side of the N2 bypass with the full development of this area predicted to result in approximately 600 jobs; and
 - Phase 3 – 20ha on the eastern side of the N2 bypass with the full development of this area predicted to result in 600 jobs.

2.3 Market Failures Driving the Need for Monaghan County Council Intervention

- 2.3.1 There is a need for public funds in part or in full to deliver a co-ordinated access strategy for the development of the subject lands as shown by the following outline reasons:
- the extent of transport infrastructure required is likely to make it uneconomical for many new developments to self-fund;
 - piecemeal development of sections of transport infrastructure on a site by site basis will be difficult to plan and would likely sterilise portions of the land until neighbouring sites are developed;
 - individual developers likely to seek to provide minimum level of infrastructure, e.g. close proximity to the national road network;



- integration with the existing transport network will require interventions which would require the participation of a duly authorised organisation such as Monaghan County Council;
- delivering the transport infrastructure within a specific project with the support of public funding will allow for consideration for the overarching objective, wider impacts in the surrounding area and taking full account of local, regional and national policy and strategies, for example the Project Ireland 2040 National Strategic Outcome 4 Sustainable Mobility or Section 2.7 of the Department of Environment, Community and Local Government Spatial Planning and National Roads: Guidelines for Local Authorities: Development at National Road Interchanges or Junctions;
- a co-ordinated access strategy would avoid applications for multiple new access points on to the national road network and will help to achieve better integration of land use and transport planning, consistent with existing plans (MLUTS, County Development Plan); and
- the provision of a fully functional active travel network is very unlikely if provided on an ad hoc basis without intervention.

2.3.2 The improvement and maintenance of local roads is the statutory responsibility of each local authority in accordance with the provisions of Section 13 of the Roads Act 1993. Recognising the wider benefits of transport access to the economy, society and the environment it is common for local roads to be publicly funded from the Council's own resources if available supplemented by State road grants.

2.4 Current Issues to be Addressed

Sustainable Development

2.4.1 As referenced above, there is a need to support the future sustainable development of Monaghan Town and the study area lands have the potential to support significant employment. The existing development and current planning applications, being located at the periphery of the development lands adjacent to existing road infrastructure indicate that the lack of transport accessibility is inhibiting the development of the full zoned lands. Should development not continue within the study area as envisaged in the County Development Plan and NWRES, there is a risk that employment growth within Monaghan Town will not keep pace with population growth resulting in lower levels of accessibility to jobs and impacts on unemployment and/or longer distance commuting to work outside the town.

Economic Need

2.4.2 A significant proportion of Monaghan Town’s population leave the town to commute to work as shown in the Census 2016 data (see Table 2.2). Of the 2,620 people living in Monaghan Town who have a fixed place of work, 56% commute to work outside the town. There is also a significant inward movement of people, 2,553, commuting to work in Monaghan Town from outside the town.

Table 2.2 Census 2016 Working Population Data

CENSUS 2016 DATA – MONAGHAN TOWN		PERSONS
Total Monaghan residents with a fixed place of work		2,620
Persons commuting into Monaghan to work		2,553
Daytime working population in Monaghan		3,715
Persons living and working in Monaghan Town		1,162
Persons commuting from Monaghan Town to work elsewhere		1,458



- 2.4.3 CSO figures from 2018 show that County Monaghan has the fourth lowest level of income per person at 76% of the national average (€30,753). Total income per person in Monaghan at €23,276 is more than one-third less than the average income in Dublin of €37,530.
- 2.4.4 As shown in Section 1.4, the opportunity for graduate employment is limited in Monaghan resulting in the migration of Monaghan’s most highly educated population. Prioritising higher skilled job creation in Monaghan Town is essential to stem the flow of young educated people out of the County.
- 2.4.5 The Department of Business, Enterprise and Innovation’s Regional Enterprise Plan for the North-East outlined objectives to support a higher level of economic success including fostering clustering amongst enterprises. The right infrastructure is required to attract more companies that require skilled and professional labour and increase economic activity. This is reflected in the Monaghan Local Economic and Community Development Plan 2016-2021.
- 2.4.6 Existing growing industries and new industrial/enterprise entrants require a ready supply of zoned land suitable for Industry, Enterprise and Employment use. Monaghan Town has topographical challenges that reduce the extent of choice lands suitable for economic development locations. There are limited locations that could be suitable for large scale proposals such as the CombiLift facility at Tullyhirm. The study area offers the best scope in terms of consolidation and development to serve the needs of Monaghan Town, the wider County and region.

Existing Traffic Conditions and Need to Support the Efficient Operation of the National Roads

- 2.4.7 Traffic data from the Monaghan Land Use and Transportation Study was reviewed to inform the preparation of this SAR. The data was derived from traffic counts undertaken in 2015 and TII traffic counters in the vicinity of Monaghan Town. Whilst traffic levels have generally been impacted by the COVID-19 pandemic measures, with significantly lower traffic levels recorded for much of 2020, data for 2021 from the TII traffic counter on the N12 indicates that traffic was at 90% of 2018 levels.
- 2.4.8 The AADT (Average Annual Daily Traffic) data from MLUTS for roads in the vicinity of the study area and from a nearby Transport Infrastructure Ireland (TII) traffic counter is shown in Table 2.3.

Table 2.3 AADT

LOCATION OF TRAFFIC COUNTER	AADT 2015	AADT 2018	AADT 2019
N12 at Knockaconny (Source: MLUTS)	5,205	8,659	
N54 at Four Seasons Hotel (Source: MLUTS)	11,731		
N12 Armagh Road (TII traffic counter between N2 and R213, outside study area)	4,038		4,168

- 2.4.9 MLUTS examined the potential impact of development within the study area and the possible effect of proposed developments on the operation of the N2 and the N12. Traffic modelling undertaken as part of MLUTS identified the following:
 - Based on the Highway Capacity manual table B4 for Arterials, the N2 is currently operating with Level of Service (LOS) B in both directions. In future years the N2 southbound is forecast to operate with a LOS C and the N2 northbound with a LOS of B. A LOS of C represents stable operations with lower speeds than LOS of B, however conditions are still reasonable.
 - The Annahagh Roundabout has ample capacity to provide for the proposed development.
 - Under future year conditions (both 2025 and 2035) there is a risk of long queues forming at the Coolshannagh Roundabout on the N2 southbound approach from the north in the morning peak period. Options tested within MLUTS indicated that signalisation of this roundabout would

improve performance and provide for pedestrian/cycling facilities significantly improve safety and accessibility for vulnerable users.

- A link road through the study area between the N2 and N12 will redirect additional traffic generated by new industrial development away from the Coolshannagh Roundabout which has limited future capacity. There will also be less traffic on the N12 at Monaghan Institute.

2.4.10 TANEMT will provide for further consideration of impacts of alternative access arrangements, junction improvements and potential mitigation measures. The existing access for active modes and public transport is limited and TANEMT will provide an opportunity to address critical links, such as junctions and connectivity to the Ulster Canal Greenway, to encourage active travel and improve safety.

Need to Increase Sustainable Mode Share

2.4.11 The Northern and Western Region is highly dependent upon the private car for travel to work and education with approximately 70% of the population commuting by private car (Census 2016). This reflects the low level of alternative suitable transport modes available. Monaghan is not served by rail and regular public transport services are largely limited to long distance coach routes and rural transport services. The dispersed population and relatively low level of urbanisation also leads to longer distances travelled by car and inhibits levels of walking and cycling.

2.4.12 Examining the Census data further, the mode share for driving to work is lower in Monaghan Town (64%) than compared to the national average (70%) and Monaghan County as a whole (81%). Travel times to work reported in the Census shows that half of all trips to work from Monaghan Town are under 15 minutes, increasing to 83% under 30 minutes. This demonstrates how Monaghan can support sustainable transport, shorter trip distances by car and potential for walking and cycling.

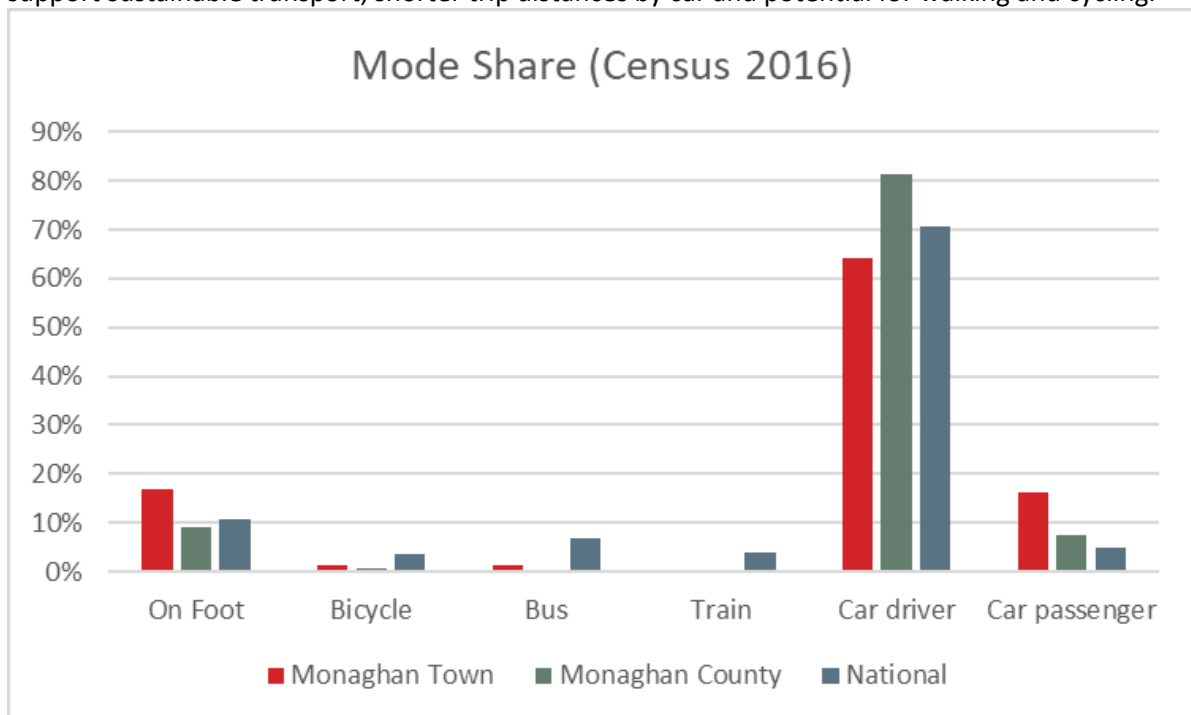


Figure 2.2 Mode Share to Work

2.4.13 Whilst the current profile shows limited long distance commuting, there is a risk of increasing journey lengths in future. Between the 2011 and 2016 Census, all counties in the North and West Region reported an increase in the level of commuting more than an hour, with Counties Monaghan and Cavan showing the largest increase.

- 2.4.14 The data on existing travel patterns, comprising lower levels of vehicle kilometres travelled and short distance trips that are suitable to active travel, demonstrates that Monaghan Town has the potential to support sustainable commuting patterns as the population grows, subject to the provision of local employment opportunities and the strengthening of the town as a centre of employment in the region.
- 2.4.15 Monaghan County Council are actively progressing projects and interventions to increase the levels of active travel in line with Government Policy including the Climate Action Plan 2021. Notably in relation to the study area, the Council is currently examining options for the provision of active mode infrastructure along the N2 and linkages to the Ulster Canal Greenway and Monaghan Town.

Existing Noise and Air Quality Issues

- 2.4.16 Road traffic is a major contributor to noise and air quality issues in Irish towns including Monaghan. Transport Infrastructure Ireland (TII) noise mapping (2017) illustrates the impact of the busiest road sections (three million plus vehicle trips per annum) with the data for Monaghan Town shown in Figure 2.4. The World Health Organization (WHO) defines noise above 65 decibels (dB) as noise pollution. Noise becomes harmful when it exceeds 75 decibels (dB) and is painful above 120 dB. In Monaghan Town, noise pollution above 70 dB is noted on the N54, R162 and R937.
- 2.4.17 Reducing traffic speeds and traffic volumes will reduce traffic noise pollution. As Monaghan Town already has a general speed limit of 50km/h and in reality speeds are often lower due to traffic congestion, managing traffic volumes in the town will be important to addressing noise issues.

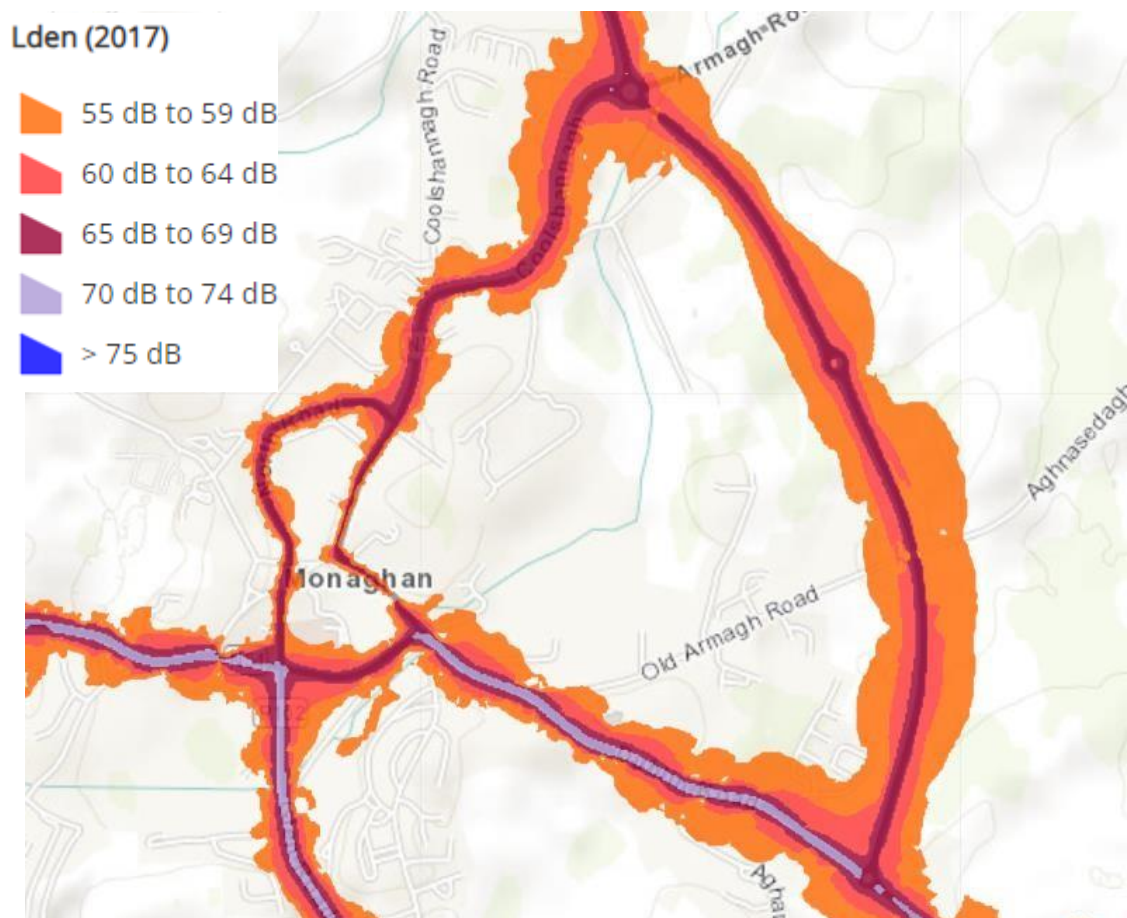


Figure 2.3 TII Noise Mapping 2017 showing Monaghan Town

2.4.18 In 2019, the Environmental Protection Agency (EPA), together with the Environmental Education Unit of An Taisce took NO₂ measurements across the country as part of the CleanAir@School initiative. The NO₂ measurements taken in Monaghan town on February and October 2019, shown in Figure 2.5, indicate average to mediocre air quality but reinforce the idea that traffic emissions are a significant contributor to air pollution in Monaghan town.

