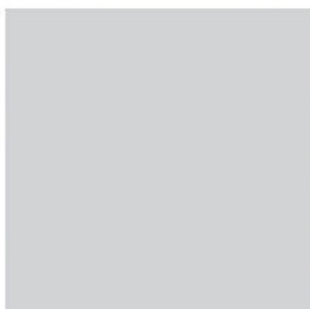


## Mid West National Road Design Office

### Project Brief

### Foynes to Limerick Road Improvement Scheme



<b>PRS Reference:</b>	LC/14/10965
<b>Phase:</b>	2 - Route Selection
<b>Issue Date:</b>	17-02-2016

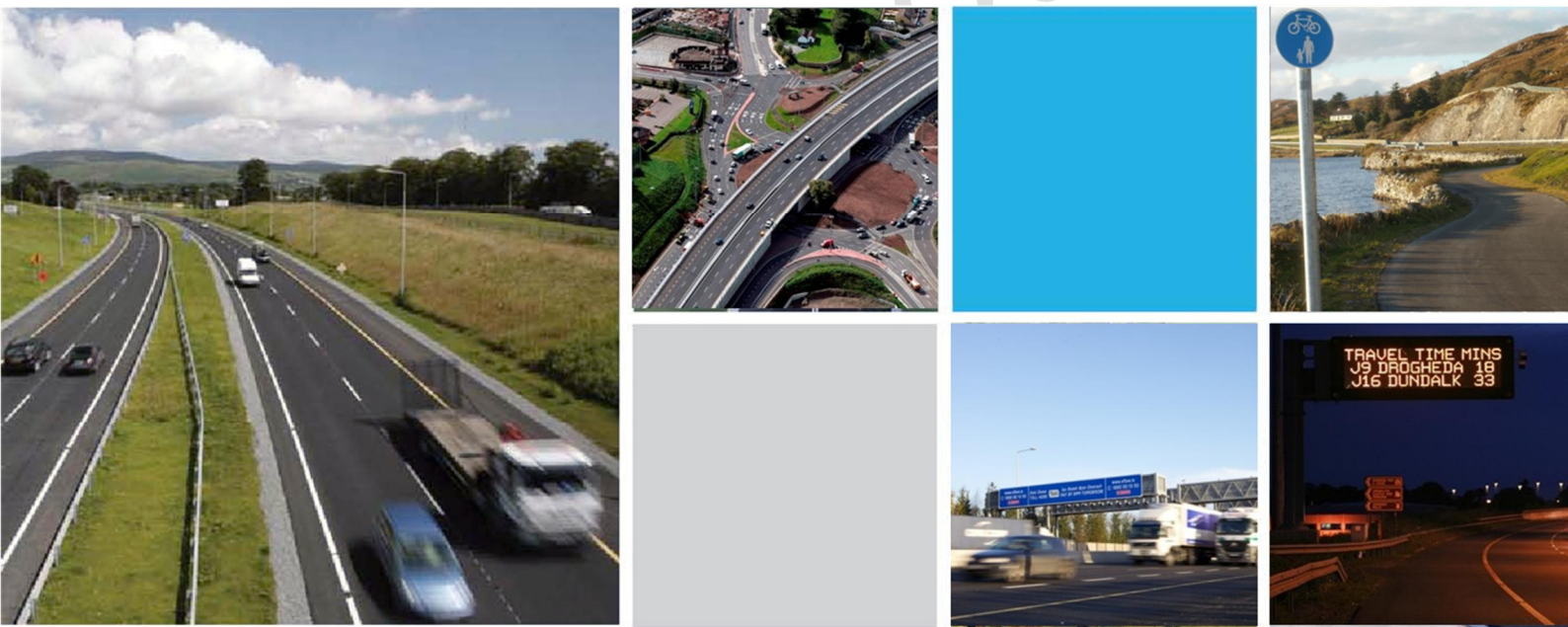
# Foynes to Limerick Road Improvement Scheme

## Project Brief

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## Chapter 1 Introduction



# 1 Background

## 1.1 Overview

In accordance with the requirements of Transport Infrastructure Ireland (TII) National Road Project Appraisal Guidelines (*PAG Unit 3.0: Project Brief*) and the “*Public Spending Code*” (Department of Public Expenditure and Reform), a Project Brief represents an important deliverable of the Project Appraisal process.

The purpose of the Project Brief is to outline the need for an investment, explore the supporting policy documentation, and outline the particular issues that a project is intended to address. The Project Brief then guides the subsequent scheme development process. This document presents the Phase 2 (Route Selection) Project Brief for the Foynes to Limerick Road Improvement Scheme.

## 1.2 History of the Project

The proposed scheme for an improved road between Foynes and Limerick arises from the Trans-European Transport Network (TEN-T) requirements to provide a road that meets the standard defined by the TEN-T between the Port of Foynes and the Core transport network in Ireland and the European Union. On the 11<sup>th</sup> of December 2013 Regulation (EU) No 1315/2013 was brought into effect, this defines and provides legal guidance for the provision of the TEN-T.

Prior to the TEN-T requirements for an improved road between Foynes and Limerick, particular upgrades to roads in the vicinity of the Foynes - Limerick corridor included the following proposed improvements and road projects:

### 1.2.1 N69 Foynes – Limerick

Online improvements to the N69 between Foynes and Limerick were identified in the NRA National Secondary Roads Needs Study published in 2011. The study identified deficiencies within the individual lengths of the route and provided a range of proposals for dealing with these deficiencies. The N69 was identified as requiring improvements along most of its length with specific upgrades recommended between Foynes and Limerick as follows:

- Foynes to Askeaton Bypass - Upgrade to Type 2 Single Carriageway<sup>1</sup>;
- Askeaton Bypass to Kilcornan - Upgrade to Type 2 Single Carriageway; and
- West of Kilcornan to Mungret (with bypasses of Kilcornan, Kildimo & Clarina) - Upgrade to Type 1 Single Carriageway.

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<sup>1</sup> A Type 2 Single Carriageway consists of a 7.0m carriageway (2 x 3.5m lanes) with 0.5m hard strips. A Type 1 Single Carriageway consists of a 7.3m carriageway (2 x 3.6.5m lane) with 2.5m hard shoulders.

### *1.2.2 M20 Cork – Limerick Motorway*

The proposed M20 Cork to Limerick Motorway scheme involved approximately 80 kilometres of new motorway between Cork and Limerick. The scheme had been developed through to EIS and Motorway Order stage and submitted to An Bord Pleanála. The oral hearing for the scheme was held in 2010, however the project was withdrawn from planning in November 2011 due to lack of available government funding prior to the decision on the scheme.

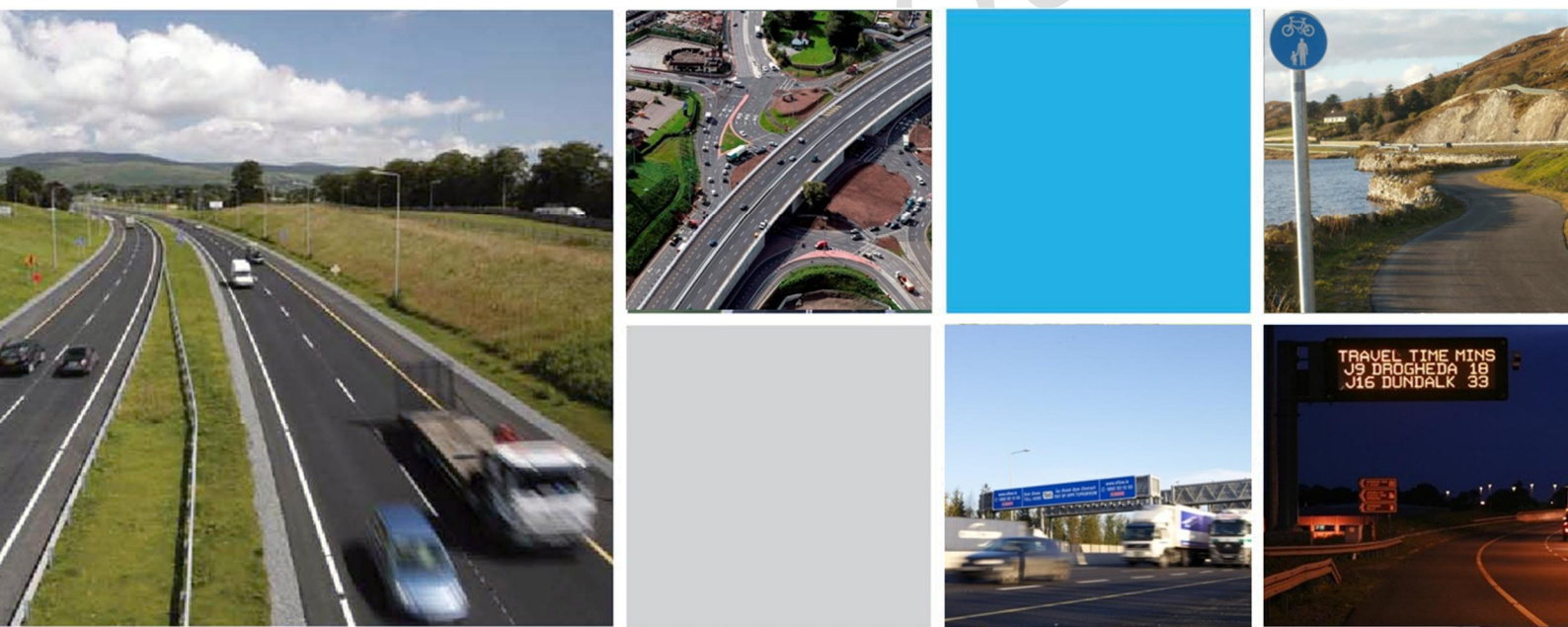
### *1.2.3 N21 Adare Bypass*

The Adare Bypass scheme involved a Type 2 Dual Carriageway southerly bypass of the village of Adare connecting to the proposed M20 Route at its eastern end and tying in to the existing N21 at its western extent over a length of approximately 8.5 kilometres. The scheme was refused planning by An Bord Pleanála in October 2012, citing the withdrawal of the M20 Cork to Limerick scheme as the primary reason for refusal.

### *1.2.4 N21 Abbeyfeale to Adare*

This proposed project involved the upgrading of a 45 kilometre section of the existing N21 from just west of Abbeyfeale to just west of Adare and incorporated bypasses for the towns of Abbeyfeale and Newcastle West. The constraints study and initial route selection for this project were undertaken. However, the project was suspended along with several other projects in the state due to the lack of available government funding.

## Chapter 2 Need for the Scheme







### 2.2.2 Existing N69 National Secondary Route

The 32km section of the N69 between the Foynes Port access road and the N18 Dock Road junction in Limerick can be characterised by the following:

- The section of the N69 national secondary road under consideration passes through the centres of Foynes, Kilcornan, Kildimo, Clarina and Mungret and skirts Askeaton, causing delays to through traffic and safety concerns within the urban settlements.
- Between Foynes and Limerick the N69 has a varying quality of horizontal and vertical alignment with several tight radius bends. In terms of horizontal curvature, the majority of the curve radii would be considered inappropriate for a 100km/h or 120km/h design speed.
- The carriageway cross section varies in width and there are little or no hard shoulders along the majority of the route other than at sections which have been subject to recent improvements works.
- Between Foynes and Limerick the N69 is mainly a 100km/h posted speed limit road. There is a 100km/h speed limit on approximately 82% of the route under assessment but average speeds are approximately 73kph. There are 50km/h and/or 60km/h speed restrictions through the villages of Kilcornan, Kildimo, Clarina and Mungret.
- Overtaking opportunities in both directions are infrequent and short in length.
- The existing pedestrian facilities along the route are limited to within the villages of Kildimo and Clarina, with no cycle facilities provided along any of the route.
- In total there are 493 access points along this section of the N69, this figure incorporates all accesses in the various villages and towns. The 493 accesses include 63 public road junctions, 236 house and farm accesses, an additional 151 field accesses and 43 business and community accesses. All of these accesses lead to reduced traffic safety with potential traffic hazards and decreased traffic capacity along the length of this section of the national road network.

### 2.2.3 Existing N21 National Primary Route

The 18.5km section of the N21 between Rathkeale and the M20/N20/N21 junction at Attyflin can be characterised by the following:

- The section of the N21 national primary road under consideration passes through or bypasses the towns/villages of Rathkeale, Croagh and Adare before terminating at the M20/N20/N21 at Attyflin approximately 5.5km east of Adare;
- Between the M20/N20/N21 junction and the Lantern Lodge roundabout east of Adare the N21 is a wide single carriageway with generous hard shoulders and large radius bends;
- From the Lantern Lodge Roundabout, through Adare and to a point approximately 1.5km to the west of Murphy's Cross (N21/R519 junction) the N21 is narrow single carriageway with tight radius bends and no hard shoulders. From this point to Rathkeale the N21 returns to a standard single carriageway with hard shoulders and large radius bends.
- Between Rathkeale and Attyflin the N21 is mainly a 100kph posted speed limit road. There is a 100kph speed limit on approximately 85% of the route under assessment. There is a 50kph speed restriction in Adare with additional 60kph speed restrictions in Adare and Croagh.
- Average speeds along this section of the N21 vary considerably. Between Newcastle West and the west of Adare average speeds are below 90kph. Average speeds then drop significantly through Adare, particularly during peak times, with observed average speeds below 17kph.



- Along the N21 between Attyflin and Rathkeale overtaking opportunities in both directions are interspersed, with overtaking not permitted through Croagh and Adare.
- The only pedestrian/cycle facilities along the N21 within this area are located in Adare and Croagh.
- Between the M20/N20/N21 junction and Rathkeale (approx. 18.5km) there are 181 access points including 29 public road junctions, 74 house and farm accesses, an additional 51 field accesses and 27 vehicular access for business and community facilities. In addition to these accesses on street parking is available along the main street through Adare with parking on one or both sides of the road for 500 metres. All of these accesses lead to reduced traffic safety and decreased traffic capacity along the length of this section of the national road network.

#### **2.2.4 Existing M20 National Primary Route**

The M20 is a dual carriageway road and travels north-easterly from the M20/N20/N21 junction at Attyflin to the M7/N18/M20 Junction at Rossbrien and bypasses Patrickswell, Raheen Business Park and Dooradoyle. The road was redesignated as a Motorway in 2009. The 10km section of the M20 can be characterised by the following:

- The M20 has five grade-separated junctions, namely the M20/N20/N21 junction at Attyflin (J5), the M20/R526 junction at Patrickswell (J4), the M20/R510 junction at Raheen (J3), the M20/R926 junction at Dooradoyle (J2) and the M20/M7/N18 junction at Rossbrien (J1).
- Between Junctions J1 and J5 (approximately 10km) there are no direct accesses or entrances onto the M20 with the only access to the Motorway via the grade-separated junctions.
- Between J1 and J2 on the M20 a speed limit of 100km/h applies, while from J2 to J5 a speed limit of 120km/h applies. As the M20 is designed to a dual carriageway standard the route provides a continuous overtaking option over its entire length.

### **2.3 Existing Traffic Levels**

#### **2.3.1 Annual Average Daily Traffic**

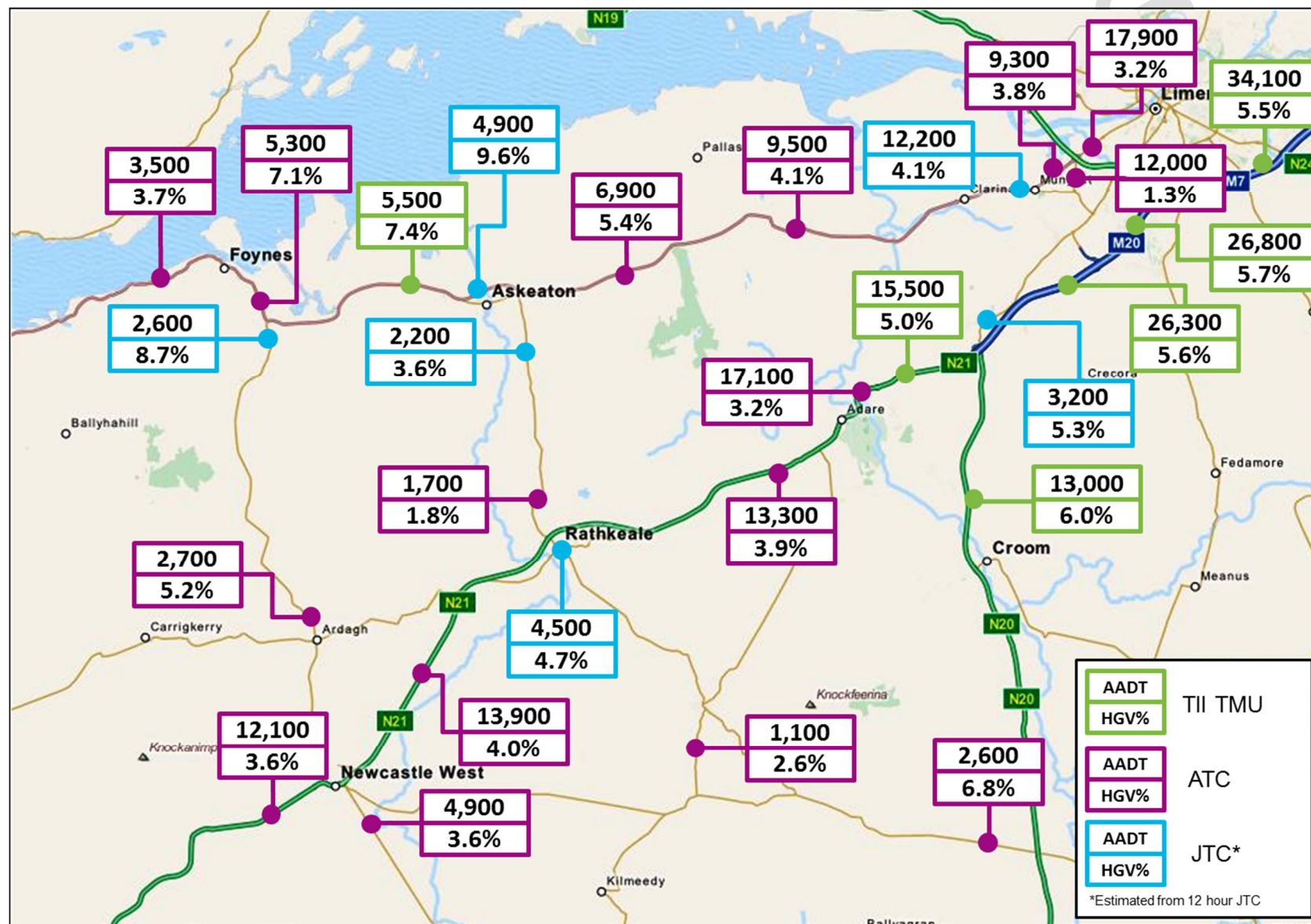
Estimated 2014 Annual Average Daily Traffic<sup>2</sup> (AADT) flow and the percentage of Heavy Goods Vehicles (HGV) on various sections of the road network in the study area are presented in Figure 2.2. The data presented is based on traffic surveys undertaken in May 2014, including Automatic Traffic Counts (ATCs) and Junction Turning Counts (JTCs).

Data from TII permanent Traffic Monitoring Units (TMU) located on various sections of the national road network were also utilised. A roadside interview survey was also undertaken at Shannon-Foynes Port to help establish the distribution of freight from the Port and the road corridors used by freight in the region.

Traffic flows on the N69 increase from approximately 5,300 AADT at Foynes to 12,200 AADT at Mungret. Traffic levels along the section of the N21 under consideration range between 13,300 AADT near Rathkeale to 17,100 AADT east of Adare.

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<sup>2</sup> AADT is the average number of vehicles that use a section of road over a full 24hr period across a calendar year. It is calculated by dividing the total traffic over a full calendar year by 365.



*Figure 2.2 – 2014 Estimated AADT & HGV%*

## 2.4 Existing Journey Times

Data on journey times throughout the study area was collected in May 2014 and October 2015. The data was collected using Automatic Number Plate Registration (ANPR) cameras and Bluetooth tracking devices. ANPR cameras recorded the registration plate number alongside the time at which the registration was recorded at various points throughout the network. Bluetooth tracking devices capture the Bluetooth signal emanating from mobile phones and car kits in vehicles travelling along a selected route.

Journey time results and average speeds are presented in Table 2.1 along 12 key sections in the study area which are shown graphically in Figure 2.3 & 2.4.

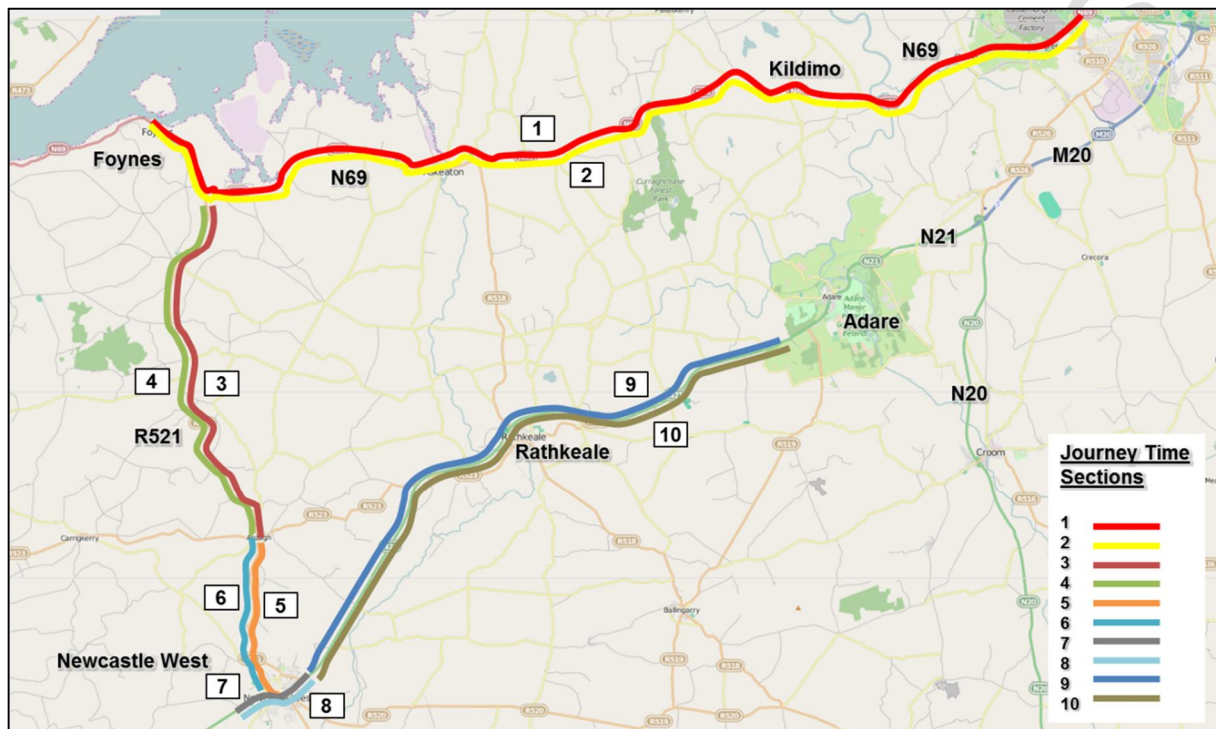


Figure 2.3 – Key Section Journey Times (ANPR)



Figure 2.4 – Adare Section Journey Times (Bluetooth)

It should be noted that journey time survey data was collected during the months of May and October, both of which are considered to be neutral months for traffic data collection. Adare is one of the most notorious bottlenecks remaining on the national road network and traffic congestion through the village is particularly marked on weekday evenings (westbound though the village) and at weekends generally throughout the year.

For the purposes of this assessment average weekday journey times are reported. Therefore the journey time data outlined in Table 2.1 does not take into account the significantly higher journey times as a result of the increased tourist related traffic volumes on the N21 during the summer months of June to September.

In 2012, the Road Safety Authority (RSA) produced the report *Free Speed Survey 2011 (Urban and Rural)*. Free speeds are speeds at which drivers choose to travel when unconstrained by road geometry (e.g. sharp bends, intersections or hills), weather conditions (e.g. rain) or traffic conditions (e.g. congestion).

The average free speed for national secondary single carriageways was measured as 82kph, while national primary roads were measured at 90kph. The results in Table 2.1 show that the N69 between Foynes and N18 Dock Road junction has an average speed of approximately 70kph while the N21 varies considerably. Average speeds of approximately 35kph were recorded on the N21 through Newcastle West, while speeds between Newcastle West to the west of Adare increase to approximately 85kph. However, significant delays are noted through Adare Village during peak times.