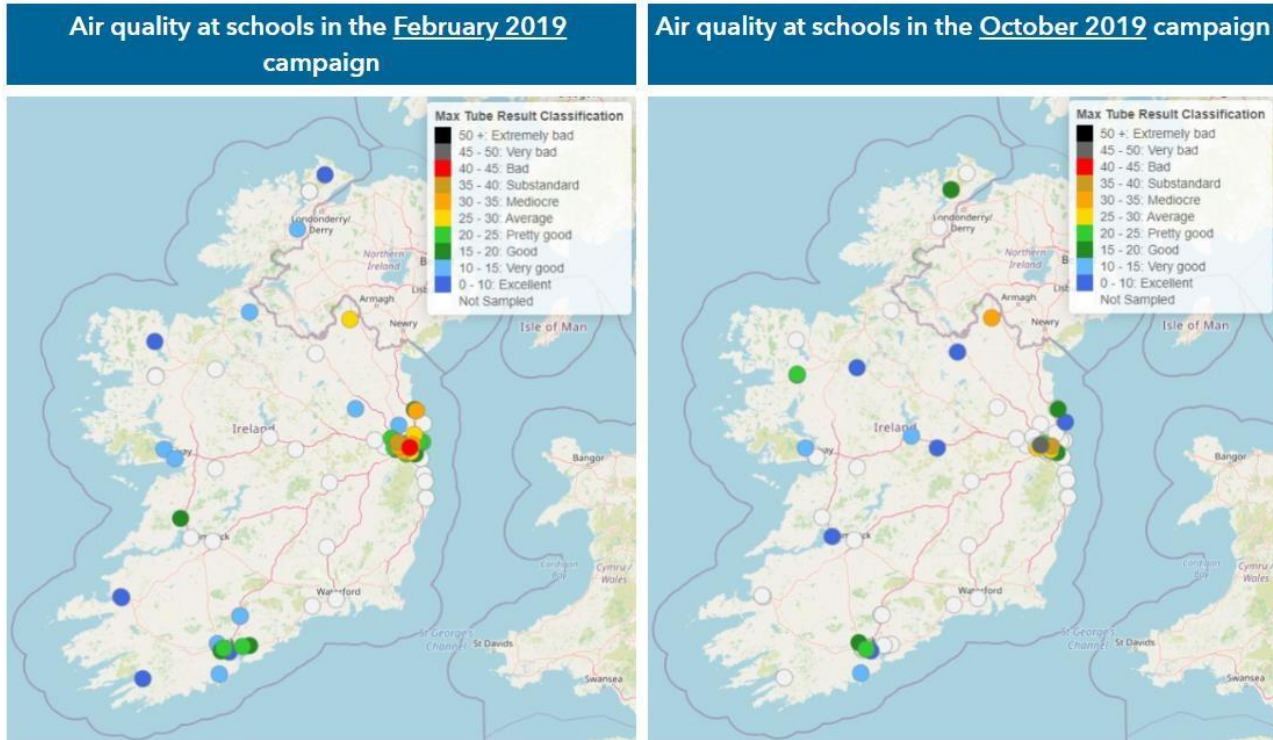


Figure 2.4 Air Quality at schools in Ireland 2019 (source: An Taisce)

2.4.19 As reported in DMURS 2019: Section 3.4.5, Noise and Air Pollution: pollution can also seriously affect the attractiveness of walking and cycling along affected routes. The main factors which determine the level of road noise and air pollution are traffic volume, speed, levels of congestion and the proportion of HGVs. Many of these issues may be substantially addressed by directing large volumes of traffic (and in particular HGVs) away from cities, towns and villages and by reducing speeds.

3. OBJECTIVE SETTING

3.1 Overarching Objective

3.1.1 An overarching objective for TANEMT was identified based on the project context and rationale.

The Overarching Objective for TANEMT is:

To provide appropriate transport access to the 87 hectares of land zoned for commercial development at Knockaconny, Tullyhirm and Annahagh in Monaghan Town to promote Monaghan as the key industrial and employment centre in line with its County Town Status and the principles of compact development.

3.1.2 To help in the development of the project and subsequent appraisal, a series of sub-objectives have also been developed. These sub-objectives are categorised under the five appraisal criteria contained within the Department of Transport’s Common Appraisal Framework. The sub-objectives are listed below with further information on their development through a Logic Path Model described in the next section.

CAF CRITERIA	SUB-OBJECTIVE
Economic	Improve transport access to the strategic zoned lands at Knockaconny / Annahagh / Tullyhirm reducing journey times and kilometres travelled for trips to and from the area as it develops to 2025 under the current development plan and beyond
	Protect the function of the strategic road network and avoid congestion, maintaining the levels of service on existing roads as the lands in the study area are developed and associated transport activity increases
	Deliver efficient phasing of transport interventions through cost effective infrastructure
Safety and Public Health	Provide transport access to the subject lands in a safe manner through the design of junctions and connectivity to the existing transport networks
Culture, Heritage and Environment	Reduce the impact of transport from new commercial developments in Monaghan Town on local air quality and noise
	Reduce the impact of transport from new commercial developments in Monaghan Town on carbon emissions from transport aligning with the 2030 targets for decarbonisation set out in the Climate Action Plan
Accessibility and Wellbeing	Ensure TANEMT provides multi-modal connectivity with provision for walking, cycling and potential future public transport integrating with existing and proposed sustainable mode networks and infrastructure including the Ulster Canal Greenway
Integration and Strategic Alignment	Support the envisaged growth and development of Monaghan Town as envisaged in the County Development Plan to 2025 and Project Ireland 2040 through providing appropriate transport accessibility to commercially zoned land whilst adopting an area based transport assessment approach to enhance integration between land use and transport planning

3.2 Logic Path Model

3.2.1 To inform the development of sub-objectives, a Logic Path Model was developed which considered:

- Drivers / Issues being addressed and the context within which the intervention takes place;
- Inputs – resources and activities that could form interventions
- Outputs – such as transport infrastructure delivered
- Outcomes – short and medium term results, such as changes in traffic flow levels and modal shifts; and
- Impacts – long term results such as environmental benefits.

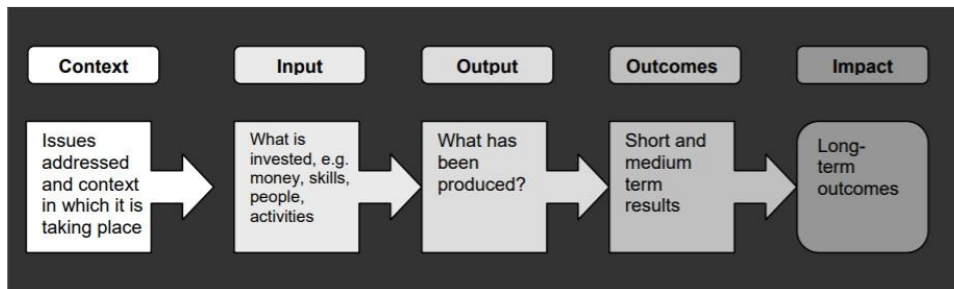


Figure 3.1 Logic Path Model

3.2.2 As can be seen in Figure 3.2 the objectives for TANEMT may address one or more issue. This is to be expected as there are often synergies to be found between objectives and complimentary interventions and outcomes. For example, integrating with land use policy to deliver compact growth can reduce vehicle kilometres by car with knock on benefits for reducing carbon, congestion, traffic noise and improving air quality.

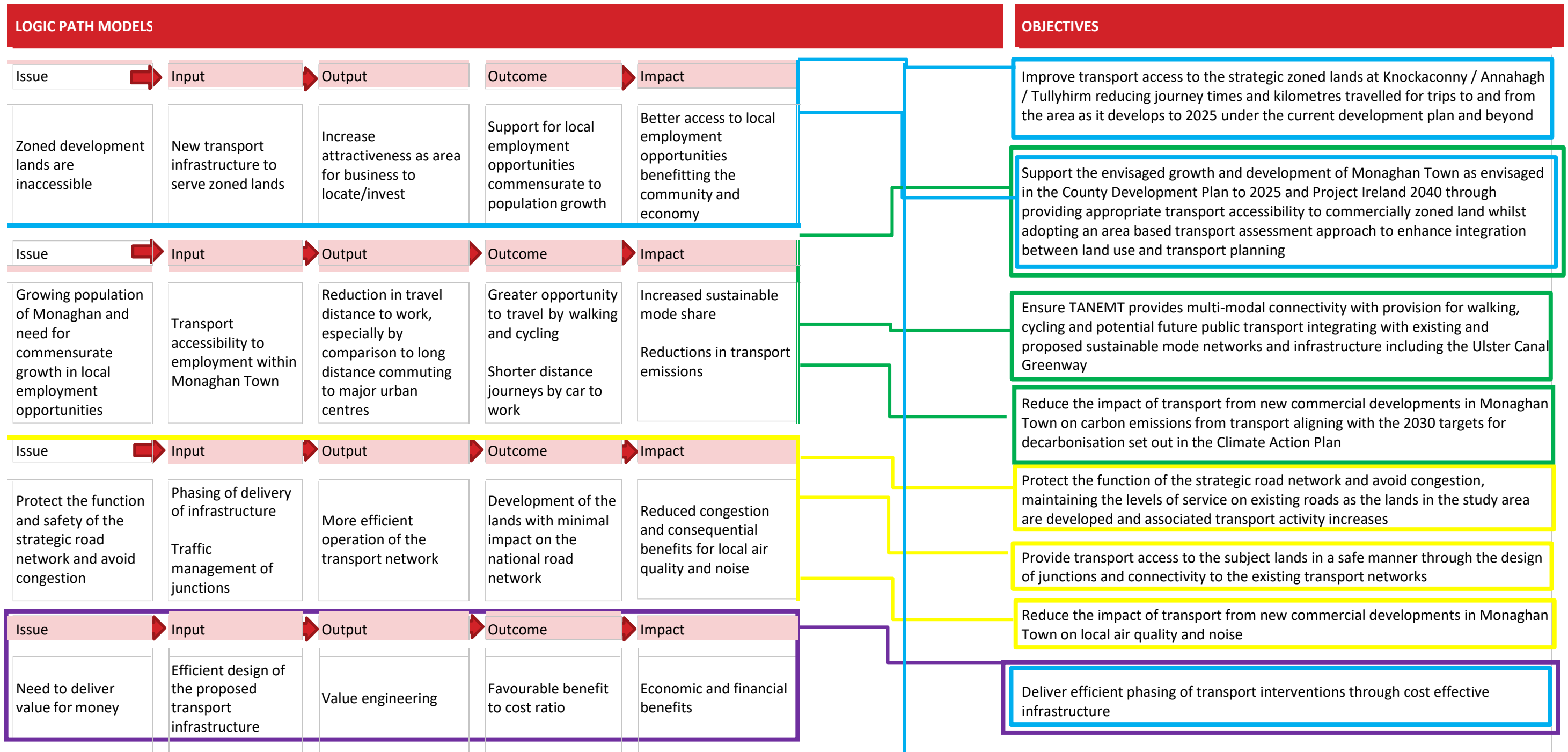


Figure 3.2 TANEMT Logic Path Models and relationship with identified objectives

4. POLICY CONTEXT

4.1 Strategic Alignment with Policy

4.1.1 The need for close integration of transport, economic and spatial planning to support sustainable development is well established in policy as presented within this SAR, particularly:

- UN Sustainable Development Goals
- Climate Action Plan 2021
- Project Ireland 2040: National Planning Framework national policy objectives
- National Investment Framework for Transport in Ireland
- Northern and Western Regional Spatial and Economic Strategy
- Monaghan County Development Plan
- Monaghan Land Use and Transportation Study

4.1.2 The following specific reference to the subject lands is included in the NWRA RSES 2020-2032:

“Industry, Enterprise and employment lands in the Northeast of the town. These lands could be connected to the national road network and their development should be integrated with the population growth and are of strategic importance for future employment in the town.”

4.1.3 Current policy at global, national and regional levels recognises the significant need to reduce travel by private car. Land development policy now stipulates that future development is compact and that it is vital to take account of the needs of all transport modes, including cyclists and pedestrians.

4.2 Introduction

4.2.1 Extending from policy at global/European, National, Regional and local levels, there is an identified need to invest in measures to:

- Support the population’s health and wellbeing;
- Provide for population and economic growth;
- Support compact growth in Monaghan County through investment in Monaghan Town given its regional importance and the need to avoid unsustainable travel patterns;
- Support the future development of zoned land as planned;
- Manage congestion and consequential negative impacts on noise and air quality; and
- Protect the function of the national road network

4.2.2 The key policies which relate to and support TANEMT are summarised in this section.

Global and European Policy

4.3 United Nations Sustainable Development Goals (UN, 2015)

4.3.1 Since 2015, Ireland has been a signatory to the United Nations Sustainable Development Goals (SDGs). The core 17 SDGs are shown in Figure 4.1. These goals set out urgent call for action by all countries. There is considerable correlation between the UN SDGs and the National Planning Framework 2040’s National Strategic Outcomes.

4.3.2 TANEMT would contribute to achieving a number of SDGs aligning in particular with the following:

- SDG 3 Good Health and Well-Being: Ensure healthy lives and promote well-being for all at all ages; Improving road safety is a specific objective of TANEMT which aligns with the UN’s target 3.6 to halve the number of global deaths and injuries from road traffic accidents. TANEMT’s objective to reduce the impact of transport on local air quality reflects the UN’s target 3.9 to substantially reduce the number of deaths and illness from hazardous air pollution. Good health and well-being is supported by TANEMT’s objective to support physical activity by providing for walking and cycling and integrating with existing and proposed sustainable mode networks and infrastructure including the Ulster Canal Greenway.
 - SDG 8 Decent Work and Economic Growth: Promote sustained, inclusive and sustainable economic growth, full and productive employment and decent work for all; TANEMT’s objective to support the creation of employment opportunities relates to the UN’s target 8.1 to sustain per capita economic growth. This objective is also linked to the UN’s target 8.3 to “promote development-orientated policies that support productive activities, decent job creation, entrepreneurship, innovation”.
 - SDG 9 Industry, Innovation and Infrastructure: Build resilient infrastructure, promote inclusive and sustainable industrialisation and foster innovation; TANEMT’s objective for multi-modal access aligns with the UN’s target 9.1 to develop quality, reliable, sustainable and resilient infrastructure to support economic development and human wellbeing with a focus on affordable and equitable access for all.
- SDG 11 Sustainable Cities and Communities; Make cities and human settlements inclusive, safe, resilient and sustainable. TANEMT’s objective to support population growth within the urban area of Monaghan Town related to the UN’s target 11.3 to enhance inclusive and sustainable urbanisation.