Table 2.1 – Average Journey Time Data

Route No.	Section	Direction	Distance (km)	Average Journey Times (min:sec)			Average Speeds (kph)		
				AM	IP	PM	AM	IP	PM
1	N69 Foynes to Limerick	EB	32.3						
2		WB	32.3						
3	R521 Foynes to Ardagh	SB	13.5						
4		NB	13.5						
5	R521 Ardagh to Newcastle West	SB	7.4						
6		NB	7.4						
7	N21 through Newcastle West Town	EB	2.1						
8		WB	2.1						
9	N21 Newcastle West to East of Adare	EB	20.0						
10		WB	20.0						
11	N21 through Adare Village	EB	2.5						
12		WB	2.5						



## 2.5 Existing Road Safety Issues

The Road Safety Authority (RSA) Personal Injury Accident (PIA) database<sup>3</sup> has been consulted regarding collisions along the N69 between Limerick and Foynes and along the N21 between the M20/N20/N21 junction at Attyflin and Rathkeale.

Figure 2.5 shows the location of all collisions along the N69 between Foynes and N18 Junction 2 (Dock Road Junction) and along the N21 between the M20/N20/N21 Junction and Rathkeale between 2005 and 2012. A summary of the total number collisions and subsequent casualties by severity are presented in Table 2.2.

Table 2.2 – Collision Data

Data	N69			N21		
	Fatal	Serious	Minor	Fatal	Serious	Minor
Collisions						
Casualties						

### 2.5.1 Network Safety Ranking - NRA HD 15/12

NRA Standard HD 15 is used to identify sections of the national road network which have a high concentration of collisions and to rank the safety of the road network. The ranking is based on the collision rate (number of collisions per 100 million vehicle kilometres travelled) on road sections of approximately 1km compared against the national average collision rate for a similar road type.

Figure 2.6 shows the ranking of both the N69 and N21 corridor sections under consideration based on HD 15 for 2009 to 2011. Both roads are considered to be “Rural Single Carriageways” and the ranking of collisions is categorised as follows:

- Twice above national average collision rate;
- Above national average collision rate;
- Below national average collision rate; and
- Twice below national average collision rate.

Figure 2.6 demonstrates that there are several sections on both corridors which have a ranking of above or twice above the national average collision rate for a rural single carriageway road. Under HD15 sections of road with a ranking of above twice the national average would require rectification as a priority.

<sup>3</sup> The RSA PIA database at this time of writing covers the period 2005 – 2012.

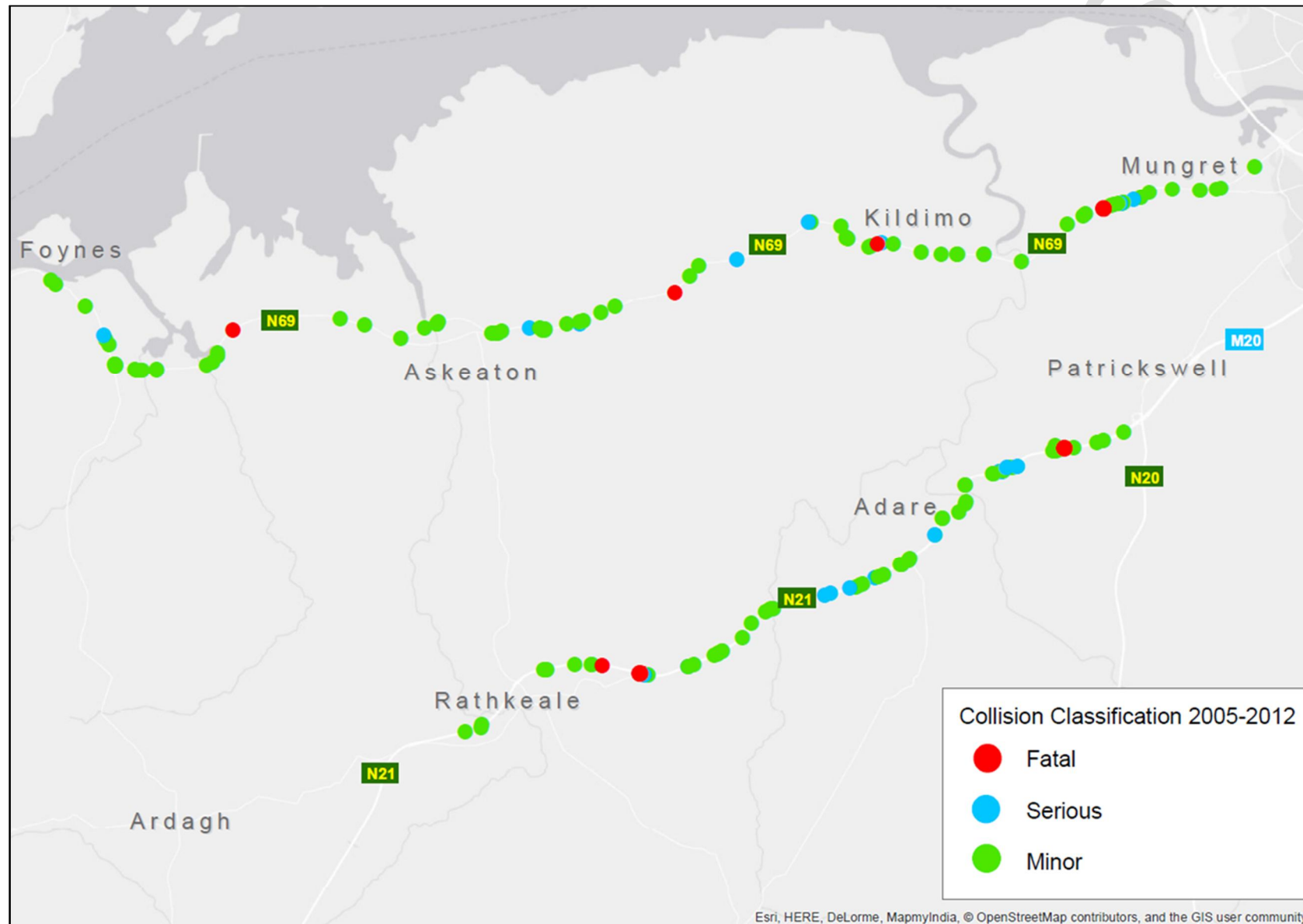


Figure 2.5 - RSA Collision Data (2005 – 2012)

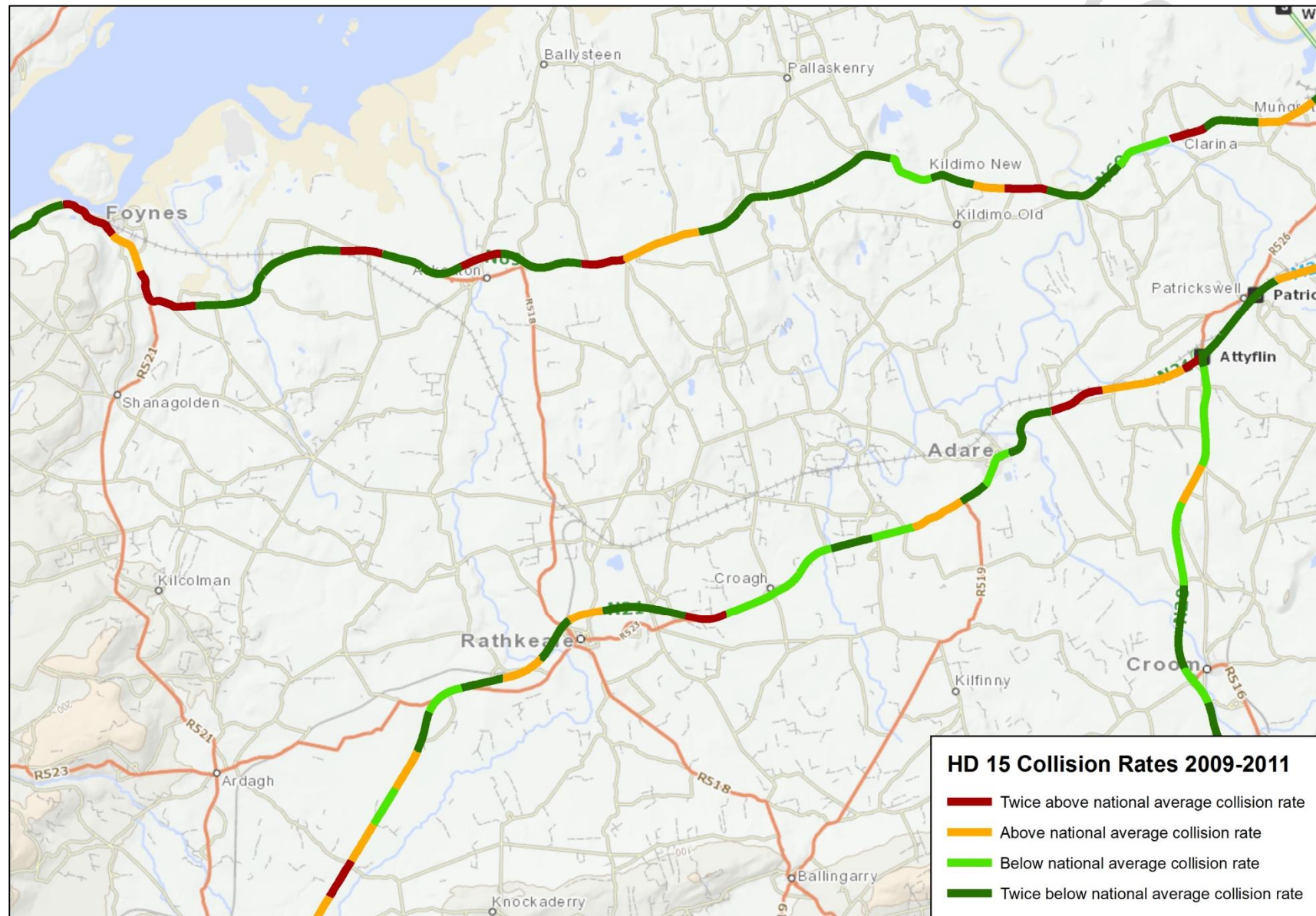
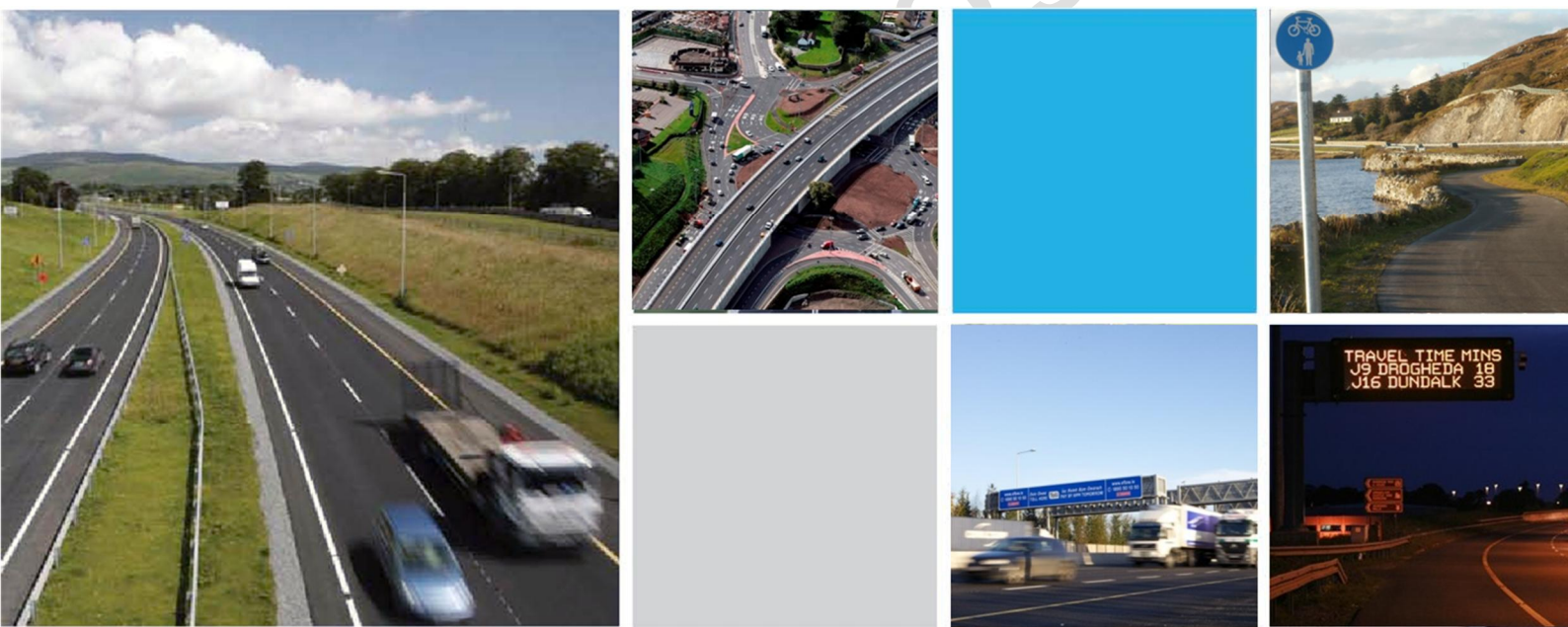


Figure 2.6 – HD15 Collision Rates 2009-2011

## Chapter 3

### Strategic Fit and Priority





## 3 Strategic Fit and Priority

### 3.1 Policy Background

The need for the Foynes to Limerick Road Improvement Scheme has been identified in the following policy documents.