Figure 4.1 Policy United Nations Sustainable Development Goals

National Policy

4.4 Project Ireland 2040: National Planning Framework (Government of Ireland, 2018)

- 4.4.1 The Government of Ireland approved the National Planning Framework 2040 (NPF) in 2018. The NPF is the Government’s high-level strategic framework setting out the long-term plan for shaping the future growth and development of Ireland up to 2040. The NPF is built around ten principles as identified in Figure 4.2. The principles, the National Strategic Outcomes, include: Enhanced Regional Accessibility; Compact Growth; Sustainable Mobility; Transition to a Low Carbon and Climate Resilient Society; and Enhanced Amenity and Heritage.
- 4.4.2 Overall Project Ireland 2040 sets out the framework to support population growth of 1,000,000 from 2016 with the majority of that growth to be located within existing urban areas. This population growth will require 660,000 new jobs. IN support of the implementation of the NPF, the envisaged population growth is cascaded down through the Regional Spatial and Economic Strategies and County Development Plans. In the case of Monaghan Town, as an identified Key Town, the Northern and Western Regional Spatial and Economic Strategy (NWRSES) forecasts a 30% uplift in the population. This would result in an increase in population from 7,700 in 2016 to just over 10,000 in 2040. In line with the Implementation Roadmap for the NPF, a significant amount of that population growth will occur by 2026. This is reflected in the Monaghan County Development Plan which projects the population of Monaghan Town to be 9,415 by 2025.



Figure 4.2 Project Ireland 2040: NPF: National Strategic Outcomes

- 4.4.3 Strategic alignment with the policy of NPF 2040 are as follows:
- **NSO 1: Compact Growth** because TANEMT comprises enabling infrastructure which will support the delivery of the potential growth envisaged for Monaghan Town as a Key Town and largest existing urban area in the County.
 - **NSO 2: Enhanced Regional Accessibility** because given the connectivity to the national road network, supporting the development of land within the study area will enhance regional access to employment and business opportunities.



- **NSO 3: Strengthened Rural Economies and Communities** because facilitating future development within the study area will support Monaghan Town's role as a significant location of trade and employment for the town and the surrounding rural population
- **NSO 4: Sustainable Mobility** because
 - providing access to local employment and adopting a multi-modal planning approach and integrating with existing, planned and potential future sustainable transport infrastructure will reduce distances travelled and reduce car dependency; and
 - providing for commensurate employment opportunities alongside population growth within Monaghan Town will sustain short travel distances and provide for greater opportunities to travel by active modes.
- **NSO 5: A Strong Economy supported by Enterprise, Innovation and Skills** because
 - the provision of transport links to the zoned lands will increase the attractiveness as an area for business to invest / locate; and
 - connectivity to the national road network will enhance access to the employment and business opportunities afforded by future development within the zoned lands.

4.5 Climate Action Plan 2021

4.5.1 The Climate Action Plan 2021 sets an emission reduction target for the transport sector of 7 million tonnes of CO₂, approximately 51% over the period 2021 to 2030. To achieve this target the Plan sets out a range of measures to reduce emissions in the transport sector. Alongside the Climate Action Plan the Government published an annex of actions. TANEMT's objectives align with two actions in particular:

- Action 78: Implement the National Planning Framework – TANEMT's objective to support the development of the study lands aligns with the delivery of the national policy objective with regard to compact growth and targets for development within existing settlements, along with measures that integrate land use and transport planning in terms of spatial patterns.
- Action 255: Balance better movement priorities within urban areas to transition the built environment and public domain from one that is "vehicle centred" to being "people centred" to align with the goal of net zero by 2050 – TANEMT's objective to adopt a multi-modal approach to addressing transport access needs, connectivity to the existing transport networks including sustainable modes and the opportunity to implement the Design Manual for Urban Roads and Streets directly align with this action.

4.5.2 By facilitating access to local employment for the growing population of Monaghan Town, TANEMT has the potential to reduce kilometres driven by internal combustion engine (ICE) cars which is a key measure in the Climate Action Plan to contribute to the reduction in transport emissions.

4.6 National Investment Framework in Transport in Ireland, 2021

4.6.1 The National Investment Framework for Transport in Ireland (NIFTI) was published in 2021 and supports Project Ireland 2040 and the National Planning Framework (NPF) in delivering the ten NSOs. Within NIFTI it is recognised that the country's transport system will be a key enabler of Project Ireland 2040 over the coming decades. A key objective of NIFTI is to protect and renew our existing transport assets to safeguard the value of our past investment and ensure that the network is resilient to the impacts of climate change and evolving uses and travel patterns.



4.6.2 It sets out investment priorities which future schemes must align with. Details of how TANEMT aligns with the four NIFTI investment priorities of decarbonisation, protection and renewal, mobility of people and goods in urban areas and enhanced regional and rural connectivity is presented in Table 4.1:

Table 4.1 Alignment of TANEMT with the four NIFTI investment priorities

	ASSESSMENT AT GATE 0	POTENTIAL MITIGATION
Decarbonisation	<p>Providing appropriate transport access to local employment opportunities will limit commute trip lengths and allow for consideration of multi-modal measures within the design. An identified sub-objective is to ensure TANEMT provides multi-modal connectivity with provision for walking, cycling and potential future public transport integrating with existing and proposed sustainable mode networks and infrastructure including the Ulster Canal Greenway. This would improve sustainable transport options to the subject lands for existing and future development.</p>	<p>Suitable planning control such as consideration of parking provision will assist in encouraging the use of the sustainable transport infrastructure provided.</p> <p>The inclusion of the sub-objectives relating to environment will ensure that consideration is given to the impact of TANEMT on transport emissions in the Preliminary Business Case.</p>
Protection and Renewal	<p>The location of TANEMT in relation to the N2 and N12 will allow for minimal additional infrastructure to provide for connectivity to existing strategic road infrastructure to serve the zoned development lands. The existing Annahagh roundabout on the N2 was constructed to provide a point of connectivity for future road access.</p>	<p>Traffic management measures could be incorporated into the design to avoid induced traffic demand from the new road infrastructure.</p> <p>The inclusion of the sub-objective relating to the protection of the function of the strategic road network will ensure that suitable consideration is given to the impact of TANEMT in the Preliminary Business Case.</p>
Mobility of People and Goods in Urban Areas	<p>The mobility of people and goods in the urban area of Monaghan is inherent in the overall aim of TANEMT and the provision of appropriate transport access will benefit the existing and future development at the location.</p>	<p>Integration with the wider transport network in the town will further enhance mobility.</p>
Enhanced Regional and Rural Connectivity	<p>Providing appropriate transport access to the subject lands, at the intersection of the N2 Dublin – Derry/Letterkenny route and the N12 link to Armagh and Belfast provides an excellent opportunity to capitalise on Monaghan’s relationship with the Dublin-Belfast economic corridor which is a key driver for this regional area.</p>	<p>The protection of the function of the strategic road network provided for by TANEMT will maintain the existing strategic transport infrastructure’s role in providing regional and rural connectivity.</p>

- 4.6.3 NIFTI sets out a hierarchy of travel modes to be accommodated and encouraged when investments and other interventions are made. The sustainable modal hierarchy is:
- Active travel
 - Public Transport
 - The private car
- 4.6.4 NIFTI acknowledges that some modes will not be appropriate to address some challenges, walking and cycling are not feasible modes of longer distance, interurban travel, and rural areas do not have the population density to make large-scale public transport an effective solution. NIFTI notes that the application of the modal hierarchy within transport planning should be flexible and pragmatic.
- 4.6.5 NIFTI notes that addressing the challenges facing the Irish transport network, today and in the coming decades, will require a certain level of public investment and intervention. However, interventions can take many different forms, and what is appropriate will depend on the specific issue being addressed. The hierarchy for intervention is:
- Maintain
 - Optimise
 - Improve
 - New
- 4.6.6 NIFTI considers both hierarchies serve as a framework to enable the delivery of investments to address the four Priorities. Investment will be priorities-led and needs-based, and where Investment Priorities cannot be addressed by maintaining or optimising existing infrastructure, appropriate improved and new infrastructure will continue to be part of future investment plans.
- 4.6.7 TANEMT's objectives are aligned with the priorities set out in NIFTI, specifically:
- Decarbonisation through the provision of local access to employment and consequential potential for reduced travel distance to work by ICE cars for the future population of Monaghan Town;
 - Improve the transport network through linkages with the expanding active mode infrastructure in Monaghan Town and consideration of the impact of future development on the existing national road network;
 - The provision of new infrastructure to address current accessibility issues to zoned land with consideration of modal hierarchy within the design of access and inclusion for active mode and enhanced public transport access; and
 - Supporting the mobility of people and goods in urban areas with multi-modal considerations in line with the sustainable modal hierarchy.

4.7 National Sustainable Mobility Policy (2022)

- 4.7.1 The National Sustainable Mobility Policy published in 2022 sets out a strategic framework for active travel and public transport to support Ireland's overall requirement to achieve a 51% reduction in carbon emissions by 2030. The key targets underpinning the policy are to deliver a 10% reduction in kilometres driven by fossil fuelled cars and to deliver additional daily active travel and public transport journeys in line with the metrics for transport set out in the Climate Action Plan 2021. The policy supports the strategic outcomes of the National Planning Framework particularly in relation to decarbonisation, compact growth and better balanced regional development.



- 4.7.2 Sustainable mobility is described as connecting people and places by supporting:
- Safe, accessible, comfortable and affordable journeys to and from home, work, education, shops and leisure;
 - Travel by cleaner and greener public transport; and
 - A shift away from private car to greater use of active travel and public transport.
- 4.7.3 Access to employment opportunities is recognised as a benefit of sustainable mobility. Goal 9 is to better integrate land use and transport planning at all levels. The policy states that, as well as ensuring that investment is made in the right things and that transport planning is integrated with land use planning, it is important that transport investment is correctly sequenced.
- 4.7.4 The policy highlights that improved sustainable mobility is not solely a requirement for Cities and that active travel and public transport must be improved in regional and rural areas too. The policy does acknowledge the differing features between areas of differing population density and reference the need for tailored solutions.
- 4.7.5 The policy set out three principle themes –
1. Safe and Green Mobility,
 2. People Focused Mobility,
 3. Better Integrated Mobility.
- 4.7.6 TANEMT objectives align with Sustainable Mobility Policy Goals as shown in the table below.

SUSTAINABLE MOBILITY POLICY GOALS	TANEMT OBJECTIVES
Goal 4 – Expand availability of sustainable mobility in regional and rural areas	Support the envisaged population growth in Monaghan Town with commensurate opportunities for local accessibility to future employment areas reducing vehicle kilometres travelled to work whilst adopting an area based transport assessment approach to further integration between land use and transport planning
Goal 7 – Design infrastructure according to Universal Design Principles and the Hierarchy of Roads Users model	Ensure TANEMT provides multi-modal connectivity with provision for walking, cycling and potential future public transport integrating with existing and proposed sustainable mode networks and infrastructure including the Ulster Canal Greenway
Goal 9 – Better integrate land use and transport planning at all levels	Support the creation of employment opportunities at Knockaconny / Annahagh / Tullyhirm through the provision of adequate and timely transport access maximising the potential of strategic zoned lands within Monaghan Town to benefit the local and regional community and economy

4.8 Get Ireland Active – The National Physical Activity Plan (updated 2021)

- 4.8.1 Another key policy driver for the encouragement of active, healthy travel is the Get Ireland Active – National Physical Plan (NPAP). Launched in 2016, this plan recognises that physical inactivity is a demonstrated clear risk to health and wellbeing in Ireland. The NPAP is about creating increased opportunities for people to be active in ways that fit in to their everyday lives and which suits individual needs, circumstances and interests, and to remove the barriers which people face to being active – by encouraging a supportive environment where physical activity becomes the norm.
- 4.8.2 Action Area Four of the ‘NPAP’ focuses on the use of the natural and built environment as a way to build in daily physical activity. It recognises that promoting active transport is the most practical and sustainable way to increase physical activity as part of people’s everyday routine. It specifically identifies the role of walking or cycling for utility transport as a means to increase people’s activity levels.

The need for investment in TANEMT, as shown in Section 2.4, provides opportunities to enhance active travel in Monaghan Town which would align with the objectives of the National Physical Activity Plan primarily through reducing the barriers to being active, including improving conditions for cycling and walking including improving safety and the perceptions of safety and enhancing cycle route connectivity and continuity.

Regional Policy

4.9 Regional Spatial and Economic Strategy for the Northern & Western Region (Northern & Western Regional Assembly, 2020 – 2032)

- 4.10 The RSES sets out key future priorities for Monaghan which is a designated Key Town in the region. Those priorities include the provision of industry, enterprise and employment lands in the North East of the town. The RSES states that “*These lands could be connected to the national road network and their development should be integrated with the population growth and are of strategic importance for future employment in the town.*” Further priorities for Monaghan Town include:
- Supporting sustainable travel including the provision of cycling, walking and smart travel initiatives set out in the MLUTS; and
 - The development of the Ulster Canal Greenway.
- 4.10.1 The high level transport principles set out in the RSES are to:
- Support improved strategic and local connectivity;
 - Expand attractive public transport and other alternatives to the car;
 - Recognise the role of the car and cater appropriately for it;
 - Reduce congestion; and cater to the demands associated with longer-term population and employment growth, in a sustainable manner.
- 4.10.2 The priority core outcomes to be delivered across the region include:
- Supporting the achievement of ‘compact, smart growth’ through the achievement of ‘mutual consistency’ between land use and transport planning/investment/service provision; and
 - Developing a comprehensive network of safe cycling routes in towns.



4.10.3 Specific reference is made in the RSES to the use of Area Based Transport Assessment (ABTA) guidance produced by TII and NTA. Whilst the reference is related to the preparation of Local Transport Plans, the ABTA process can be used to assess transport requirements at different spatial levels and there would be merit in adopting the planning principles in the approach to the delivery of TANEMT. If progressed through a public funded intervention, TANEMT would facilitate following the approach as described in the RSES for the preparation of LTPs, namely:

- Maximise the opportunities for the integration of land use and planning;
- Assess the existing traffic, transport and movement conditions within the area and in its wider context;
- Plan for the efficient movement of people, goods and services within, to and from the area;
- Identify the extent to which estimated transport demand associated with local development can be supported and managed based on existing transport assets; and
- Identify the transport interventions required within the area and in the wider context, to effectively accommodate the anticipated increase in demand.

4.10.4 Finally, TANEMT objectives align with specific regional policy objectives as shown in the table below.

REGIONAL POLICY OBJECTIVES	TANEMT OBJECTIVE
RPO 3.1: Delivering significant compact growth in Key Towns (Monaghan is identified as a Key Town);	Support the creation of employment opportunities at Knockaconny / Annahagh / Tullyhirm through the provision of adequate and timely transport access maximising the potential of strategic zoned lands within Monaghan Town to benefit the local and regional community and economy
RPO 6.5: The capacity and safety of the region’s land transport networks will be managed and enhanced to ensure their optimal use, thus giving effect to National Strategic Outcome No.2 and maintaining the strategic capacity and safety of the national roads network including planning for future capacity enhancements;	Protect the function of the strategic road network and avoid congestion
RPO 6.26: Safe walking and cycle infrastructure shall be provided in urban and rural areas, the design shall be informed by published design manuals, included the Design Manual for Urban Roads and Streets (DMURS) and the NTA Cycle Manual;	Improve safety through the design of junctions and connectivity to the existing transport networks
RPO 6.30: New development areas should be permeable for walking and cycling and the retrospective implementation of walking and cycling facilities should be undertaken where practicable in existing neighbourhoods, to give a competitive advantage to these modes.	Ensure TANEMT provides multi-modal connectivity with provision for walking, cycling and potential future public transport integrating with existing and proposed sustainable mode networks and infrastructure including the Ulster Canal Greenway

**REGIONAL POLICY OBJECTIVES****TANEMT OBJECTIVE**

Prioritisation should be given to schools and areas of high employment density.

TANEMT is aligned with the transport principles and core outcomes set out in the RSES as it will provide integration between land use and transport planning with improved local and strategic connectivity, manage traffic impacts from future growth and look to connect with existing and proposed walking, cycling and vehicle transport networks to improve accessibility and support sustainable development catering for the future employment in the town.

Local Policy**4.11 Monaghan Land Use & Transportation Study (MLUTS) (Monaghan County Council, 2018)**

- 4.11.1 In 2018, a land use and transportation study was prepared for Monaghan Town examining the transport and land use proposals for the town from now up to 2035. The Monaghan Land Use and Transportation Study (MLUTS) supported the preparation of the Monaghan County Development Plan 2019-2025. MLUTS is a short to medium term plan that sets out the transport and land use options for the town over the period of the Development Plan to 2025 and beyond. MLUTS was a response to resolving the competing demands for more housing and employment generating land uses with the provision of better transportation, environment and community facilities in the MLUTS Area.
- 4.11.2 To provide for the development of the subject lands (87ha of industry / enterprise development lands at Knockaconny, Tullyhirm and Annahagh), MLUTS recommended the provision of a link road from the N2 to the N12. Within MLUTS, it was proposed that funding for the N2 to N12 road scheme be sought from the Department of Transport through specific road improvement programmes and also through development contributions.
- 4.11.3 Outputs from MLUTS analysis, particularly relating to demand for transport, has been used in the preparation of the Project Context and Initial Demand Analysis sections of this SAR.

MLUTS identified a strategic need to deliver the N2 to N12 link road to support the development of the subject lands. MLUTS provides an initial phasing approach and includes consideration of potential interventions on the wider transport network to achieve desired outcomes relevant to TANEMT.

4.12 Monaghan County Development Plan 2019-2025 (Monaghan County Council, 2019)

- 4.12.1 The Monaghan County Development Plan provides an overall strategy for the proper planning and sustainable development of County Monaghan over the timescale of the Plan. The purpose of the Development Plan is to set out a shared vision of how the sustainable and co-ordinated growth and development of Monaghan Town can be shaped in a planned manner which will also act as a catalyst for the economic, physical, cultural, and environmental development of the town.



- 4.12.2 The Plan aims to give direction to the town's expansion while encouraging an inclusive, transparent and accountable approach to future development during the plan period of 2019-2025 and beyond. The 2016 Census indicates that the population of Monaghan town is 7,678. This represents an increase of 226 from the 2011 Census, an increase of 3%. The main employment sectors in Monaghan Town in 2016 were in Commerce and Trade (20%) Professional Services (21%), Industries (18.6%) and Manufacturing (12.9%). Although the employment figures reinforce the standing of Monaghan Town as the county's main commercial, administrative and service centre, there is a deficiency in the number of jobs in hi-technology based industries and employment opportunities for graduates. It is hoped that with improved third level educational facilities and the provision of sufficient serviced industrial lands in the town, this form of industry may be attracted to the town.
- 4.12.3 TANEMT aligns with the Development Plan's Strategic Objectives in a number of ways with direct relationships with TANEMT Objectives as shown in the table below.
- 4.12.4 Monaghan County Development Plan 2019 – 2025 included the proposed development of an industrial link road as shown in Figure 4.3 from N12 Armagh Road at Knockaconny to N2 Dublin at Annagh Roundabout.



MONAGHAN COUNTY DEVELOPMENT PLAN STRATEGIC OBJECTIVES	ALIGNED TANEMT OBJECTIVE	COMMENT
<p>SO 1 To develop to its full potential each part of County Monaghan in economic, social and environmental terms.</p> <p>SHO 1 To facilitate the development of Monaghan Town to maintain its position as the principal town in the County at the top of the settlement hierarchy and to ensure that its expansion takes place in an orderly and sustainable fashion that will not detract from the vitality and viability of the town centre.</p>	<p>Support the creation of employment opportunities at Knockaconny / Annahagh / Tullyhirm through the provision of adequate and timely transport access maximising the potential of strategic zoned lands within Monaghan Town to benefit the local and regional community and economy</p>	<p>Transport access, which is at the core of TANEMT, is needed to support the development potential of the zoned lands within the study area. Supporting employment growth within Monaghan Town will help sustain its role and function as the Key County Town.</p>
<p>SO 2 To sustain traditional settlement patterns while developing the role and function of each town, village and settlement throughout the County in accordance with the settlement strategy.</p> <p>SO 4 To support balanced economic development throughout the county by delivering improved infrastructure and services.</p>	<p>Support the envisaged population growth in Monaghan Town with commensurate opportunities for local accessibility to future employment areas reducing vehicle kilometres travelled to work whilst adopting an area based transport assessment approach to further integration between land use and transport planning</p>	<p>The development of Monaghan Town, which will be supported by TANEMT, is critical to the objectives for balanced economic development within the largest settlement within the county.</p>
<p>SO 6 To plan for greater social inclusion and to improve the quality of life of all who live and work in County Monaghan.</p>	<p>Ensure TANEMT provides multi-modal connectivity with provision for walking, cycling and potential future public transport integrating with existing and proposed sustainable mode networks and infrastructure including the Ulster Canal Greenway</p>	<p>Adopting a multi-modal approach to the delivery of TANEMT will help address car dependency and will provide for greater social inclusion of those without access to a car and reduce the overall cost of transport to work for those on lower incomes</p>
<p>SO 8 To maintain the strategic capacity and safety of the national roads network and to safeguard the investment in national roads.</p>	<p>Protect the function of the strategic road network and avoid congestion</p>	<p>The development within the study area will benefit from the connectivity to the national road network and is an important factor in the attractiveness of the area as a location for new commercial development and employment. TANEMT provides for a managed approach to cater for demand and consideration of safeguarding the investment in national roads.</p>

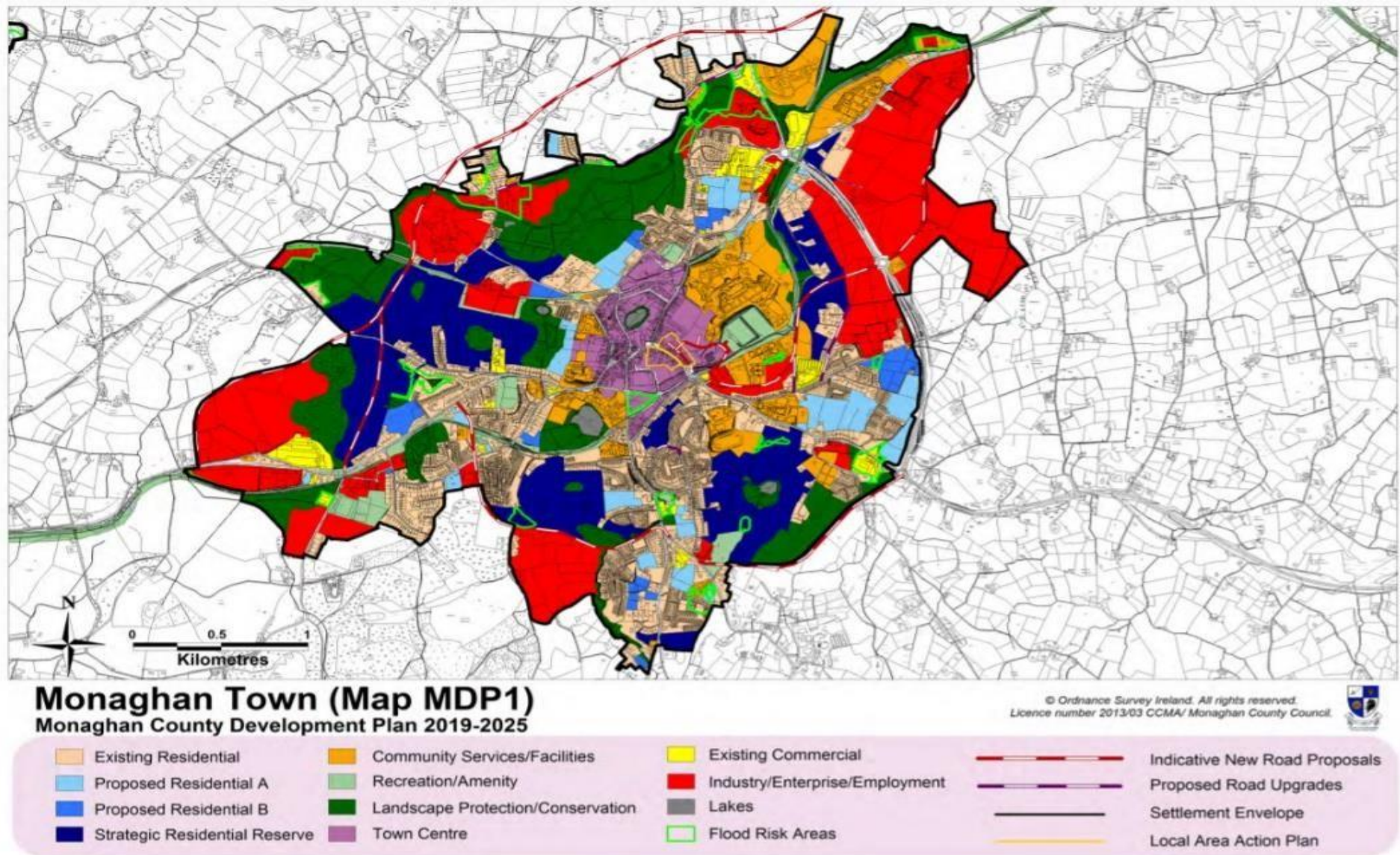


Figure 4.3 Monaghan Town Map – Industrial Link Road



TANEMT is specifically relevant to achieving the objectives and intentions of The Monaghan County Development Plan through the following:

- Providing transport access to support the development of strategic employment lands within the Key Town of Monaghan
- Supporting the planned population growth within the existing urban settlement of Monaghan Town through servicing of lands to provide for the commensurate delivery of employment opportunities
- Facilitating the development of Monaghan Town to maintain its position as the principal town in the County

5. LESSONS LEARNED

5.1 Introduction

- 5.1.1 The need for the provision of transport access to development lands is a common and frequent issue. A case study is presented below to provide some insights on potential lessons learned from the development of commercial lands elsewhere in Ireland.

5.2 Little Island Case Study

- 5.2.1 Little Island is a significant employment location in Metropolitan Cork situated 8km to the east of Cork City Centre with direct access provided from the N25 National Road. Facilitating over 7,000 jobs, Little Island accommodates a mix of pharmaceutical/industrial plants, commercial warehouses and offices.



- 5.2.2 The delivery of employment on Little Island has taken place over a number of decades as demand for new sites grow. The incremental delivery of supporting infrastructure has resulted in a poorly performing network which suffers from severe congestion during peak traffic periods. Whilst Little Island is served by a Rail Station and regional bus services, the absence of connecting walking and cycling routes and poor integration of land use and transport, has resulted in a reliance on the private car with a car mode share of 90%. The quality and maintenance of the roads within Little Island also varies considerably with some roads taken in charge by the local authority, but a number of roads remaining in private ownership.
- 5.2.3 In 2018 Cork County Council commissioned a transport strategy for Little Island with the central aim of creating a safe and efficient network which will support ease of movement for all modes and enable the sustainable growth of the Strategic Employment Centre. With a focus on sustainable transport, the plan identified the need to retrofit walking and cycling facilities linking residential and employment areas to attractions and public transport nodes. Whilst the full delivery of the plan would create a safer and more attractive environment for sustainable travel, its delivery faces many challenges including the need to acquire land which has already been developed to deliver walking, cycling and public transport measures, the costly requirement to divert utility services and the need to secure agreement for improvement to roads under private ownership. The retrofitting of sustainable infrastructure in an unplanned network will prove costly and is envisaged will take over 20 years to fully deliver.

5.3 Grange Castle Business Park Case Study

- 5.3.1 Grange Castle Business Park (the Park) is an extensive industrial and commercial campus located in the suburb of Clondalkin 10km west of Dublin City Centre. Primary access to the site is currently provided along the R136 Outer Ring Road that links to the N81, N7 and N4. With an expanding site the Park's client base has diversified to include biopharma technology, food research and data centre facilities.
- 5.3.2 The road network both internal and local has been continually improved and extended to provide equal access across the Park. In 2006 plans were made for the major improvements of the Nangor Road 134 that forms the southern boundary of the Park which included the widening, straightening and installation of cycle and footpaths and junction improvements with the R120 Newcastle Road. 2008 saw the construction of the R136 Outer Ring Road which improved connectivity to the national network of primary roads (N4, N7, N81) and the M50. With the continued interest in the site in 2013

the internal road network was upgraded with an east/west carriageway increasing the number of sites available for future clients. In 2015 improvement to the R120 Adamstown road were made with the CPO of land surround the 12th lock bridge that allowed for improved access to the current Grange Castle Business Campus and align with the junction of the R134 and entrance to the Grange Castle West Business Campus. These advanced improvements of the local road network have provided sufficient road capacity during both construction and operational phases of new sites within the Park.

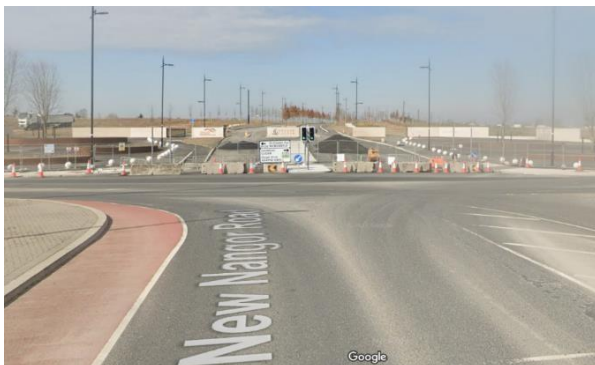
5.3.3 In response to the need for encouragement of active travel and the creation of the Grand Canal Green Route cycle and walkway adjacent to the Park, 2011 saw the expansion of 2km of cycle/pedestrian tracks across the site. These new active travel routes while providing permeability also led to a new recreational/amenity area featuring a lake, fountains, and extensive landscaping (see figure below). This aimed to create a more attractive environment for clients and their employees.



Figure 5.1 Images showing walking, cycling and public transport infrastructure within Grange Castle Business Park (source CSEA Engineers and Google Maps)

5.3.4 With a continually growing workforce at the Park public transport options are provided with two Dublin Bus services operating routes through the site at frequency maximums of a combined eight bus an hour, with one service having a set down area within the Park. Under the Dublin Bus Connects network redesign this will continue with the inclusion of routes through the site providing a high frequency city centre spine and new orbital service for West Dublin.

5.3.5 With the original site of the Park fully developed the next phase of the Park has commenced to transform a further 500 acres across the R120. Work has already taken place with April 2022 opening of the Grange Castle West Access Road, providing 1km of dual carriageway complete with segregated cycle and pedestrian pathways constructed under a Part 8 agreement. The work involved the transformation of the R120/R134 junction into a four-arm signalised junction made possible by forward planning during 2013 and 2015 upgrades to the local network. This aims to continue the success of the Park and increase the number of world leading clients at the Park which currently include Google, Amazon, Microsoft and Pfizer.