#### European Policy Context:

Trans-European Transport Network (TEN-T) Policy: Regulation (EU) No 1315/2013 in relation to:

- TEN-T Ports;
- TEN-T Road Network; and
- TEN-T Rest Areas.

#### National & Regional Policy Context:

- Building on Recovery; Infrastructure and Capital Investment 2016-2021;
- Limerick County Development Plan 2010 – 2016;
- Mid-West Regional Planning Guidelines 2010 – 2022;
- National Ports Policy (2013);
- Shannon-Foynes Port Company Masterplan – Vision 2041;
- Strategic Integrated Framework Plan for the Shannon Estuary 2013 – 2020;
- The National Secondary Road Needs study (2011);
- Road Safety Strategy 2013 -2020;
- Mid-West Area Strategic Plan (MWASP) 2012 – 2030;
- Smarter Travel: A Sustainable Transport Future 2009 - 2020; and
- Harnessing our Ocean Wealth (2012).

### 3.2 European Policy Context

#### 3.2.1 *Trans-European Transport Network*

On the 11th of December 2013 Regulation (EU) No 1315/2013 came into effect. This defines and provides legal guidance for the provision of the Trans European Transport Network (TEN-T). TEN-T consists of two planning layers:

- Core transport network; and
- Comprehensive transport network.

The Core network will form the backbone for transportation in Europe's Single Market. By 2030, it will remove bottlenecks, upgrade infrastructure and streamline cross border transport operations for passengers and businesses throughout the EU. Its implementation will be progressed by the setting up of 9 major transport corridors that will bring together Member States and stakeholders.

The core network in Ireland forms part of 1 of these 9 major transport corridors, which is referred to as the North Sea-Mediterranean Corridor. This corridor stretches from Ireland and the north of the UK through the Netherlands, Belgium and Luxembourg to the Mediterranean Sea in the south of France. Figure 3.1 highlights the TEN-T Core Network in Ireland and the UK, including the Limerick connection to the Cork - Dublin corridor.



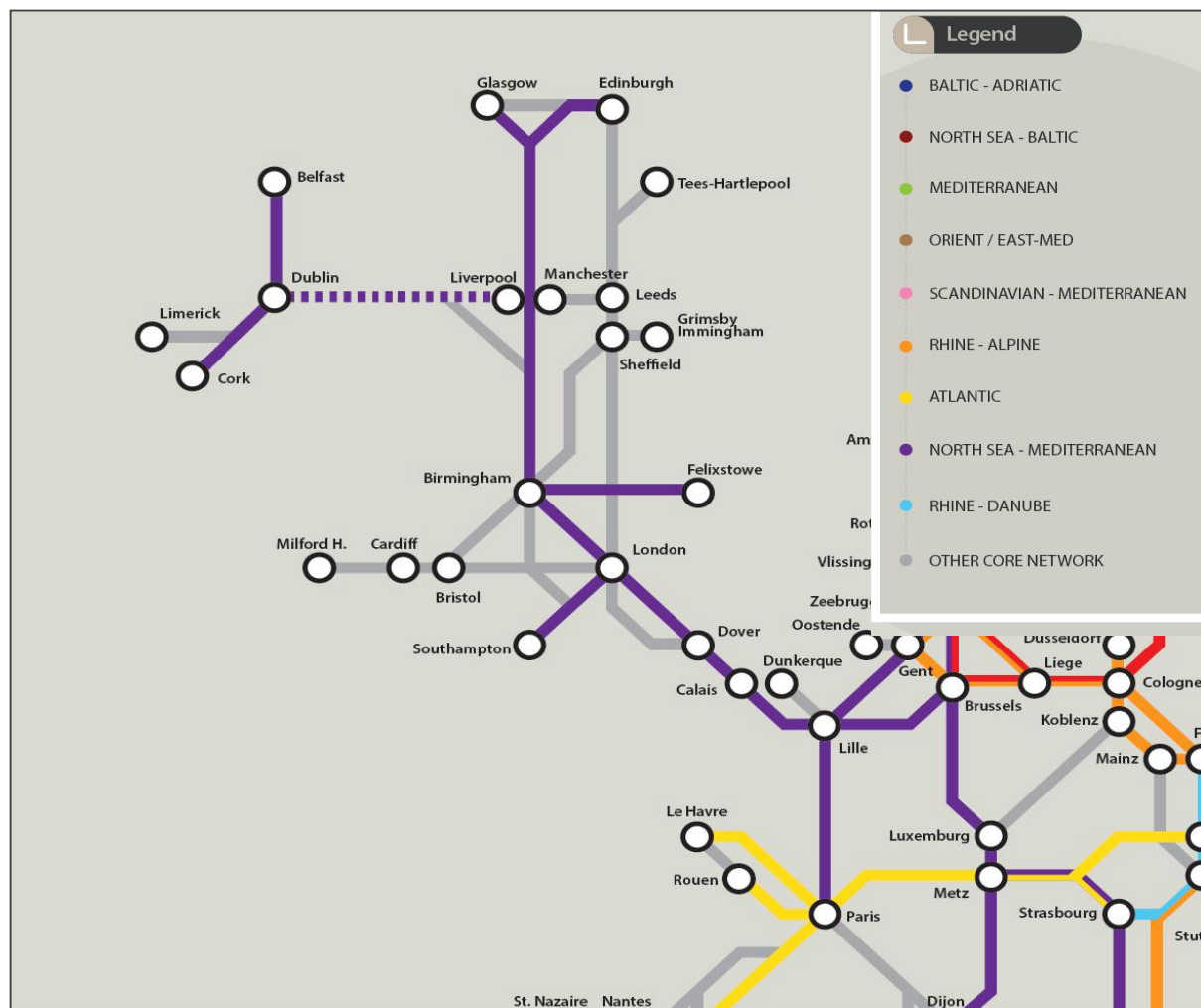


Figure 3.1- Ireland and the TEN-T Core Network

The TEN-T Core Network will be supported by a Comprehensive Network of routes, feeding into the Core Network at regional and national level. The target for completion of the Comprehensive Network is 2050. Figure 3.2 and 3.3 highlight the extent of both the Core and Comprehensive Transport Networks in relation to roads, ports and airports within Ireland and within the Limerick Region.



Figure 3.2 - TEN-T Core and Comprehensive Network Ireland<sup>4</sup>

<sup>4</sup> Map produced by ROD/AECOM based on data extracted from EU Regulations 1315/2013 and 1316/2103.



Figure 3.3 - TEN-T Core and Comprehensive Network in Limerick Region

### 3.2.2 TEN-T Policy in Relation to Ports

Under TEN-T, Shannon-Foynes Port was identified as one of four core ports within the island of Ireland alongside Belfast, Dublin and Cork Ports.

Article 41 (2) of the Regulations (EU) No 1315/2013 with regard to transport infrastructure requirements states that Member States shall ensure that:

*“Maritime ports of the core network ... shall be connected with the railway and road and, where possible, inland waterway transport infrastructure of the trans-European transport network by 31 December 2030, except where physical constraints prevent such connection.”*

Actions of the policy include providing support to projects which contribute to the coordinated development and management of ports, rail and inland waterways infrastructure and those which enhance port and shipping performances.

The European Commission has published an implementation plan “Ports 2030 - Gateways for the Trans European Network”. This states that in partnership with the Member States, the Commission will strengthen the alignment of transport projects funded under the Structural and Cohesion Funds with the TEN-T, promoting priority to projects for port access and hinterland connections.

### 3.2.2.1 Ports 2030 - Gateways for the Trans European Network

The Ports 2030 - Gateways for the Trans-European Network, published in 2014, examines the drivers behind port development and what steps need to be taken to address the deficiencies in the port network. The report recognises that the success of a good port is a solid connection to its immediate surrounding inland area and its hinterland.

The report recognises that investment in port facilities is required today to remain competitive tomorrow and to make the best possible use of our port assets, which require efficient and quality port services. By not developing a fully integrated transport infrastructure, the report states that:

*"If nothing is done an opportunity will be missed to increase options available to transport operators and shippers and create growth and jobs in coastal areas and across the Union as a whole."*

The policy in relation to ports therefore recognises the important role that the development of ports and its surrounding infrastructure will function as a driver for economic growth and employment in the surrounding region.

### 3.2.3 TEN-T Policy in Relation to High-Quality Roads

Regulation (EU) No 1315/2013 sets out the requirements for high quality roads that shall form part of the TEN-T road network, both Core and Comprehensive, and states under Article 17(3), the following:

*"High-quality roads shall be specially designed and built for motor traffic, and shall be either motorways, express roads or conventional strategic roads."*

*(a) A motorway is a road specially designed and built for motor traffic, which does not serve properties bordering on it and which:*

- (i) is provided, except at special points or temporarily, with separate carriageways for the two directions of traffic, separated from each other by a dividing strip not intended for traffic or, exceptionally, by other means;*
- (ii) does not cross at grade with any road, railway or tramway track, bicycle path or footpath; and*
- (iii) is specially sign-posted as a motorway.*

*(b) An express road is a road designed for motor traffic, which is accessible primarily from interchanges or controlled junctions and which:*

- (i) prohibits stopping and parking on the running carriageway; and*
- (ii) does not cross at grade with any railway or tramway track.*

*(c) A conventional strategic road is a road which is not a motorway or express road but which is still a high-quality road."*

This relates to all roads within the network while Article 39(2) of the Regulations sets out that for the Core network only options (a) a motorway or (b) an express road may be considered as road option types. However Article 39 (3) states further that:

*"At the request of a Member State, as regards road transport infrastructure, exemptions from the provisions of points (a) or (b) of Article 17(3) may be granted by the Commission in duly justified cases as long as an appropriate level of safety is ensured."*



*The duly justified cases referred to in this paragraph shall include cases where investment in infrastructure cannot be justified in socio-economic cost-benefit terms.”*

Article 17(4) of the Regulations lists the associated infrastructure which may be included with the above high quality roads as follows:

*“Equipment associated with roads may include, in particular, equipment for traffic management, information and route guidance, for the levying of user charges, for safety, for reducing negative environmental effects, for refuelling or recharging of vehicles with alternative propulsion, and for secure parking areas for commercial vehicles.”*

### 3.2.4 TEN-T Road Network in the Limerick Region

The existing national road network in the Limerick Region is shown in Figure 3.5 and includes the following routes:

- N69 national secondary road between Tarbert and Limerick City; and
- N21 national primary road between Abbeyfeale and Attyflin.

These national routes may form parts of the TEN-T Network, and may be augmented or modified in future improvement schemes to fulfil the requirements of that network.

In terms of geographical location, the N69 and N21 road corridors are within 10 kilometres of one another in the vicinity of Askeaton as illustrated in Figure 3.5. Synergies may therefore exist between the Core and Comprehensive elements of the TEN-T Network in this region. The study area for this project has been defined to include a wide region served by both the N69 and N21 routes so as to fully evaluate the scope for synergy between the Core and Comprehensive Network elements.

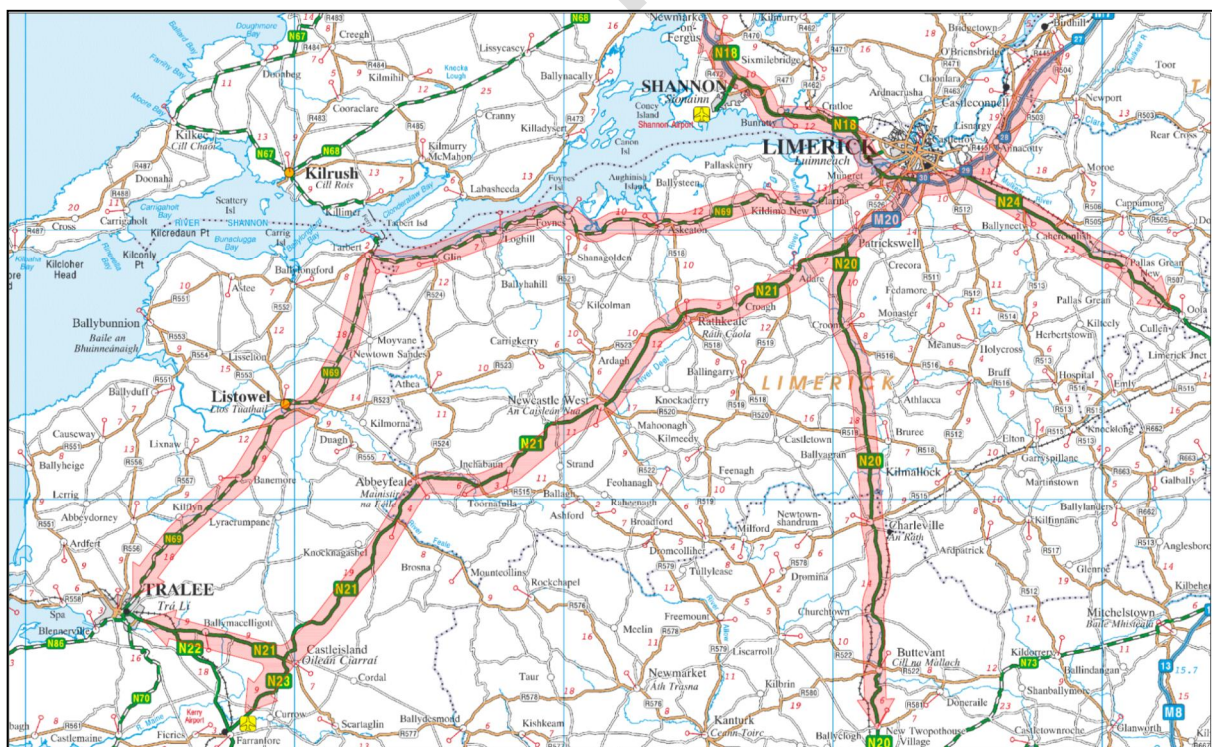


Figure 3.4 – Strategic Corridors in Limerick Region

The proposed scheme is anticipated to be a high quality road in accordance with TEN-T Requirements. In recognition of the capital investment envisaged, full consideration of the



existing road network in the area is warranted in terms of any infrastructural deficits which arise in order to achieve optimal value for money. Existing congested conditions at Adare, taken in combination with future planning requirements for the road corridors to Cork and Tralee, cannot be ignored in this regard.

### 3.2.5 TEN-T Policy in Relation to Service Areas and Rest Areas

Article 39.2(c) of Regulation (EU) No 1315/2013 sets out the requirements for rest areas on the TEN-T Network to include:

*"the development of rest areas on motorways approximately every 100 km in line with the needs of society, of the market and of the environment, in order inter alia to provide appropriate parking space for commercial road users with an appropriate level of safety and security;"*

In August 2014 the NRA published its Motorway Service Area Policy which addresses the application of the TEN-T policy in relation to service and rest areas within Ireland. The policy lists the major interurban routes including the Core and Comprehensive Road Network and lists the location and types of service and rest areas proposed. In relation to the Foynes to Limerick route the policy states the following:

*"A Type 1 Service Area is proposed for the Limerick to Foynes route. This may be near the port in Foynes, but depending on how the scheme evolves may be some distance from the port. Limerick County Council, in consultation with the Authority, will include consideration of the appropriate location for this service area as part of the scheme planning, currently underway"*

Consideration is currently being given to amending this policy to remove the requirement for a Type 1 MSA along the Foynes to Limerick Scheme and replace that with the requirement for an alternative rest area facility at the western end of the scheme. This facility will also meet the TEN-T requirements for safe and secure parking.

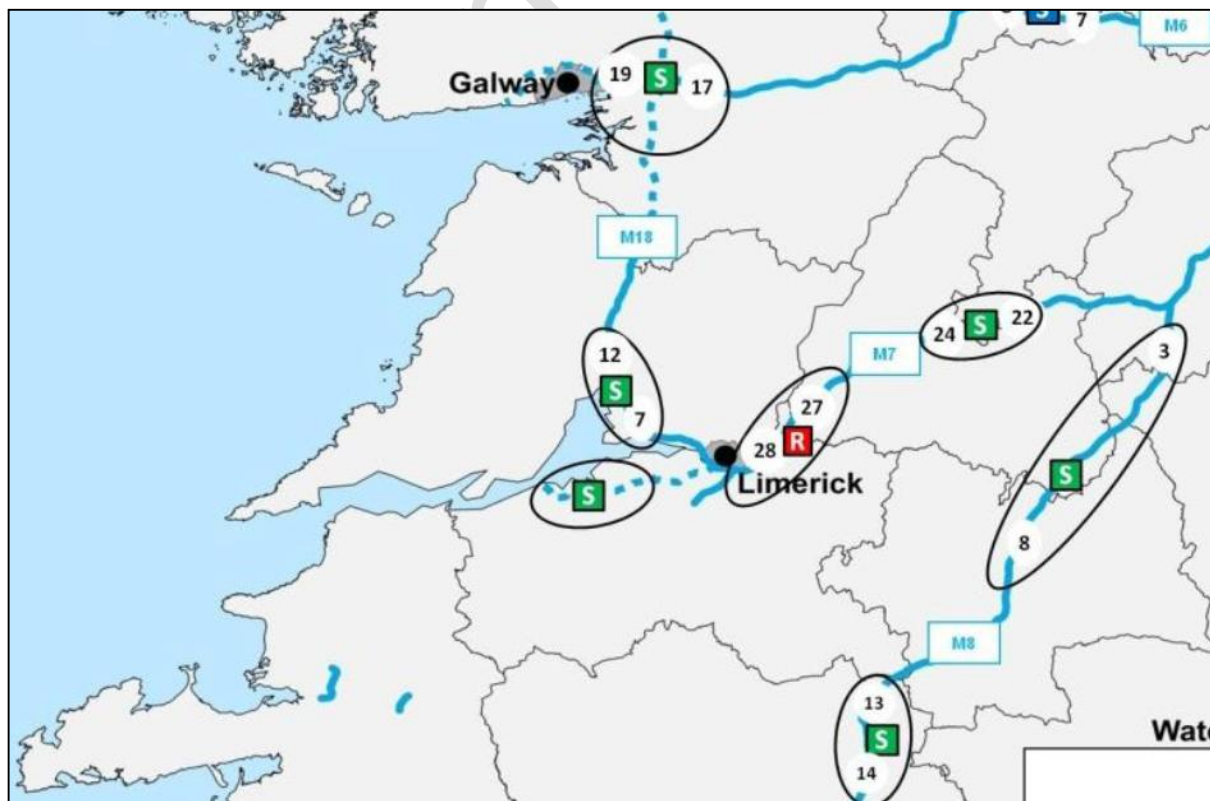


Figure 3.5 – NRA Proposals for Services Areas (Limerick Region)

### 3.3 National & Regional Policy Context

#### 3.3.1 Building on Recovery: Infrastructure and Capital Investment 2016 - 2021

Building on Recovery is a 6 year capital investment framework which aims to invest €27 billion in the key areas of transport, education, health and enterprise, with €10 billion targeted at transport elements of the plan. The plan was launched in September 2015. The plan recognises that high-quality infrastructure is an important element of a modern society and economy. It strengthens economic growth through enhancing efficiency, productivity and competitiveness and underpins social cohesion.

The plan provides €6 billion for investment in the roads network, with €4.4 billion to ensure the existing extensive network throughout the country is maintained and strengthened, and €1.6 billion for new projects including those targeted at removing bottlenecks will also commence subject to planning permission. Two projects named specifically that directly address the need for this scheme within the plans are the:

- Adare By-Pass; and
- N69 Shannon to Foynes Road.

#### 3.3.2 Limerick County Development Plan 2010 - 2016

The Limerick County Development Plan 2010 - 2016 is the current development plan for County Limerick. The plan's transport and development objectives are to ensure that the county's transportation, infrastructure, natural and energy resources shall be developed in a sustainable and efficient manner to promote the social and economic wellbeing of the county and its population. The plan is still in force notwithstanding the amalgamation of Limerick City Council and Limerick County Council to form Limerick City and County Council in 2014.

The plan recognises the importance of linkages throughout the County and beyond as key features in achieving balanced regional development objectives, including those of the National Spatial Strategy.

In terms of transport policies, the implementation of national and EU regulations is recognised under the following:

<b>Policy CP 01</b>	To implement relevant European, national and regional regulations, guidelines and strategies at County level.
<b>Policy CP 03</b>	To provide for an enhanced quality of life for all, based on high quality, sustainable residential, working and recreational environments and transportation networks.

In terms of transport infrastructure improvements in the vicinity of the Foynes – Limerick project, the following has been identified in the County Development Plan:

<b>N21 Tralee Road (and Killarney Road)</b>	Design, reserve land for and commence construction of N21 Route Improvements from Adare to the County boundary, as resources become available.
<b>N69 Tarbert (Foynes) Road</b>	Design, reserve land for and commence construction of N69 Route Improvements from Limerick to Glin as resources become available.

Figure 3.6 shows the key transportation links identified within the County Development Plan.

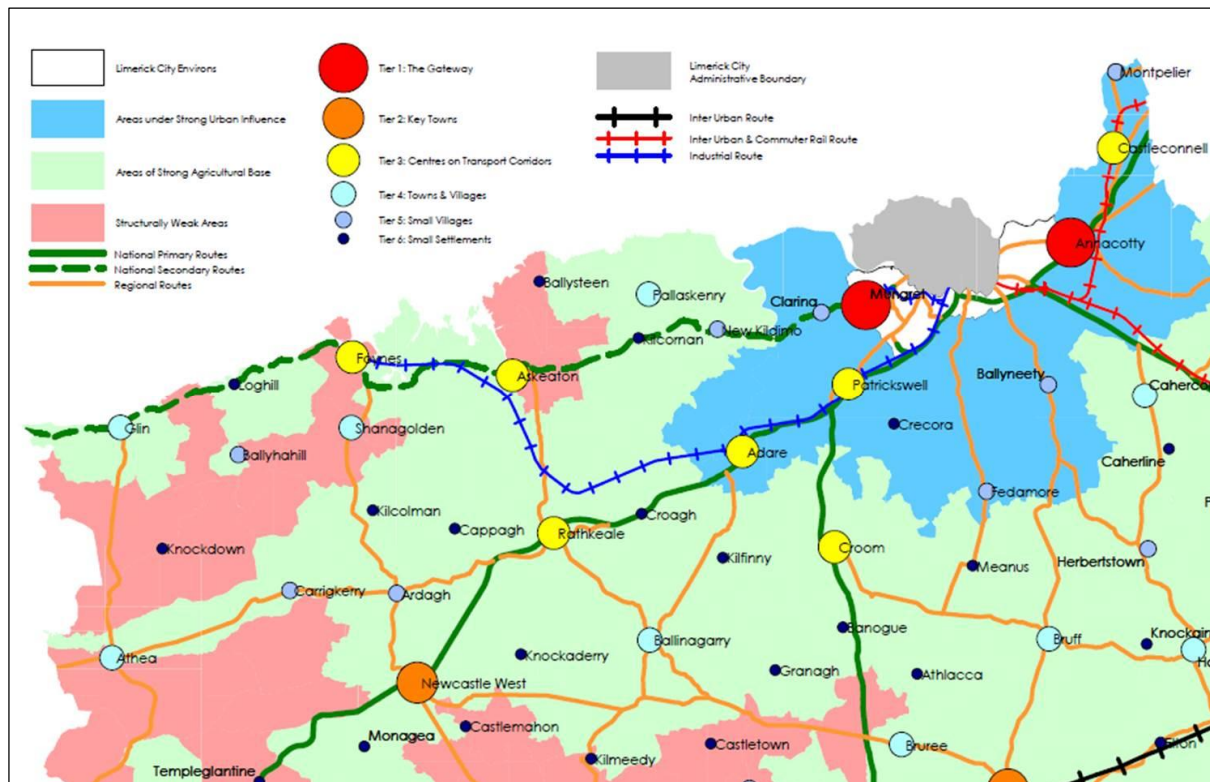


Figure 3.6 – Limerick County Development Plan (Transportation)

### 3.3.3 National Spatial Strategy 2002 - 2020

Although under review, the National Spatial Strategy (NSS) for Ireland is a 20 year planning framework designed to achieve a better balance of social, economic, physical development and population growth between regions. It has relevance for the region in that it focused on people, on places and on building communities. Through closer matching of where people live with where they work, different parts of Ireland would in the future be able to sustain:

- A better quality of life for people;
- A strong, competitive economic position; and
- An environment of the highest quality.