5.4 Key Lessons Learned

5.4.1 From the case study of Little Island the key lessons learned for TANEMT are:



- An ad hoc delivery of transport access would likely occur in the absence of a public intervention
- Incremental delivery of transport access infrastructure is likely to result in a poorly performing network
- Issues of connectivity and integration with external existing and proposed transport infrastructure will potentially arise if no intervention is made
- Retrofitting sustainable infrastructure will be challenging and costly
- Sustainable transport infrastructure can be successfully incorporated into access roads to commercial lands
- Suitable permeable road infrastructure can support the provision and development of bus services

6. INITIAL DEMAND ANALYSIS

6.1 Strategic Importance

6.1.1 As was shown in Section 2, there is a high level of activity in planning applications in the area as well as recent developments and thriving businesses. There are a number of factors that single out the subject lands as a strategic location for industry and enterprise, including:

- Proximity to the Dublin-Belfast Economic Corridor;
- Increasing demand for regional hubs to facilitate remote working outside major cities;
- A strong entrepreneurial culture with a history of successful indigenous companies and 21% entrepreneurs as a share of the workforce in Monaghan;
- Opportunities for consolidation and clustering benefits, leveraging the existing developments within the study area to provide opportunities for the highly skilled local workforce;
- Topography of the study area and quantum of land available provides opportunity for large scale developments that would be difficult to site elsewhere in the County;
- Quality of life offering with short commutes, affordable housing and excellent facilities within the County Town;
- Well-serviced lands in terms of utilities; and
- Support of the IDA and Enterprising Monaghan providing affordable workspace solutions, local know-how and guidance.

6.1.2 The timely delivery of transport access is important to take advantage of opportunities for attracting new employment post Brexit. EU data protection requirements and GDPR compliance needs have resulted in an increase in demand from UK and Northern Irish based businesses for commercial space within the EU so as to maintain an EU presence. Monaghan Town is particularly attractive for Northern Irish based businesses given its proximity to existing workforces.

6.1.3 Other opportunities have arisen due to the changes in working practices accelerated by the COVID-19 pandemic, in particular, the demand for regional working hubs to allow people to work closer to home.

6.1.4 The provision of adequate transport access will provide certainty and clarity for all potential developers and encourage and location of new industries within the area.

6.2 Recent Development in the Area

Combilift - Annahagh

6.2.1 Combilift with 650 employees established its new global headquarters in Monaghan town in 2017. The facility comprises of 11 acres under one roof and is the key driver of the regional engineering sector, supporting many local suppliers and contractors. Combilift's expansion plans relate to new innovation product development in areas such as robotics, artificial intelligence and remote storage facilities throughout the world, building on its 95% export rate. The company acquired additional land adjacent to its facility to provide for future development and relocation of supply chain providers.

6.2.2 The proposed link road from the N2 to the N12 will facilitate and encourage the future development of the Combilift plant in Monaghan town, providing direct access to lands owned by the company in addition to zoned industrial land owned by Monaghan County Council and other third parties.



Figure 6.1 Combilift Global Headquarters at Annahagh

Knockaconny Business and Technology Park

- 6.2.3 IDA Ireland has developed Knockaconny Business and Technology Park and retains ownership of 18ha of zoned land, undeveloped due to lack of road access. IDA Ireland has reinvested in the Technology and Business Park, upgrading all services in 2016. They commissioned the PM Group to complete a Feasibility Study of the Park in 2017 which identified the potential to develop seven new Advance Technology Units, ranging in size from 1,350 sqm to 3,650 sqm. Work commenced on the construction of a 1,350 sqm advance technology unit on a 3ha site in late 2019. The facility, completed in 2021, will be marketed by IDA Ireland with the capacity to employ up to 150 people.
- 6.2.4 Monaghan town and Knockaconny Business and Industrial Park has become the hub for the services and engineering sectors. The M Tek 1 and 2 office facilities based in the Park hosts 230 professional and administrative workers. A planning application for M Tek 3 office facility was processed in 2019 and work is ongoing on designing a 3,000 sqm M Tek 4 building in the Park.



Figure 6.2 Knockaconny Business and Industrial Park – concept design

- 6.2.5 Monaghan County Council, together with Monaghan Mushrooms and Enterprise Ireland, has established Monaghan Bioconnect, a new research facility also located within the Technology and

Business Park. This fully-funded 1,600 sqm, €6m facility, currently proceeding through the formal planning and tender stages, will host 125 scientists and graduates, engaged in researching and developing new opportunities and products in the bio-sector, in partnership with the region’s agrifood sector. The long term strategy is to develop new products in the Centre and scale up for production on new industrial units located on sites identified in the 2017 PM Group Study, to the rear of the Park. The provision of transport access within the study area will be critical in supporting this strategy.

6.3 Potential for Future Development

6.3.1 The Monaghan Land Use and Transportation Study identified that the lands at Knockaconny/Annahagh/Tullyhirm offered the best scope in terms of consolidation and expansion of existing large scale economic development to serve the demands of this regional town. MLUTS set out the potential development of the 87 hectares of land in three phases as follows:

- Phase 1 – 46ha on the eastern side of the N2 with the full development of this area predicted to result in approximately 1,400 jobs;
- Phase 2 – 21ha on the western side of the N2 bypass with the full development of this area predicted to result in approximately 600 jobs; and
- Phase 3 – 20ha on the eastern side of the N2 bypass with the full development of this area predicted to result in 600 jobs.

6.3.2 The potential scale and phasing of development will need to be considered in the future planning of TANEMT should it proceed.

6.4 Existing Traffic Conditions and MLUTS Traffic Modelling

6.4.1 Travel patterns at the time of preparation of the SAR continue to be impacted somewhat by the COVID-19 pandemic. Given the prolonged duration of the travel restrictions implemented during the pandemic, it is taking some time for travel patterns to adjust post lifting of the restrictions. At present, it is expected that ultimately traffic levels in the area will return to pre-pandemic levels or similar. Therefore, in the consideration of traffic conditions and initial demand analysis, data from the 2018 MLUTS is used.

Table 6.1 AADT (Source: MLUTS)

LOCATION /SITE	AADT 2015	AADT 2018	% HGV'S 2018
N2 North of Monaghan (Coolkill East)	6,747	8,645	6%
N12 at Knockaconny	5,205	8,659	5%
N2 south of Monaghan at Corlat	9,937	13,036	11%

6.4.2 Across these locations, a very substantial increase in traffic levels was observed between 2015 and 2018 between a third and two thirds. This level of growth in transport demand reflects general trends as the economy recovered rapidly post the economic crash in the mid noughties.

6.4.3 The N12 is a Type 3 single carriageway. This road type is normally recommended for a national secondary route as per the TII guidelines DN-GEO-03031. At present the existing AADT is above the 5000 AADT road capacity on the Knockaconny section with an AADT of 8,659 recorded in the 2018 traffic counts undertaken as part of MLUTS.

MLUTS Traffic Modelling

6.4.4 A number of models were run for the development of the lands with the N2-N12 Link roadway in place. The model was run under the following situations:

- With and without a connection to the N12
- Incremental growth (10% and 5%) was applied to the proposed development
- With and without a mid-town link route (from Old Cross Square to the Annahagh Roundabout)
- With and without a northern and southern link road
- With improvement to a number of existing junctions that showed constraints, i.e.:
 - Signalisation of Old Cross Square roundabout, (N54)
 - Signalisation of the Coolshannagh Road (L-5182)/ N54 junction
 - Signalisation of the Northern arm of the Coolshannagh Roundabout (N54/N12/ N2)

6.4.5 The following was observed from the model:

- The N2 is currently operating with Level of Service B in both directions and forecast to operate at LOS C southbound and LOS B northbound in future years. A LOS C represents stable operations with lower speeds than LOS B, however road conditions are still reasonable.
- During peak hours it is expected that approximately 200 vehicles will re-direct to the new link road to travel from the N2 to N12 and the opposite direction.
- The Annahagh Roundabout has ample capacity to deal with the proposed development.
- Initially, once access is provided, 72ha of land can be developed by 2025 with minimal impact on the surrounding network.
- The provision of the link road connecting the N2 and N12 will result in less traffic at Coolshannagh Roundabout and also a reduction in traffic on the N12 at Monaghan Institute.

The projected AADT for TANEMT (referred to as the N2 to N12 Link Route in MLUTS) in 2035 is 4,195 in the scenario with a connection to N12 and 1,555 without.

7. IDENTIFICATION OF OPTIONS

7.1 Guiding Principles

7.1.1 In addition to the objectives, initial demand analysis and policy context, it is important to consider constraints and opportunities in the area that will have a bearing on the options available for the provision of transport access. These are described in this section.

Existing Infrastructure and accesses onto the National Road

7.1.2 Taking account of the objective to “Protect the function of the strategic road network and avoid congestion” it will be important to maximise the opportunities provided by the existing accesses onto the N2 and N12 whilst being conscious of their capacity. MLUTS and Transport Infrastructure Ireland reference the need to seek to maintain and protect the safety, capacity and efficiency of national roads and associated junctions.

7.1.3 MLUTS analysis identified that the Annahagh Roundabout has ample capacity to accommodate additional traffic from the study area lands. Therefore, this is considered a fixed point of access and no alternative options for vehicular access onto the N2 are considered at this stage. This should be kept under review during the planning and design to ensure that it does not constrain achieving the objectives.

Topography

7.1.4 The landscape of the area is generally undulating consisting of small hillocks and drumlins. In areas the slope regime of the site indicates steep slopes in the 1:5 to 1:10 range. Taking account of the objectives to provide for efficient delivery of the site and to encourage access by walking and cycling, the orientation of access should seek to adapt to the topography. This will be particularly relevant in identifying a suitable route to connect with the N12.

Design Guidelines

7.1.5 It is recommended that the design of options takes accounts of the following guidelines:

- NTA / TII Area Based Transport Assessment Guidelines
- Department of Environment, Community and Local Government Spatial Planning and National Roads: Guidelines for Local Authorities; specifically Section 2.7: Development at National Road Interchanges or Junctions
- Department of Transport Design Manual for Urban Roads & Streets

7.1.6 The use of these guidelines will support the appropriate planning of transport access and ensure that best practice design principles are followed.

7.1.7 As per Section 28 Ministerial Guidelines ‘Spatial Planning and National Roads Guidelines for Planning Authorities’ (DoECLG, 2012), in particular Chapter 2’s key messages, the proposed intervention TANEMT is plan led. The commissioning of the “Monaghan Land use and Transport Study in 2017” provided the key steps for an evidence based approach to Planning Development and Roads and the update of the MCDP.

Changes in the Wider Transport Network

7.1.8 There are a number of major projects in development and under consideration that would have a significant impact on identifying the most appropriate option for TANEMT. In particular, consideration will need to be given to the following major projects:

- N2 Clontibret to Border Scheme
 - Monaghan County Council is working with Transport Infrastructure Ireland (TII) to develop the N2 Clontibret to Border scheme to upgrade a 28km section of the N2/A5 Dublin-Derry Road.
 - The proposed project is in County Monaghan between Clontibret and the Northern Ireland Border with the identified preferred corridor shown in Figure 6.1.
 - The National Planning Framework 2040 specifically references the N2/A5 (Clontibret to Tyrone/NI border) roads project.
 - The scheme is included in the National Development Plan 2021-2030 for further consideration
 - Monaghan County Development Plan considered that this route should be prioritised given its strategic importance and the lack of any direct rail infrastructure serving significant urban areas in the northwest along the route of the N2/A5.

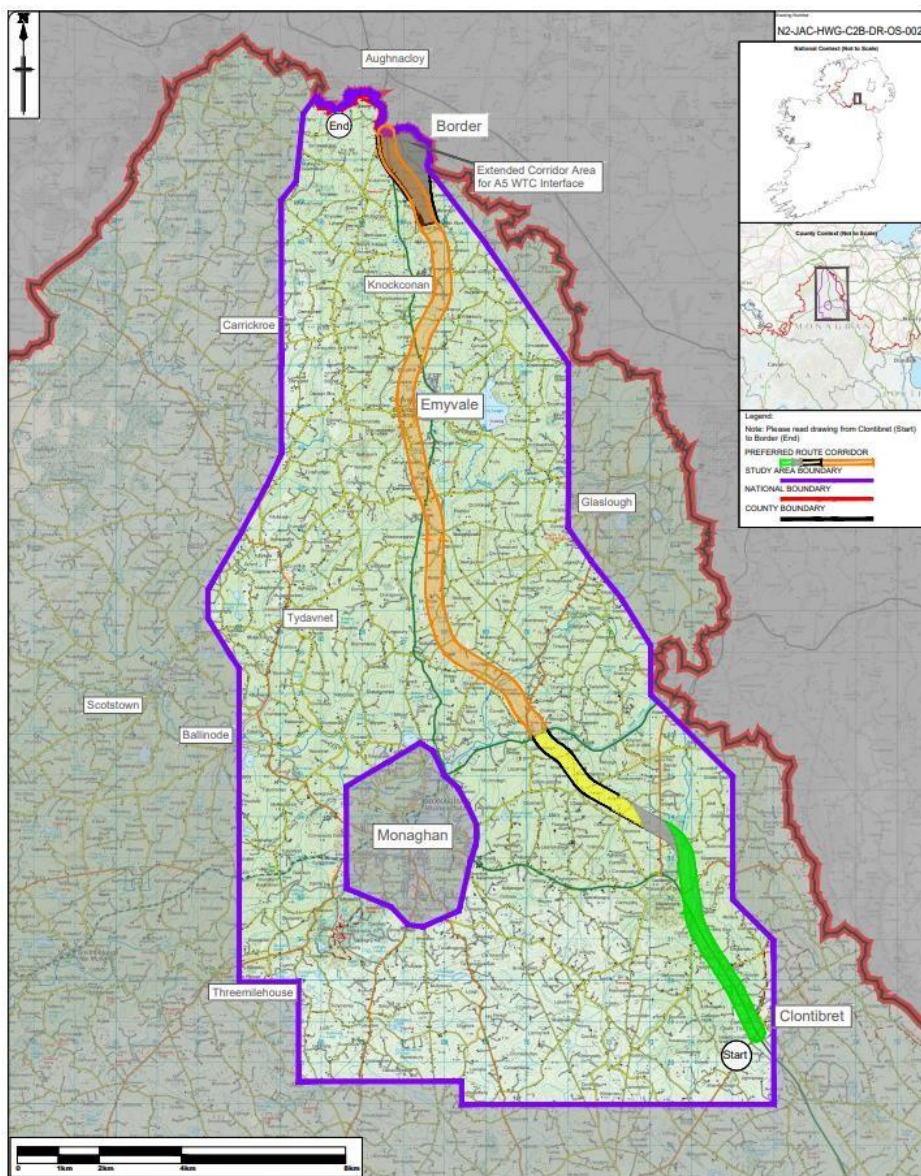


Figure 7.1 N2 Clontibret to Border Road Scheme Preferred Route Corridor, February 2021



- **Ulster Canal Greenway**
 - The Ulster Canal Greenway Strategy was developed through collaboration between Waterways Ireland and the five local authorities along the corridor Armagh City Banbridge & Craigavon Borough Council, Cavan County Council, Fermanagh & Omagh District Council, Mid Ulster District Council and Monaghan County Council.
 - The Greenway, which extends over 190km, is being delivered in phases.
 - In 2013, a 4.3km section was opened through Monaghan Town.
 - Phase 2 has progressed to implementation and plans are being put in place for future sections.
 - As shown in Figure 2.3, the Ulster Canal Greenway is in close proximity to the study area and there are opportunities to develop connections and links to provide for an integrated active mode network.

- **N2/N12 Active Travel Provision**
 - Monaghan County Council are progressing plans to develop and improve the cycle network in Monaghan Town and to improve connectivity between Monaghan Town and Emyvale Village

7.2 General Considerations

- 7.2.1 There are a number of characteristics that will need to be considered in relation to any identified access alignment option. The following will be considered as potential design alternatives for each alignment option:
- Speed limit designation
 - Extent of segregation of modes vehicle / walking / cycling
 - Carriageway width (single / dual) and provision of turning lanes to access individual sites
 - Phasing and timing of construction.

7.3 The Base Case

- 7.3.1 In the absence of an intervention, the base case for the project would comprise the continuation of ad hoc transport access provision to the area through service roads associated with individual developments. Should TANEMT not progress, it is expected that phasing of development within the study area will be constrained with limitations in the short term to sites in proximity to the existing road network as described in Section 6. The transport infrastructure associated with the base case will meet the requirements of individual developments, but is unlikely to provide for an efficient integrated network. This is based on lessons learnt from past developments and the example of Little Island described in Section 5.
- 7.3.2 The base case will need to be further developed within the next phase of appraisal for the project. At the Preliminary Business Case stage consideration should be given to undertaking an economic study to further develop an understanding of the base case. This is considered in the appraisal methodology set out in Section 9. The effort and expense incurred to prepare the economic study will need to be commensurate to the scale of the project.

7.4 TANEMT Do-Something Options

- 7.4.1 The identification of do-something options at the SAR stage is based on all the information available and presented in this document, particularly the significant work undertaken as part of MLUTS. The options identified are presented below.
- 7.4.2 Transport infrastructure in Monaghan is necessarily focused on the road network due to the lack of a rail network in the County. Re-opening former rail routes has however been considered in recent years. A consultation paper entitled '*Future land use Investment*' was published by Northern Ireland's Department for Regional Development in 2013. This included an option to reopen rail links from Armagh to Portadown. Costs were estimated at £11m/mile (€8.5m/km)⁵, not including stations or rolling stock. An initial appraisal concluded that the benefit/cost ratio was insufficient to warrant further detailed investigation.
- 7.4.3 As per the recently published NIFTI, maintaining and optimising the existing rail network takes priority over future extension plans. There are no current plans to extend the rail network to Monaghan and rail has not been considered further within the preparation of this SAR. It does however remain a National Policy Objective to work, 'In co-operation with relevant Departments in Northern Ireland, enhanced transport connectivity between Ireland and Northern Ireland, to include cross-border road and rail, cycling and walking routes, as well as blueways, greenways and peatways.'

7.5 Context for the Development of Options

- 7.5.1 The transport demand to be addressed would arise from development within the subject lands, the 87 hectares of land zoned for commercial development at Knocknacony, Tullyhirm and Annahagh in Monaghan Town. As outlined in Section 2, planning is already in place for an area to the west of the N2. This development would provide for access off the existing Annahagh roundabout. The 21 hectare area to the west of the N2 does not have the complication of multiple landowners and construction of access by a potential developer is feasible. Therefore, at this time no further intervention is considered necessary to provide accessibility to these lands. However, they are included in TANEMT study area so that the full impact of the future transport need of the area is taken into account and in case any change to their planned development should come about as the project progresses.
- 7.5.2 The subject lands are zoned for commercial use and given existing land use in the area, it is expected that some level of heavy industry will be developed at the location. Industrial and agri food development is on average higher in Monaghan than the national average as shown in Figure 1.4. It is an objective of the Northern & Western Regional Spatial and Economic Strategy (RPO 4.26) to Support the further development of AgInnovation clusters. The existing BioConnect innovation centre is located at Knocknacony.
- 7.5.3 There are currently no sites of adequate scale or suitable topography to accommodate large building footprints elsewhere in Monaghan Town. The lands at Knocknacony are of sufficient area and suitable topography to suit an agglomeration of different industrial uses at one location.

⁵ Source: 2013 NI DRD Paper - 'Future Railway Investment'

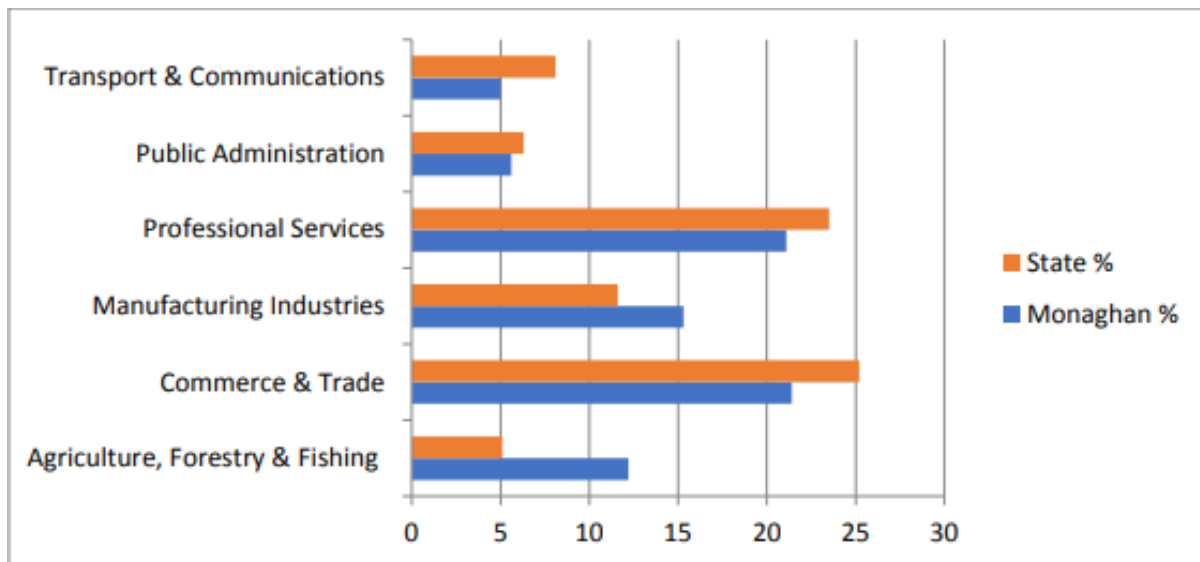


Figure 7.2 Profile of Employment Sectors (2011) (Source: Monaghan County Development Plan 2019-2025)

- 7.5.4 During the design and construction of the N2 by pass of the town, the **Annahagh** Roundabout was specifically installed to facilitate access to the lands either side of the by pass with the intention that they would be developed for industrial purposes. In formulating the most recent County Development Plan, it was considered that having regard to the historical industrial development located along the Armagh Road at Knockaconny, the ancillary industrial development that had developed adjacent to it **as well as** the more recent development of the large scale Combilift factory (which developed as a result of the purchase of these zoned lands by the company) and the facilitation of a specific access onto the N2 by pass, that these lands should be **continued to be** zoned for industrial development.
- 7.5.5 The development of heavy industry at this location has the advantage of HGV traffic not having to pass through the town centre with suitable access onto the N2 currently in place and Dublin being the ultimate destination for the majority of the HGV traffic.
- 7.5.6 For the reasons outlined, it is expected that an extent of heavy industry will be developed within the subject lands in future years and that it is necessary to design for the accommodation of HGV traffic within the development of options.

7.6 Wider Connectivity Issues

- 7.6.1 Beyond the study area vehicular traffic would continue to access the town centre predominantly via the national road network which runs through the town centre. There are also local roads from the town centre accessing the existing 21 ha of zoned land to the west of the N2 Monaghan town Bypass.
- 7.6.2 Industrial development at the Knockaconny site is considered the preferred location following the Monaghan Land Use and Transport Study in 2018. The majority of HGV traffic from these industrial sites would not need to pass through the town centre as their ultimate destination is the national road network. Reducing HGV traffic in the town centre is a priority for Monaghan county council. Reduction in traffic in the town centre particularly HGVs contribute to poor air quality and noise pollution within the town centre as well as increased carbon emissions due to increased traffic congestion in the town centre. Currently industrial development to the west of Monaghan town along the N54 has added to traffic issues in the Monaghan town centre as increased HGV traffic is passing through the town centre to reach the N2 to the east of Monaghan town.

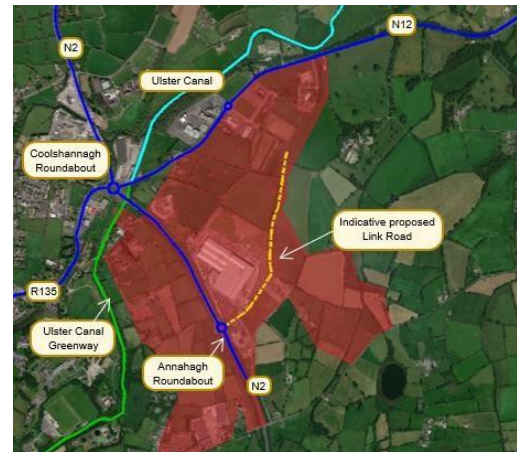
DO-SOMETHING OPTION 1 - SPUR ROAD FROM ANNAHAGH ROUNDABOUT

Route description

The adjacent figure shows an indicative alignment of a potential access road connecting the zoned employment lands to the N2 at the existing Annahagh Roundabout.

In Option 1, transport access would be provided to all development lands at Knockaconny/ Annahagh/ Tullyhirm, with the majority of future development accessing via the Annahagh Roundabout.

No new through connection will be available through the study area between the N2 and N12.



Cross Section

The adjacent figure illustrates the indicative cross section of the transport access provided for under Option 1. In accordance with the Design Manual for Urban Roads and Streets, it is proposed that the carriageway width would be 7.0 metres, reflecting the likely use by Heavy Goods Vehicles. To improve connectivity for active modes, the route would include provision for segregated cycle facilities including a landscape strip to separate vehicle movement from pedestrians and cyclists.



Access Strategy

Under Option 1, all traffic accessing the employment lands will do so via the Annahagh roundabout on the N2. The Annahagh Roundabout will be upgraded to improve safety for walking and cycling and will incorporate a safe crossing of the N2 linking the site to the wider Monaghan Town active travel network. Whilst consideration will be given to the potential provision of bus stops along the link road, it is unlikely to be efficient to operate bus services without a through route. The internal junction strategy will be subject to a future masterplan.

Phasing and Dependencies

The access route proposed under Option 1 has no dependencies and could be delivered in a single phase or on a phased basis commencing from the Annahagh Roundabout. The route would benefit from the early delivery of active travel infrastructure across the N2 linking the development site to Monaghan Town and the existing Ulster Canal Greenway.

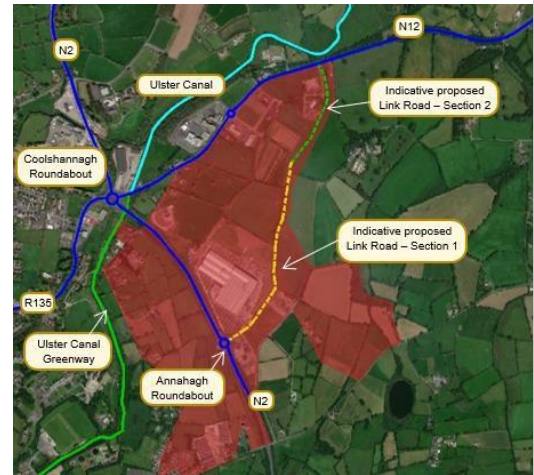
NIFT	Modal	Active Travel	✓	This option does support integration with active mode infrastructure plans along the N2. There would be no change in the active travel linkages to the lands along the N12.
		Public Transport	x	No provision for through bus services will limit public transport potential.
		Private Vehicles	✓	Traffic management along the N12 is unchanged. New transport access is provided to the study area.
NIFT	Intervention	Maintain	x	No impact
		Optimise	x	No impact
		Improve	x	No impact
		New	✓	Although limited, this option will comprise new infrastructure

DO-SOMETHING OPTION 2 - N2 N12 LINK ROAD EASTERN ROUTE

Route description

The adjacent figure illustrates an indicative alignment of a potential Link Road connecting the zoned employment lands to both the N2 at the existing Annahagh Roundabout and the N12 adjacent to the “Monaghan mushrooms” premises, approximately 1.2km to the east of the Coolshannagh Roundabout.

In Option 2, the transport access route would serve all development lands at Knockaconny/ Annahagh/ Tullyhirm and would permit through movements for all transport modes between the N2 and N12



Cross Section

The adjacent figure illustrates the proposed cross section of the link road proposed under Option 2. In accordance with the Design Manual for Urban Roads and Streets, it is proposed that the carriageway width would be 7.0 metres, reflecting the likely use by Heavy Goods Vehicles. To improve connectivity for active modes, the route would include provision for segregated cycle facilities along its entire length, including a landscape strip to separate vehicles from pedestrians and cyclists.



Access Strategy

Under this option, traffic accessing the employment lands will be able to do so via the Annahagh roundabout on the N2 or from the N12 Armagh Road. The Annahagh Roundabout will be upgraded to improve safety for walking and cycling and will incorporate a safe controlled crossing of the N2 linking the site to the wider Monaghan active travel network. The junction on the N12 would be situated outside of Monaghan Town in the 100kph speed limit area. The design of this access point would need to be examined in consultation with TII and in accordance with TII’s design requirements. Bus stops will be provided along the link road. The access strategy will be subject to a future masterplan.

Phasing and Dependencies

The southern section of the access route proposed under Option 2 has no dependencies and could be delivered in a single phase or on a phased basis commencing from the Annahagh Roundabout. The junction on the N12 Armagh Road utilises an existing access road. This will need agreement from third parties and will need to be delivered in close consultation with TII.

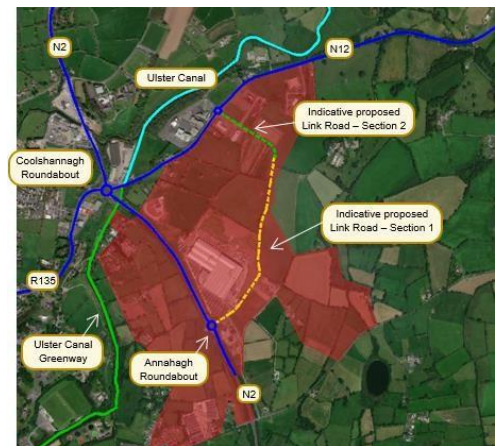
NIFT Modal Interactions	Active Travel	✓	Integration with surrounding active mode networks is facilitated extending between the N2 and N12 through the subject lands. The access on the N12 is somewhat removed from existing infrastructure
	Public Transport	✓	A through route could facilitate the introduction of future bus services.
	Private Vehicles	✓✓	Greater transport access for private vehicles is provided compared to Option 1
NIFT Intervention	Maintain	✗	No impact
	Optimise	✓	Having access from the development lands to both the N2 and N12 will provide for more traffic management options to optimise the network performance.
	Improve	✗	No impact
	New	✓✓	A new link would be provided within the study area.

DO-SOMETHING OPTION 3 - N2 N12 LINK ROAD WESTERN ROUTE
Route description

Similar to Option 2, Option 3 would connect the zoned employment lands to both the N2 and the N12 Armagh Road. In Option 3, the connection with the N12 would be via the existing 4 arm roundabout at the entrance to M Tek 2 and Monaghan Education Campus, which is situated approximately 700m to the east of the Coolshannah Roundabout.

The route would serve all development lands at Knockaconny/ Annahagh/ Tullyhirm and would permit through movements for all transport modes between the N2 and N12.

The topography along this route is challenging and a fuller feasibility study would be required to ensure that it is reasonably achievable.