The plan recognised that the Limerick-Shannon gateway would need enhancement at national and international level to improve the performance of the Mid-West Region. This would be required to lever additional investment for the overall region, through its critical mass, strategic location, capacity for innovation and development and connections within the national transport framework. The development of the Foynes - Limerick road would contribute to the aim of improving connection from the region to the national and international transport network.

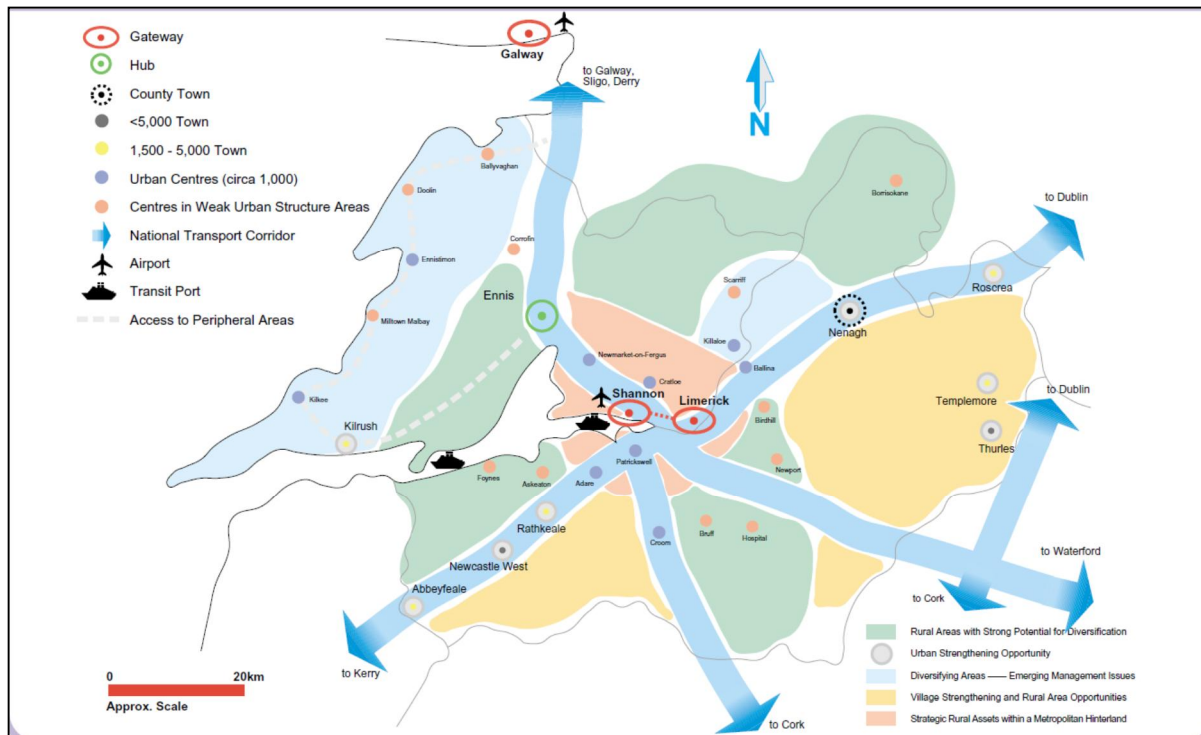


Figure 3.7 – National Spatial Strategy (Mid West Region)



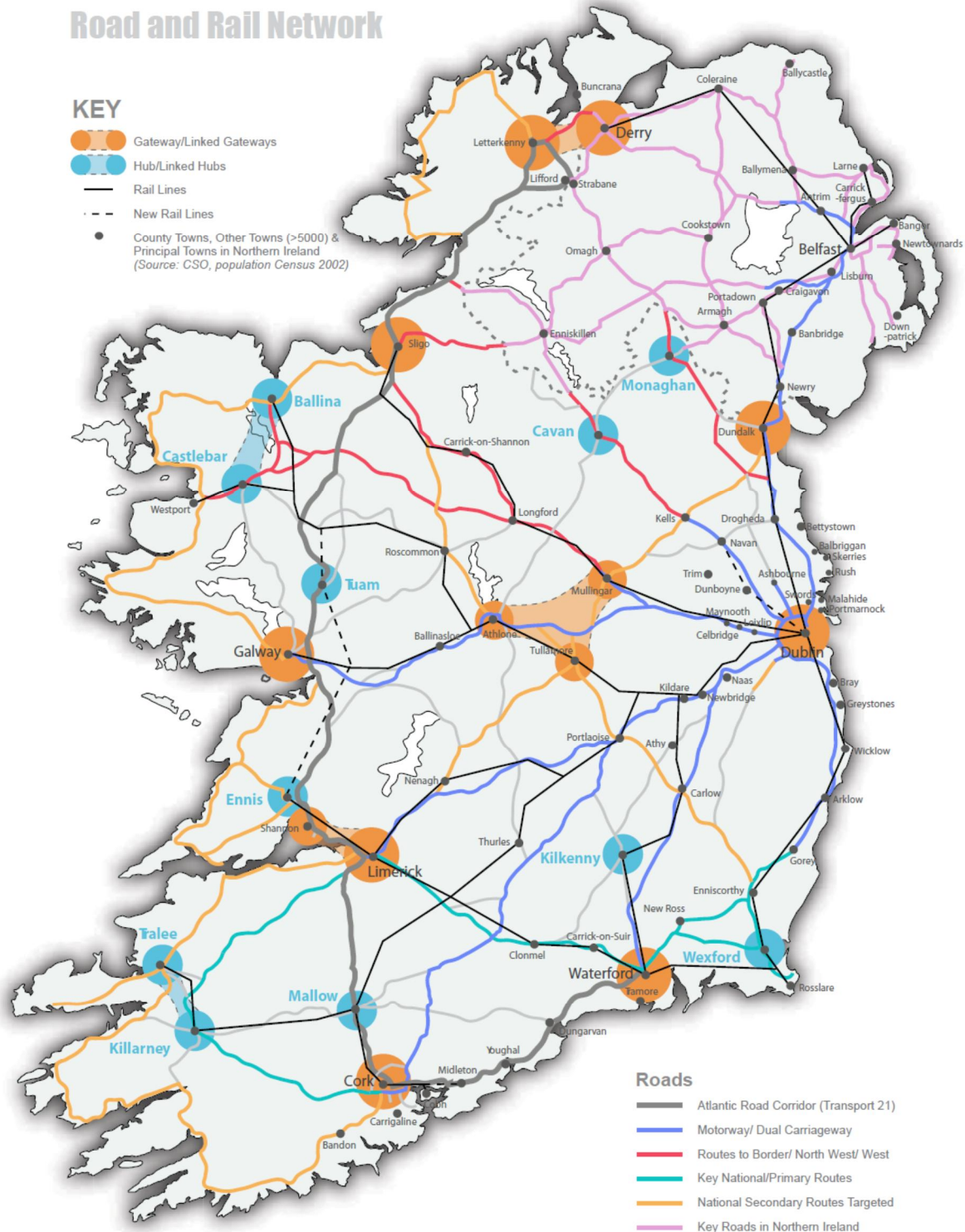


Figure 3.8 – National Spatial Strategy (Road & Rail Network)

### 3.3.4 Mid West Regional Planning Guidelines 2010 - 2022

The Mid West Regional Planning Guidelines 2010-2022 replaced the 2004-2016 Regional Planning Guidelines for the Mid-West Region. The Guidelines provide a planning framework for the future physical, economic and social development of the Mid-West Region.



These guidelines are set within the overall policy framework established by the National Spatial Strategy 2002-2020 and the National Development Plan 2007-2013. They also reflect other national social, economic and environmental policies which affect the Mid-West Region, as well as a range of existing regional strategies.

Specific regional priorities in terms of roads included within the guidelines:

- *“The upgrading of the Tralee to Limerick N21 is a matter of high priority. In the event of funding for the provision of a motorway link between Tralee and Newcastlewest not being provided in the immediate future, by-passes will be required as a matter of major immediate priority for Adare, Abbeyfeale and Newcastlewest;” and*
- *“A road between Askeaton and Adare to provide effective access to road freight traffic from Foynes to the N20/21 (linking Limerick with Cork and Tralee)”.*

The guidelines also recognise that the following roads should be upgraded to a standard suitable for their purposes:

- *“The condition and standard of the N69 between Foynes and Limerick City to provide efficient access to the ports; and*
- *Upgraded road links along the Shannon Estuary in order to facilitate employment and tourism development.”*

### 3.3.5 National Port Policy 2013

The core objective of the Department of Transport, Tourism and Sport (DTTAS) National Ports Policy is to facilitate a competitive and effective market for maritime transport services. The long-term international trend in ports and shipping is towards increased consolidation of resources in order to achieve optimum efficiencies of scale. This has knock-on effects in terms of vessel size, the depths of water required at ports and the type and scale of port access and hinterland transport connections.

In recognition of this, the National Ports Policy introduces clear categorisation of the ports sector into:

- Ports of National Significance (Tier 1)
- Ports of National Significance (Tier 2); and
- Ports of Regional Significance.

Ports of National Significance (Tier 1) are ports that:

- are responsible for 15% to 20% of overall tonnage through Irish ports, and
- have clear potential to lead the development of future port capacity in the medium and long term, when and as required.

The three ports which fulfil these criteria are:

- Dublin Port;
- Port of Cork; and
- Shannon-Foynes Port.

Shannon-Foynes Port is the largest bulk port in the country and handles approx. 20% of all seaborne trade in the State. The port's dominance in the dry-bulk sector is particularly pronounced; it has a market share of around 63% in this sector. The National Ports Policy clearly

identifies as a matter of reasonable priority the improvement of the road and rail freight connections to Shannon-Foynes Port.

As part of the emerging revised European TEN-T network, the Department is seeking to ensure that a number of port access and hinterland connection priorities are included as part of the core network. These priorities are both road and rail links.

The policy recognises that for inclusion in the core network, ports must enjoy significant volumes of freight and/or passenger traffic, have a high level of international connectivity and, by 2030, be connected to the core European rail and road network.

The provision of the core road to support the Tier 1 port status of Shannon Foynes is therefore recognised as a key objective of the policy.

### *3.3.6 Shannon Foynes Port Company Masterplan – Vision 2041*

Vision 2041, Shannon Foynes Port Company's Masterplan published in February 2013 makes specific references to transportation infrastructure needs in relation to their areas of activity and the potential for the expansion of Shannon Foynes Port.

Chapter 8 of the Masterplan, Transport and Connectivity, discusses the limitations of the existing N69 road including delays encountered in the villages located between Foynes and Limerick City.

The Masterplan considers a number of potential growth scenarios for the port and outlines that existing HGV numbers could be trebled in the future if the port is expanded and utilised to its full potential. The Masterplan also indicates in its findings that the existing N69 will experience capacity shortfalls even ignoring additional port related traffic.

### *3.3.7 Strategic Integrated Framework Plan for the Shannon Estuary 2013 – 2020*

The Strategic Integrated Framework Plan (SIFP) sets out an overall strategy for the proper sustainable growth, development and environmental management of the Shannon Estuary Region for the next 30 years. Figure 3.9 shows the key links identified within the SIFP.