Cross Section

The adjacent figure illustrates the cross section of the link road proposed under Option 3. In accordance with the Design Manual for Urban Roads and Streets, it is proposed that the carriageway width would be 7.0 metres, reflecting the likely use by Heavy Goods Vehicles. To improve connectivity for active modes, the route would include provision for segregated cycle facilities including a landscape strip to separate vehicle movement from pedestrians and cyclists.


Access Strategy

Under this option, traffic accessing the employment lands will be able to do so via the Annahagh roundabout on the N2 or from the N12 Armagh Road. The Annahagh Roundabout will be upgraded to improve safety for walking and cycling and will incorporate a safe controlled crossing of the N2 linking the site to the wider Monaghan Town active travel network. The junction on the N12 will also be upgraded to connect the existing cycle facilities on the N12 to the cycle facilities on the proposed Link Road.

Bus stops will be provided along the link road. The internal junction strategy will be subject to a future masterplan.

Phasing and Dependencies

The southern section of the access road proposed under option 3 has no dependencies and could be delivered in a single phase or on a phased basis commencing from the Annahagh Roundabout. The junction on the N12 Armagh Road utilises an existing 4 arm roundabout. Access from this roundabout will need to be examined in consultation with all adjoining parties.

NIFT	Active Travel	✓	Integration with surrounding active mode networks is facilitated with potential connectivity with existing and proposed infrastructure on both the N2 and N12.
	Public Transport	✓	A through route could facilitate the introduction of future bus services.
	Private Vehicles	✓✓	Greater transport access for private vehicles is provided compared to Option 1
NIFTI Intervention	Maintain	x	No impact
	Optimise	✓	Having access from the development lands to both the N2 and N12 will provide for more traffic management options to optimise the network performance.
	Improve	x	No impact
	New	✓✓	A new link would be provided within the study area.

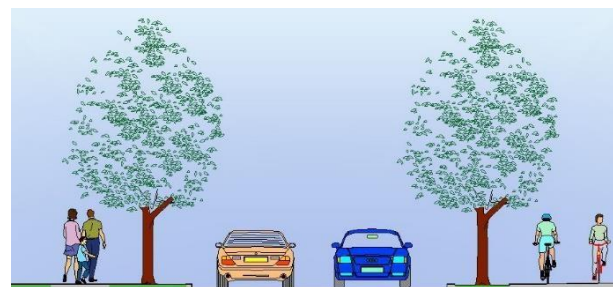
DO-SOMETHING OPTION 4 - N12 ACCESS ONLY
Route description

The adjacent figure illustrates Option 4 whereby the zoned employment lands are primarily access from the N12 Armagh Road.

In this option, the route would serve all development lands at Knockaconny/ Annahagh/ Tullyhirm, terminating at the south western edge of the zoned lands with no through connection provided to the Annahagh roundabout on the N2.


Cross Section

The adjacent figure illustrates the cross section of the link road proposed under Option 4. In accordance with the Design Manual for Urban Roads and Streets, it is proposed that the carriageway width would be 7.0 metres, reflecting the likely use by Heavy Goods Vehicles. To improve connectivity for active modes, the route would include provision for segregated cycle facilities including a landscape strip to separate vehicle movement from pedestrians and cyclists.


Access Strategy

Under this option, a proportion of traffic will continue to access the employment sites situated to the south of the site from the Annahagh roundabout on the N2, however the majority of traffic accessing the employment lands will do so via the N12 Armagh Road Roundabout.

The junction on the N12 will be upgraded to connect the existing cycle facilities on the N12 to the cycle facilities on the proposed Link Road. Whilst this option does not include for the extension of the access road from the Annahagh roundabout on the N2, it is still recommended that the Annahagh Roundabout be upgraded to improve safety for walking and cycling and provide a safe crossing of the N2 linking the site to the wider Monaghan Town active travel network.

Phasing and Dependencies

The junction on the N12 Armagh Road utilises an existing 4 arm roundabout. Access from this roundabout will need to be examined in consultation with all adjoining parties.

NIFT Modal	Active Travel	x	This option does not support integration with active mode infrastructure plans along the N2.
	Public Transport	x	No provision for through bus services will limit public transport potential.
	Private Vehicles	✓	Traffic management along the N2 is unchanged. New transport access is provided to the study area.
NIFT Intervention	Maintain	x	No impact
	Optimise	x	No impact
	Improve	x	No impact
	New	✓	Although limited, this option will comprise new infrastructure

DO-SOMETHING OPTION 5 – ACCESS FROM N12 AND N2 BUT NOT LINKED

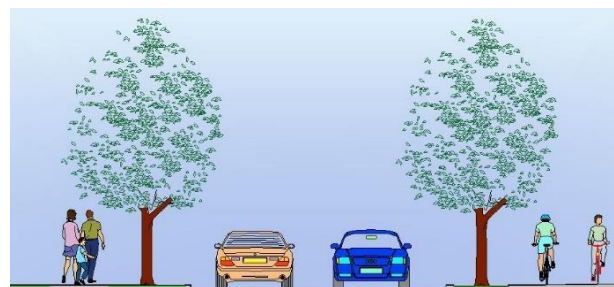
Route description

Option 5 comprises the possibility of servicing the employment lands from both the N2 and the N12, but not providing a continuous vehicular link between the two National Roads. The adjacent illustrates the indicative alignment of the two access roads, with the southern access being provided from the existing Annahagh Roundabout on the N2 and the northern access via the existing 4 arm roundabout at the entrance to M Tek 2 and Monaghan Education Campus.



Cross Section

The adjacent figure illustrates the cross section of the link route proposed under Option 5. In accordance with the Design Manual for Urban Roads and Streets, it is proposed that the carriageway width would be 7.0 metres, reflecting the likely use by Heavy Goods Vehicles. To improve connectivity for active modes, the route would include provision for segregated cycle facilities including a landscape strip to separate vehicle movement from pedestrians and cyclists.



Access Strategy

Under Option 5, the chosen access route for employees will be determined by their place of employment. Employees based in the southern portion of the site will access from the Annahagh roundabout on the N2 and employees based to the north of the site will access via the N12/Armagh Road Roundabout. Whilst this option does not include for a continuous vehicular link between the N2 and the N12, it is recommended that walking and cycle facilities be provided along its entire length to improve permeability for active modes.

Phasing and Dependencies

The southern section of the access road proposed under Option 5 has no dependencies and could be delivered in a single phase or on a phased basis commencing from the Annahagh Roundabout. The junction on the N12 Armagh Road utilises an existing 4 arm roundabout. Access from this roundabout will need to be examined in consultation with all adjoining parties.

NIFT Modal Hierarchy	Active Travel	x	This option does not fully support integration with active mode infrastructure plans along the N2
	Public Transport	x	No provision for through bus services will limit public transport potential.
	Private Vehicles	✓	New transport access is provided to the study area, but not through it
NIFTI Intervention	Maintain	x	No impact
	Optimise	✓	Having access from the N2 and N12 will support some optimization of the network.
	Improve	x	No impact
	New	✓✓	Two new links will be provided to the study area

DO-SOMETHING OPTION 6 – ACCESS FROM N12 AND N2 BUT NOT LINKED – BUT ONLY FOR BUSES (BUS GATE OPTION)

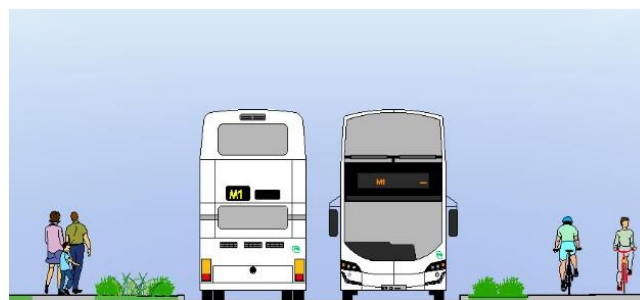
Route description

Building upon Option 5, Option 6 examines the possibility of servicing the employment lands from both the N2 and the N12 but restricting private vehicular access between the two National Roads. Under this option continuous access will be permitted for public transport through the activation of a bus gate centrally positioned along the access road. The adjacent figure illustrates the indicative alignment of the two access roads from the N2 and N12, and the potential location of the bus gate.



Cross Section

The adjacent figure illustrates the cross section of the link route proposed under Option 6. Designed in accordance with the Design Manual for Urban Roads and Streets this option incorporates a bus along the link road to enable through running for buses. Segregated cycle facilities are provided including a landscape strip to separate pedestrians and cyclists.



Access Strategy

Under Option 6, general traffic accessing the employment lands will do so via the Annahagh roundabout on the N2 or via the Armagh road on the N12. Both the Annahagh Roundabout and the N12 roundabout will be upgraded to improve safety for walking and cycling and improved connectivity with the wider Monaghan Town active travel network. Bus stops will be provided along the link road and there would be provision for a through bus route. The internal junction strategy will be subject to a future masterplan.

Phasing and Dependencies

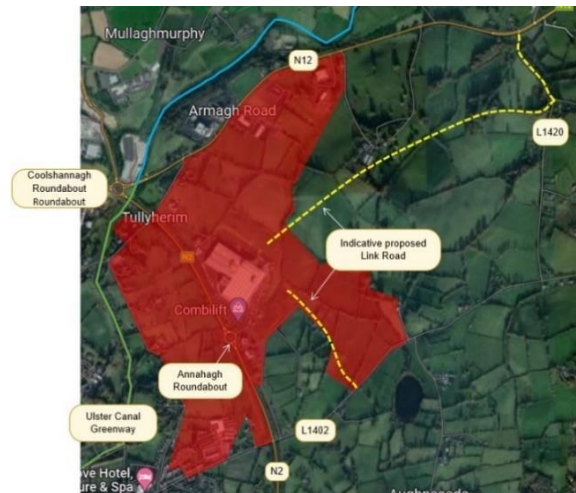
The southern section of the access road proposed under Option 6 has no dependencies and could be delivered in a single phase or on a phased basis commencing from the Annahagh Roundabout. The junction on the N12 Armagh Road utilises an existing 4 arm roundabout. Access from this roundabout will need to be examined in consultation with all adjoining parties.

NIFT Modal	Active Travel	✓	Integration with surrounding active mode networks is facilitated.
	Public Transport	✓✓	A through route could facilitate the introduction of future bus services, along with bus priority
	Private Vehicles	✓	New transport access is provided to the study area, but not through it
NIFT Intervention	Maintain	✗	No impact
	Optimise	✓	Having access from the development lands to both the N2 and N12 will provide for more traffic management options to optimise the network performance.
	Improve	✗	No impact
	New	✓✓	A new link will be provided through the study area, although traffic management will limit through traffic

DO-SOMETHING OPTION 7- ACCESS OFF OF LOCAL ROAD NETWORK (L1420)

Route description

Option 7 would test the feasibility of providing access to the employment lands via the existing local road network instead of the N2 and the N12. The adjacent figure illustrates an indicative alignment of a proposed access road connecting the southern section of the employment lands to the L1402 (Old Armagh Road). An additional access point would be provided to the east of the employment lands from the L1420 local road, which joins the N12 Armagh Road approximately 2.2km from the Coolshannagh Roundabout.



Cross Section

The adjacent illustrates the cross section of the proposed two link roads internal to the employment lands. In accordance with the Design Manual for Urban Roads and Streets, it is proposed that the carriageway width would be 7.0 metres, reflecting the likely use by Heavy Goods Vehicles. To improve connectivity for active modes, the route would include provision for segregated cycle facilities including a landscape strip to separate vehicle movement from pedestrians and cyclists.



To the east of the N2 crossing, the prevailing width of the L1402 (Old Armagh Road) is 4.0 to 4.5 metres with no provision for pedestrians and cyclists. The width of the L1420 is less than 4.0 metres and also has no footpaths or cycle facilities.

The width of the L1420 is less than 4.0 metres and also has no footpaths or cycle facilities.



View northwards along the L1420



View westwards along the L1420

Access Strategy

Under this option, all traffic accessing the employment lands will do so via the L1420 from the N12 or via the L1402 Old Armagh Road which connects to Monaghan Town under the N2 bypass. Substantial improvements would be required to both local roads to facilitate safe access to the employment lands for all road users.

Phasing and Dependencies

The provision of both access routes identified above would require widening and extensive improvements to the local road network to facilitate safe passage for existing road users and visitors to the employment lands. The delivery of these works would necessitate the acquisition of third-party land and substantial engineering works. This option is not considered practically feasible

8. SAR COST & AFFORDABILITY CONSIDERATIONS

8.1 Understanding of Costs at SAR Stage

- 8.1.1 The cost of providing TANEMT 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 €10 million to €20 million range based on providing comprehensive access through the study area with access to both the N2 and N12.
- 8.1.2 At this stage, high level total scheme budget estimates based on per kilometre cost sources have been prepared. The Monaghan County Development Plan has included a 100m protected corridor within the zoned lands to facilitate a transport access solution. This would help minimise land acquisition costs. Options 1 to 6 are major offline solutions and are estimated at between €6.4m to €13.1m per kilometre. Option 7 would be a major online upgrade and is estimated at €5m to €7m per kilometre. More accurate cost estimates for each option will need to be addressed at the Preliminary Business Case stage following further design work.
- 8.1.3 The approach to appraisal is to ensure an appropriate level of analysis proportional to the cost outlay. Whilst there is a possibility that the outturn costs will be below €10 million, it is considered prudent to undertake an appraisal aligned with projects valued in the higher band.
- 8.1.4 It should be noted that there is a high degree of uncertainty at this early stage in the development of the programme. In due course, through further design work, cost estimates will be refined, with the Preliminary Business Case being a key step in determining a more precise set of costs to support the Public Spending Code Gate 2 approval and a move towards tendering. Should the project progress towards delivery, post-PBC refinements to the scheme, the tendering processes and any planning conditions imposed on the project components, will all feed through periodic reviews to further update and refine the cost information that will be used in the Final Business Cases or interim releases of the Final Business Cases.

8.2 Assessment of Affordability and Availability of Funding at SAR stage

- 8.2.1 The improvement and maintenance of regional and local roads is the statutory responsibility of each local authority in accordance with the provisions of Section 13 of the Roads Act 1993. Works on those roads are funded from local authorities' own resources supplemented by State road grants.
- 8.2.2 In February 2022, Minister for Transport, Eamon Ryan, announced a €597 million investment programme for 2022 for regional and local roads. The funding package will allow approximately 3,100kms of roads to be maintained and 2,550kms to be strengthened. As part of the programme, the N2 to N12 Link road was allocated €100,000 in funding under the category of strategic regional and local roads.
- 8.2.3 The project affordability and funding will be driven by the timing of investment requirements. At this early stage, the indication is that TANEMT will incur costs of similar order of magnitude to the costs of delivering local road provisions.
- 8.2.4 It is anticipated that the infrastructure will be part funded through developer contributions, reducing the funding burden on the exchequer. The General Development Contributions Scheme 2021-2026 Appendix 1 allows for a 10% local contribution of the projected project total cost. For each development this would be recouped by a contribution per m² of development (€5 per m²) or via a percentage contribution of land made accessible. It is envisaged that the project total cost would be €7.3m and that 260,000m³ of development floor space could be developed which would provide developer contributions of €1.3m. In summary it is anticipated that between 10% and 17.8% could be recouped through developer contributions.



- 8.2.5 The phasing of the project will be considered in more detail in the preliminary business case. At this SAR 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 Monaghan Development Plan. An opening year in advance of 2025 would provide the best opportunity to maximise the potential benefits of increased demand post Brexit and to capture changes in travel behaviours as we exit the COVID-19 pandemic.