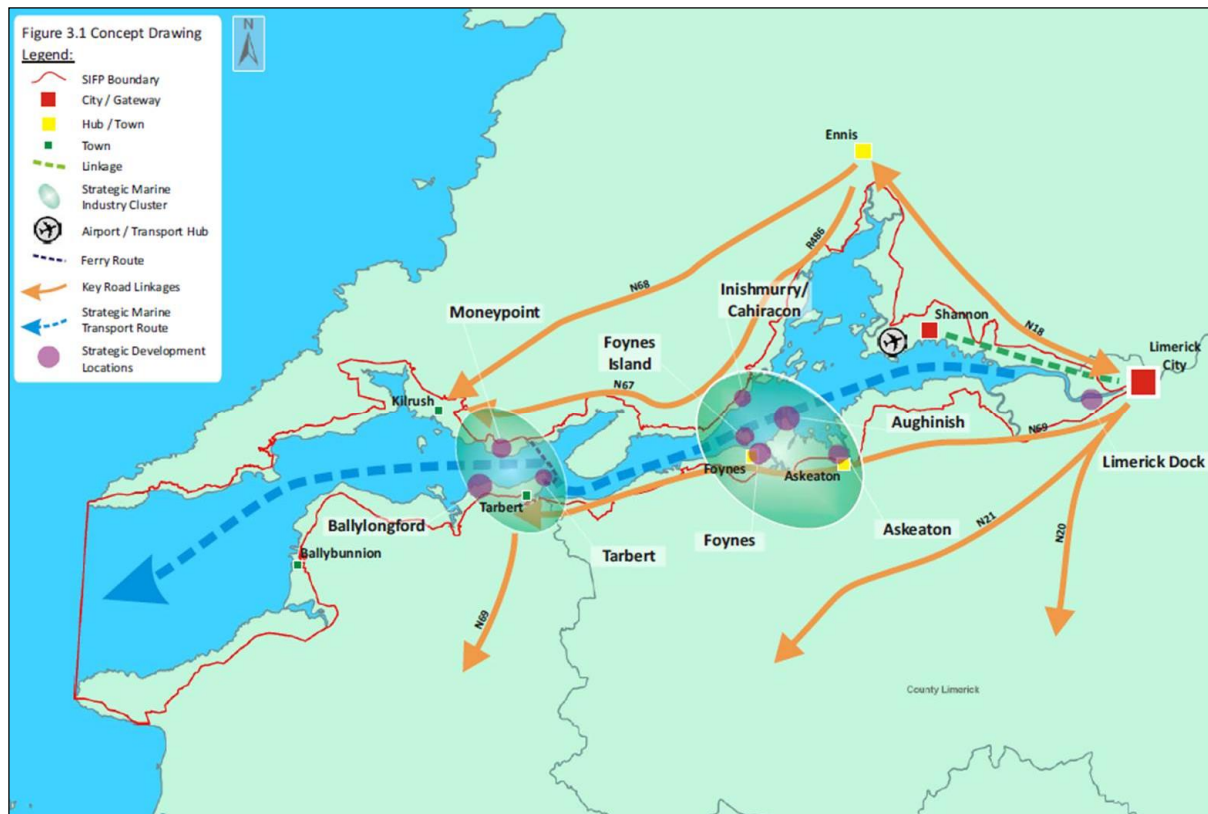


Figure 3.9 – Strategic Integrated Framework Plan (SIFP) Concept

In terms of transportation infrastructure, the plan recognises the importance of road transport for port activity and the economic growth of the Estuary and notes in particular the following:

*“The N69 is a particularly important route, and is highlighted as being a strategic transport corridor providing key connections and linkages between key settlements, the Port of Foynes, the Gateway of Limerick / Shannon and the wider region. The NRA has instructed Limerick City and County Council to progress the Foynes to Limerick Major Road Improvement Scheme. Limerick City and County Council has therefore recently announced a major upgrade scheme for the N69 connecting the Port of Foynes with the M7/N18 at Limerick. The proposal for a high quality road aims to provide improved access to the Port and supports the envisaged expansion of its capacity and usage outlined in the National Ports Policy 2013.”*

### 3.3.8 The National Secondary Road Needs Study (2011)

The National Secondary Roads Needs Study (NSRNS) published in 2011 by the NRA recognises the importance of secondary roads within Ireland in terms of their function for connecting our major cities and towns to each other and to the National Primary Roads network. The study accepts that in investment terms, the National Secondary Roads (NSRs) have in practice been going through a period of relative neglect and that improvements are required.

The study identifies the deficiencies within the individual lengths of NSRs and provides a range of proposals for dealing with these deficiencies. The N69 has been identified as requiring improvements along most of its length with specific upgrades recommended between Foynes and Limerick as follows:

- Foynes to Askeaton Bypass - Upgrade to Type 2 Single Carriageway;
- Askeaton Bypass to Kilcornan - Upgrade to Type 2 Single Carriageway; and

- West of Kilcornan to Mungret (with bypasses of Kilcornan, Kildimo & Clarina) - Upgrade to Type 1 Single Carriageway.

The ability to progress these upgrades would be a function of the final solution selected for the Foynes to Limerick Road Improvement Scheme and would reflect any possible reclassification of the existing N69 which might be required. Nevertheless the deficiencies on the existing N69 as referred to in the National Secondary Roads Needs Study give support to the need for the proposed Foynes to Limerick Road Improvement Scheme.

### 3.3.9 Road Safety Authority Road Safety Strategy 2013 - 2020

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

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

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

The plan sets out strategies for engineering and infrastructure in terms of the benefits that they can have in terms of reducing collisions. The provision of the upgraded sections of national roads proposed as part of this scheme will support this RSA strategy.

The policy which aims to extend measures in the EU Road Infrastructure Safety Management Directive 2008/96/EC relating to road safety inspection and traffic management, which currently apply to the TEN-T routes, to the entire national road network by 2016 has also been adopted for all National Routes since 2013. As this scheme will form part of the TEN-T network it fundamentally supports this objective.

### 3.3.10 Mid-West Area Strategic Plan (MWASP) 2012 – 2030

The Mid-West Area Strategic Plan (MWASP) is a strategic planning, land use and transportation strategy for the Mid-West region and includes the County Councils of Limerick, North Tipperary and Clare along with Limerick City Council. MWASP provides for a comprehensive integrated plan for Land Use Planning and Transportation in the Mid-West Region over an 18 year period. The MWASP sets out a series of economic, land-use and transport recommendations including a proposed transportation investment programme, a public transport feasibility report, spatial and economic strategies and recommendations to achieve balanced regional development and an enhanced quality of life for the citizens of the Mid West region.

Key Objectives from the Plan that support the development of the Foynes to Limerick road include the following:

- *“Prioritise investment in the region, through a fusion of land use and transportation policies within the context of a defined settlement hierarchy as provided in the Regional Planning Guidelines;*
- *Strengthen the role of Limerick City and its Environs (Metropolitan city) as the core economic driver for the Region;*
- *Revise the public transport system through future investment to achieve a more sustainable, accessible, competitive and socially inclusive region;*
- *Identify and promote investment in key infrastructural projects identified to serve the needs of the region including new roads and improvements to the National Secondary*



*and Regional road network, rail, air, port, infrastructure and water services. Such proposals to include an equitable distribution of resources throughout the region; and*

- *Support opportunities that the Shannon Estuary Integrated Framework Plan can sustainably deliver, through optimising the deep water berthage opportunities and the infrastructural, commercial and recreational resources which prevail in the estuary and its surrounds."*

In terms of road transport, the Plan accepts the decline in government funds but recognises that in the interim localised measures to upgrade sections of the national road network, including the creation of localised bypasses in order to facilitate better economic competitiveness for the region and enhance safety, should be examined.

Specific recommendations with regard to the N21 and N69 corridor within the plan are as follows:

National Road Recommendations		
3	N21	Review the corridor improvements and connection to Newcastle West, giving consideration to N69 connection (refer point 9 below)
9	N69	Primary access route to Shannon Foynes Port requires complete upgrade and consideration of connection with N21
13	N69	Upgrade the road access to Foynes Port to motorway standard

### 3.3.11 Smarter Travel, A Sustainable Transport Future 2009 – 2020

*Smarter Travel, A Sustainable Transport Future 2009 - 2020* presents a transport policy framework for Ireland covering the period up to 2020. The policy, launched by the Department of Transport in 2009, sets out a vision, goals and targets to be achieved, and outlines 49 actions that form the basis for achieving a more sustainable transport future.

In terms of the movement of goods and freight Smarter Travel notes that:

- *"Efficient movement of goods is vital to our economic competitiveness and economic welfare"*

Action 10 of Smarter Travel states that we will:

- *"Ensure that the Department of Transport deals with freight policy issues in a more integrated manner and prepares a specific strategy for the freight sector. We will set a target aimed at reducing the environmental impact of freight while at the same time improving efficiency in the movement of goods and promoting economic competitiveness";*
- *"Develop key logistics centres to transfer goods to more sustainable forms of transport for final delivery in urban areas"*
- *"The potential of Intelligent Transport Systems and Services to improve efficiency."*

Whilst the document does not present a definitive list of requirements with respect to new infrastructure, it is nevertheless necessary to understand the compatibility of the proposed scheme with the actions set out in the policy document. In addition to the issue raised in regard to freight movements above a number of key actions are considered in the policy document of which two are addressed by the proposed scheme as follows:

*Actions aimed at ensuring that alternatives to the car are more widely available, mainly through a radically improved public transport service and through investment in cycling and walking.*

The discussion of public transport within Smarter Travel distinguishes between Significant Urban Areas and Rural Areas. For public transport, the focus in urban areas is a transfer from car use to fast and frequent public transport services in order to reduce congestion and emissions in densely populated areas. For rural areas, public transport attracts less demand as a result of the dispersed population, and hence there is limited congestion or environmental benefit to be realised. Instead, rural services are focused more on filling a social need, providing access for those who do not have access to private means of transport. The proposed scheme will however support the Smarter Travel initiative through improving accessibility for rural public transport services.

*Actions aimed at improving the fuel efficiency of motorised transport through improved fleet structure, energy efficient driving and alternative technologies*

Actions under this heading are more related to vehicles and driving methods. However more stable speeds and reliable journey times with improved fuel efficiencies will result from reduced queuing and braking related to traffic which would have passed through villages and towns to be bypassed by the proposed scheme.

### *3.3.12 Harnessing our Ocean Wealth*

Launched in July 2012, Harnessing Our Ocean Wealth is an Integrated Marine Plan (IMP), setting a roadmap for the Government's vision, high-level goals and integrated actions across policy, governance and business to enable Ireland's marine potential to be realised.

The plan recognises that the country's ocean wealth will be a key element of our economic recovery and sustainable growth, generating benefits for all our citizens, supported by coherent policy, planning and regulation, and managed in an integrated manner. Three high-level goals, based on the concept of sustainable development are identified within the plan:

- Goal 1** *focuses on a thriving maritime economy, whereby Ireland harnesses the market opportunities to achieve economic recovery, socially inclusive and sustainable growth.*
- Goal 2** *sets out to achieve healthy ecosystems that provide monetary and non-monetary goods and services (e.g. food, climate, health and well-being).*
- Goal 3** *aims to increase our engagement with the sea, strengthening our maritime identity and increase our awareness of the value (market and non-market), opportunities and social benefits of engaging with the sea.*

The vision and goals have been framed within the context of what is happening at the broader global and EU levels, particularly the Integrated Maritime Policy for the European Union, recognising the contribution the 'blue economy' can make to global economic growth and the need for appropriate policies, strategies and funding mechanisms to enable this. Harnessing Our Ocean Wealth 2020 Targets:

- Double the value of our ocean wealth to 2.4% of GDP by 2030.
- Increase the turnover from our ocean economy to €6.4bn by 2020.

To achieve these targets the plan identifies that enabling infrastructure (e.g. ports, piers, the electricity grid and research infrastructure) is essential for harnessing our ocean wealth at national, regional and local levels. The Plan identifies key actions that need to be taken including:

1. Maximising the utilisation of existing state maritime infrastructure through multi-purpose usage and sharing, in support of operational programmes, research, test and demonstration and monitoring.
2. Supporting national, regional and local initiatives aimed at tapping into the potential of new and existing coastal infrastructure to develop sustainable products, services and jobs. This would encourage investment along the coast. Initiatives include supporting major national seaports in the implementation of their master plans to provide additional capacity and greater draught using their own resources.

The improved road transport network provided by the improved Foynes - Limerick road will support the aims and targets of the Harnessing Our Ocean Wealth plan by improving transport connectivity to the port.