9. APPRAISAL METHODOLOGY

9.1 Programme and Project Appraisal Guidance

- 9.1.1 The PSC sets out the rules and guidelines that all public bodies must follow when considering, incurring, or monitoring expenditure. The business case describes the proposed project, establishes the rationale for it and informs the decision on whether or not to proceed with it, with this SAR forming the first stage in that process. The business case will require an expansion of the strategic case set out in this SAR for inclusion in the Preliminary Business Case (and Stage Gate 1). Further updates and more detailed appraisals are required for FBC (and the pre-tender Stage Gate 2 and post-tender Stage Gate 3).
- 9.1.2 The Department of Transport's Common Appraisal Framework (CAF), guides the appraisal of transport investments and is consistent with the PSC. It also elaborates on the PSC in respect of the appraisal of transport projects and programmes to assist scheme promoters in constructing robust and comparable business cases for submission to Government. Following the publication of the National Investment Framework for Transport in Ireland (NIFTI), interim guidance was issued by the Department of Transport on the alignment of land transport investment proposals with NIFTI. This will need to be followed when submitting appraisal documentation.

9.2 Initial Consideration of Appraisal Approach

- 9.2.1 The appraisal approach will be proportionate to the scale of investment with the level of detail required dependent on the level of expenditure required as required by the Common Appraisal Framework (CAF). The appraisal will use the most up to date version of the CAF guidance. At present, projects with estimated project costs of €10 to €20 million require the following scale of appraisal:
- Strategic Assessment Report – DG0 (this document)
 - Preliminary Business Case – DG1 and Final Business Case – DG 3 including detailed appraisal with Multi Criteria Analysis
- 9.2.2 It is recognised in CAF not all costs and benefits of transport projects can be monetised and that qualitative analysis should be used to assess and report the impact of investment on key government objectives for transport, using a Multi Criteria Assessment framework approach. It is noted that the qualitative impacts identified in the appraisal should be presented in a Project Appraisal Balance Sheet covering the following key criteria:
- Economy;
 - Integration;
 - Accessibility and Social Inclusion;
 - Environmental;
 - Safety and Security; and
 - Physical Activity.
- 9.2.3 The key criteria have been taken into account within the identification of objectives for the project. Evaluation of options against the objectives will include assessment under each criteria. Using the initial list of Key Performance Indicators set out in Section 12 of this SAR, the appraisal methodology will be developed to allow for the performance of each option to be scored against each objective on a 7 point scale with the level of impact being:
- Major or highly negative – 1 point
 - Moderately negative – 2 points
 - Minor or slightly negative – 3 points
 - Not significant or neutral – 4 points
 - Minor or slightly positive – 5 points
 - Moderately positive – 6 points
 - Major or highly positive – 7 points

- 9.2.4 Given the level of expenditure, quantitative Cost Benefit Analysis (CBA) or Cost-Effectiveness Analysis (CEA) is not expected to be required. However this does not preclude the sponsoring agency from carrying out these forms of analysis for projects valued below the threshold. Furthermore, the Department of Transport may request that a CBA or CEA is carried out at future decision gates. The need for quantitative CBA or CEA should be kept under review.

9.3 Consideration of Appraisal Tools

- 9.3.1 To inform the multi-criteria assessment it would be beneficial to build on the analysis undertaken within the MLUTS. Updated traffic count data will be required to take into account changes in demand, particularly as activities adjust to the removal of COVID-19 measures.

Traffic Modelling

- 9.3.2 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.
- 9.3.3 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.

Accessibility Tools

- 9.3.4 GIS based analysis would allow for an assessment of accessibility in the absence of area wide transport modelling.

Economic Appraisal of Active Modes

- 9.3.5 TII have developed the Tool for Economic Appraisal of Active Modes (TEAM), an excel based tool for undertaking a CBA of active mode schemes. It can quickly estimate the main benefits associated with increased levels of walking and cycling or improved infrastructural quality, including Health, Mode Shift, Journey Time, Journey Quality and Recreation benefits.

Transport Infrastructure Ireland's Simple Appraisal Tool

- 9.3.6 Consideration should be given to the use of other appropriate tools such as TII's Simple Appraisal Tool. This is an automated spreadsheet based appraisal tool to allow for the economic appraisal of online and/or offline improvements to sections of the road network.

Assessment of Greenhouse Gas Emissions

- 9.3.7 The assessment of greenhouse gas emissions impact will be informed by the modelling tools developed. Estimates derived from available analysis on trip volumes, trip lengths, mode share etc will inform the assessment. The approach will need to be agreed with the sponsoring agency. The availability of newly developed tools should be considered and/or a bespoke spreadsheet based approach.

9.4 Supplementary Economic Considerations

- 9.4.1 A key component of the project will be to facilitate development that supports employment and local economic activity. Therefore, in addition to the core transport related economic benefits, there will likely be benefits to the general economy and, in particular, the utilisation and land value within the study area.

- 9.4.2 The UK's Transport Appraisal Guidance (TAG) sets out a methodology to value dependent developments, termed Land Value Uplift. Land Value Uplift captures the following impacts: user benefits, land market distortions and other wider economic impacts such as agglomeration economies that occur within the dependent development in the study area. However, it is recognised that there are challenges in quantifying supplementary economic considerations such as Land Value Uplift. In the UK guidance, therefore, land value uplift is only included as sensitivity analysis within the value for money assessment. TAG Unit A2.2 contains details of the appraisal of induced investment impacts.
- 9.4.3 Whilst recognising the difficulty in determining supplementary economic impacts, given the primary rationale for the project to facilitate development within the study lands, it is recommended that consideration should be given to capturing the undoubted supplementary economic benefits of access provision to the subject lands in North East Monaghan Town. This will potentially be achieved through a qualitative assessment, but may benefit from a more comprehensive economic study. This would likely entail analysing descriptive statistics for the local economy (e.g. unemployment rates), interviews with stakeholders to ascertain how they will respond to the transport improvements and consideration of local growth and development plans.

9.5 Cost Preparation

- 9.5.1 For the Preliminary Business Case, 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.

9.6 Financial Appraisal

- 9.6.1 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.
- 9.6.2 Financial indicators should as the Net Present Value (NPV) and Internal Rate of Return (IRR) should be clearly identifiable.

9.7 Sensitivity Testing

- 9.7.1 Sensitivity testing will need to be undertaken as part of the Preliminary Business Case in line with the requirements of the Common Appraisal Framework. Scenarios with low levels of take-up/development of the zoned lands, including a ‘worst-case’ scenario with low economic activity and high scheme costs, must be explored as part of this sensitivity analysis within the PBC.

COVID-19 Impacts on the Project Appraisal

- 9.7.2 In addition to a series of established sensitivity analysis that will be required, the appraisal should also consider the sensitivity to the potential impacts of COVID-19. This will reference any specific guidance offered by the NTA/TII or others on handling medium and longer-term impacts on travel volumes that could impact on transport demand and wider economic benefits.



10. PROJECT GOVERNANCE

10.1 Proposed Governance Arrangements

10.1.1 The PSC 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.

Approving Authority

10.1.2 The Approving Authority is normally the Government Minister, Department or Public Body with responsibility for implementing 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. In the case of TANEMT, a non-National Roads Project, 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 business case & development proposals, issuing approvals, overseeing steering group, assessing changes and reviews.

Sponsoring Agency

10.1.3 The Sponsoring Agency is the Local Authority that requires the Project to be undertaken in this case Monaghan 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.

Project Manager – Designers Representative

10.1.4 The Designer will employ a Lead Technical Advisor who will act as Project Manager to ensure that the Project is delivered on time, to budget and to the required standards and specifications. The Project Manager will carry out the activities required of the Project Co-ordinator as detailed within the Capital Works Management Framework (CWMF).

Project Coordinator

10.1.5 The Senior Engineer within MCC Roads Office will be appointed to the role of Project Coordinator with responsibility for the execution of decisions taken by the Sponsoring Agency regarding delivery, quality and budget.



10.2 Stakeholders

10.2.1 As per the PSC, the governance structure, to be further developed within the Preliminary Business Case, will need to establish the relationship between all parties to the project including key stakeholders, described as “public service delivery personnel and end users”.

10.2.2 The following stakeholders have been identified at this early SAR stage:

- Monaghan County Council;
- Department of Transport;
- Transport Infrastructure Ireland;
- National Transport Authority;
- Northern and Western Regional Assembly;
- Office of the Planning Regulator;
- IDA Ireland;
- Enterprising Monaghan;
- Businesses already established in the vicinity and businesses wishing to establish in the subject lands;
- Ulster Canal Greenway (the five local authorities along the Ulster Canal corridor and Waterways Ireland);
- Local stakeholders such as landowners, Monaghan Education Campus, other relevant large employers, business groups, disability advocacy groups, transport interest groups.

10.2.3 As the business case progresses, the list of key stakeholders may expand.



11. PROJECT RISK AND RISK MANAGEMENT

11.1 Introduction

- 11.1.1 The management of risk is key to the success of any project. One of the key functions of the business case process is to identify and start to manage project delivery risk in all its forms. An outline assessment of project risk is required at this SAR stage, progressively refining risk as projects move through the business case stages, initially at the Preliminary Business Case (PBC) stage and on to further approvals and towards implementation.
- 11.1.2 It will be the responsibility of the Sponsoring Agency to maintain a risk register for the project and ensure that risks are suitably addressed through risk management and mitigation plans.

11.2 Initial Risk Assessment

- 11.2.1 The risk assessment that will be required in due course for the Preliminary Business Case will need to consider the full range of technical delivery risks, such as construction management and operating risks, as well as non-technical risks around project design and implementation. Planning, funding and delivery risks can be critically important in the project lifecycle and to the overall success of the project.
- 11.2.2 In developing the more detailed risk assessment for the PBC, the following key delivery risks will require further consideration:
- Internal Monaghan County Council and Department of Transport capability (resource availability) and governance structures;
 - Third party stakeholders, including engagement and communications;
 - Design and scope change, including changes in policy, regulations, design/environmental guidance and changes arising from consultation and planning conditions;
 - Cost increases from scope changes, materials and other resource availability and inflation;
 - External economic conditions and impact on commercial development;
 - External risks resulting in lower than expected development including the potential impact of construction cost inflation, lack of skilled labour, or increased working from home;
 - Procurement strategy and market interest;
 - Financial funding and availability;
 - Project implementation and delivery management, including resources, products and materials, construction, health and safety; and
 - Operation and maintenance, including safety.
- 11.2.3 For the PBC each of the headline risk areas identified above should be developed further to identify key drivers, including interactions between key risks, an outline risk rating for both 'impact' and 'probability' and potential mitigation measures. Ongoing updating of the risk register will be required as the project moves through the Gate approvals processes.



12. FRAMEWORK FOR DETERMINING KEY PERFORMANCE INDICATORS

12.1 Key Performance Indicators Identified

12.1.1 In the preparation of this SAR, Key Performance Indicators have been identified through the Logic Path Modelling introduced in Section 3. The KPIs identified are presented within the Logic Path Modelling framework shown in Figure 12.1. These KPIs will be reviewed at the Preliminary Business Case stage and will inform the evaluation process. Many of the KPIs are linked to standard data sets, particularly the travel data collected within the Census such as mode share to work and would be useful for long term post implementation evaluation. The identified KPIs are:

- Area (hectares) of zoned land accessible from the transport network
- Number of jobs within the study area
- Commute journey times
- Accessibility to employment / workforce – working age population within 5km
- Cycle and pedestrian network development – length of quality infrastructure
- Mode share to work
- Commute vehicle kilometres
- Delay at key junctions on the national road network
- Accident reduction impacts
- Project costs, phasing and funding profile.

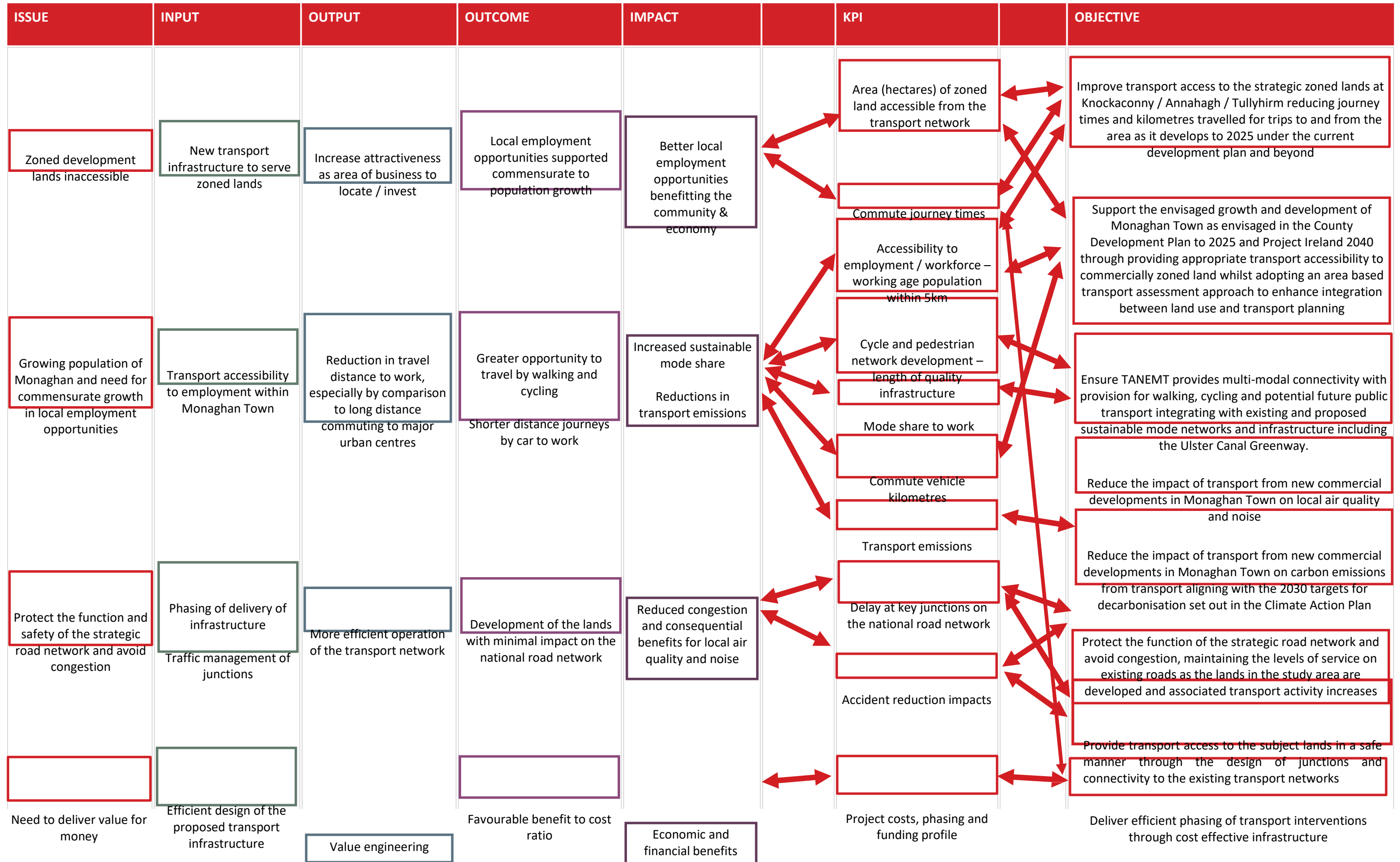


Figure 12.1 Key Performance Indicator Framework

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