### 3.4 Policy Summary

The development of an improved road between Foynes and Limerick is required under the European TEN-T regulations to meet the requirements of a Core Road. Furthermore the governments recently released capital investment plan "*Building on Recovery: Infrastructure and Capital Investment 2016 – 2021*" has identified two specific projects that can be addressed by the provision of an improved road link between Foynes and Limerick, namely:

- Adare By-Pass; and
- N69 Shannon to Foynes Road.

In addition to the above, a significant quantum of National and Regional policy and planning documents, including but not limited to the *National Ports Policy (2013)*, the *Shannon Foynes Port Company Masterplan – Vision 2014* and the '*Strategic Integrated Framework for the Shannon Estuary 2013 to 2020*', have further identified the requirement for this road and support the objectives of an improved road between Foynes and Limerick.

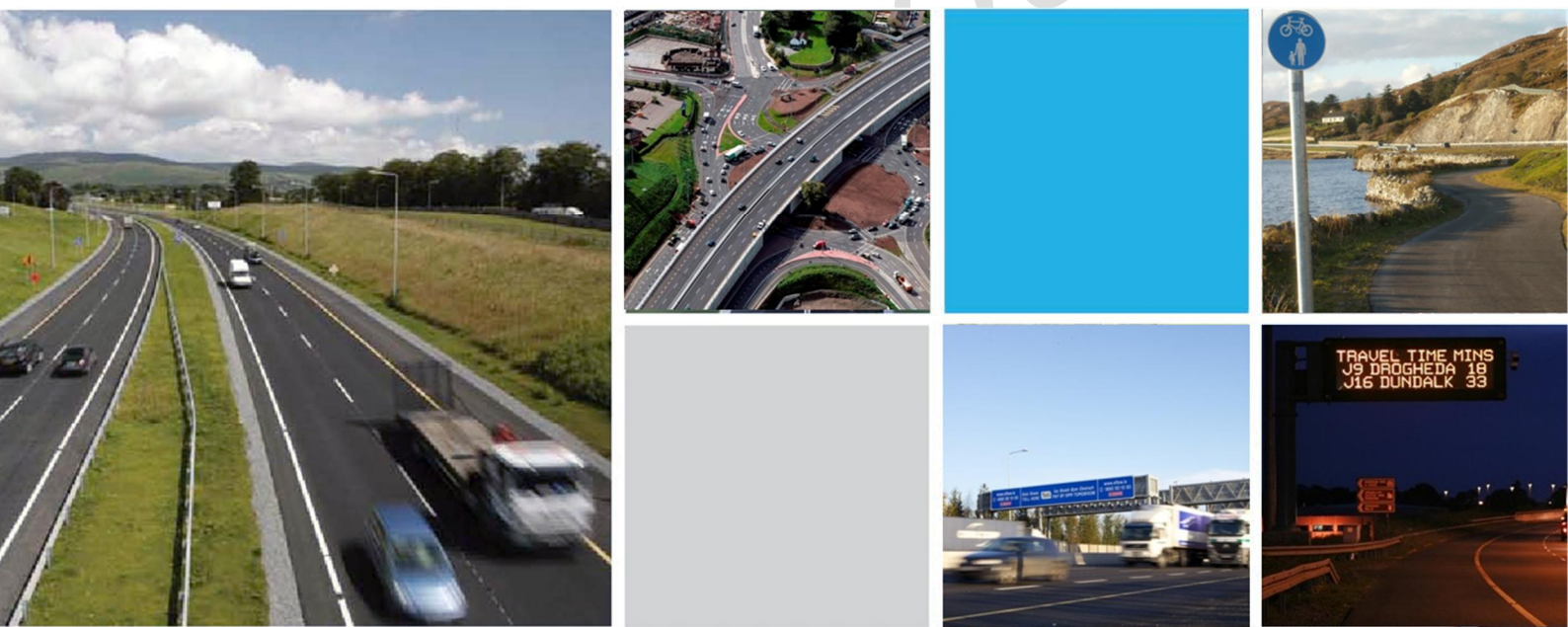
### 3.5 Need for the Scheme Summary

The main reasons for consideration of a scheme to provide an improved road link between Foynes and Limerick are as follows:

- A. Policies at European Union level, as expressed in the TEN-T requirements, supplemented by policies at National, Regional and County levels have identified an objective for a high quality road to connect Foynes to the core road network and to thus underpin the economic development of the Mid-West region through improved land transport for the Port of Shannon-Foynes.
- B. The existing N69 between Foynes and Limerick is a relatively low quality road that poorly serves its purpose for access by HGV's to the port of Foynes due to deficient and inconsistent width, low speed and poor alignment with tight bends and restricted visibility.
- C. There is a requirement to address the existing infrastructural deficit on the N21 corridor as evidenced by severe traffic delays in Adare.

## Chapter 4

### Scope, Constraints and Interfaces





## **4 Scope, Constraints and Interfaces**

### **4.1 Overview**

The scope of the project is to provide a high quality road link, in line the requirements of the TEN-T, between Foynes and the existing motorway network in the vicinity of Limerick City.

### **4.2 Constraints**

The proposed scheme will see a new road link provided from Foynes to the existing motorway network in the vicinity of Limerick City. The scheme options developed attempt to utilise, to the greatest extent possible, existing infrastructure and stay within existing landtake.

However, in order to fulfil the TEN-T requirements the scheme options developed include substantial offline sections. A number of natural constraints have been identified in the study area and need to be considered in the design process. These included but were not limited to the following:

- Existing road network, including the N69, N21, N18 and N20/M20 and significant regional roads;
- Towns and villages along the N69, including Foynes, Askeaton, Kilcornan, Kildimo, Clarina and Mungret;
- Towns and villages along the N21 and M20, including Rathkeale, Croagh, Adare, Partickswell, Raheen Business Park and Dooradoyle;
- The Foynes-Limerick railway line;
- Rivers Maigue, Deel and the Lower River Shannon (SAC);
- Curraghchase Woods Special Area of Conservation (SAC);
- The Askeaton Fen Complex SAC; and
- Barrigone SAC.

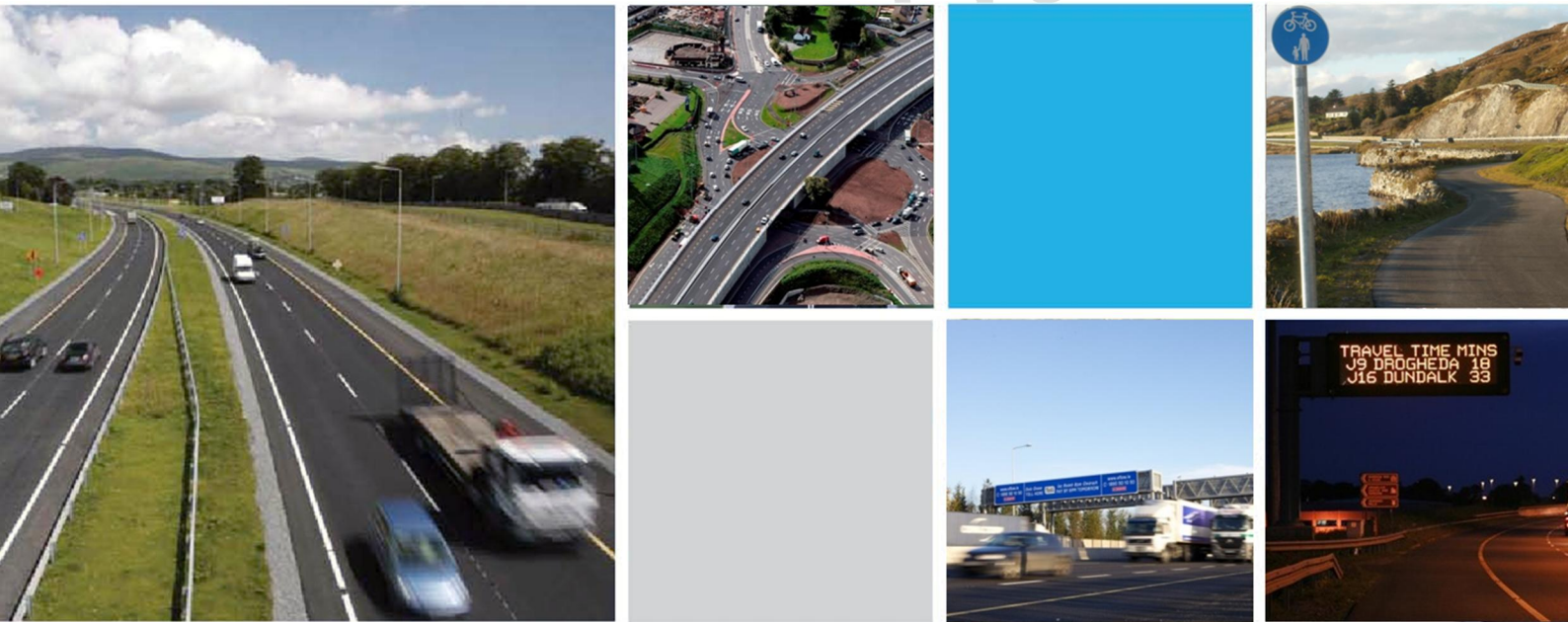
### **4.3 Interface**

The existing road network that the scheme is likely to interface with includes:

- N69;
- N20/M20;
- N21;
- N18; and
- Numerous local and regional roads.

## Chapter 5

### Scheme Objectives



## 5 Scheme Objectives

### 5.1 Overview

This section of the report sets out the objectives of the scheme which are developed to meet the needs of the scheme. On the basis of the deficiencies of the existing corridors as outlined in Section 2 and responding to the aspirations of European, national and strategic policy documentation as outlined in Section 1, a series of defined objectives have been developed and are presented in the following sections.

### 5.2 Scheme Objectives

The framing of scheme objectives has been undertaken in accordance with the guidance provided in the NRA's Project Appraisal Guidelines - *PAG Unit 3.0: Project Brief*. That document includes a recommendation that scheme objectives are established which fall under the criteria included in the Common Appraisal Framework, inter alia:

- Economy;
- Safety;
- Environment;
- Accessibility & Social Inclusion; and
- Integration

#### 5.2.1 Economy

The proposed corridor will form part of the Core EU TEN-T network which aims to promote growth and competitiveness, remove bottlenecks, upgrade infrastructure and streamline cross border transport operations for passengers and businesses throughout the EU. Key economic objectives which form part of this initiative include:

- To contribute to enhancing the internal market and strengthening territorial, economic and social cohesion;
- To improve the efficiency of the road between Foynes and the core road network;
- To reduce bottlenecks, journey and traffic delays on the overall network; and
- To improve journey time reliability and to reduce stop/start conditions particularly for heavy goods vehicles on the overall network.

#### 5.2.2 Safety

From a safety perspective the purpose of the scheme is to provide a safer road that will reduce the number of collisions and casualties (particularly fatalities) on both the proposed road and the existing road network supported by the improved route. The key safety objectives are:

- To reduce the frequency and severity of collisions on the overall network by providing a safer alternative route for all traffic;
- To improve safety for vulnerable road users; and
- To support the Government's Road Safety Strategy.

### 5.2.3 *Environment*

Air quality and noise pollution are significant issues, particularly in urban areas. Vehicles travelling at low speeds or queuing through towns and villages along the existing N21 and N69 generate high levels of emissions as a result of continuous braking and accelerating. Key environmental objectives of the scheme include:

- To reduce greenhouse gas emissions and in so doing reduce the impact on climate;
- To improve air quality in urban areas through a reduction in traffic congestion; and
- To reduce the level of noise to acceptable levels.

### 5.2.4 *Accessibility & Social Inclusion*

The scheme will provide a high quality road that will improve accessibility between Foynes and Limerick. The scheme will also improve conditions for road based public transport by removing congestion along this section of the corridor.

The scheme will achieve the objectives of the EU TEN-T plan, the Capital Investment Plan, Regional Planning Guidelines and the Limerick County Development Plan together with Regional and Local Area Plans to generally improve quality of life and improve accessibility to work and other activities. Key relevant objectives include:

- To achieve the goals of the TEN-T Core network by providing a high quality road which will contribute to enhancing social cohesion within Ireland and across the EU;
- To improve road based public transport by improving journey times and journey time reliability; and
- To achieve the accessibility objectives as contained in EU, national, regional and local planning policies.

### 5.2.5 *Integration*

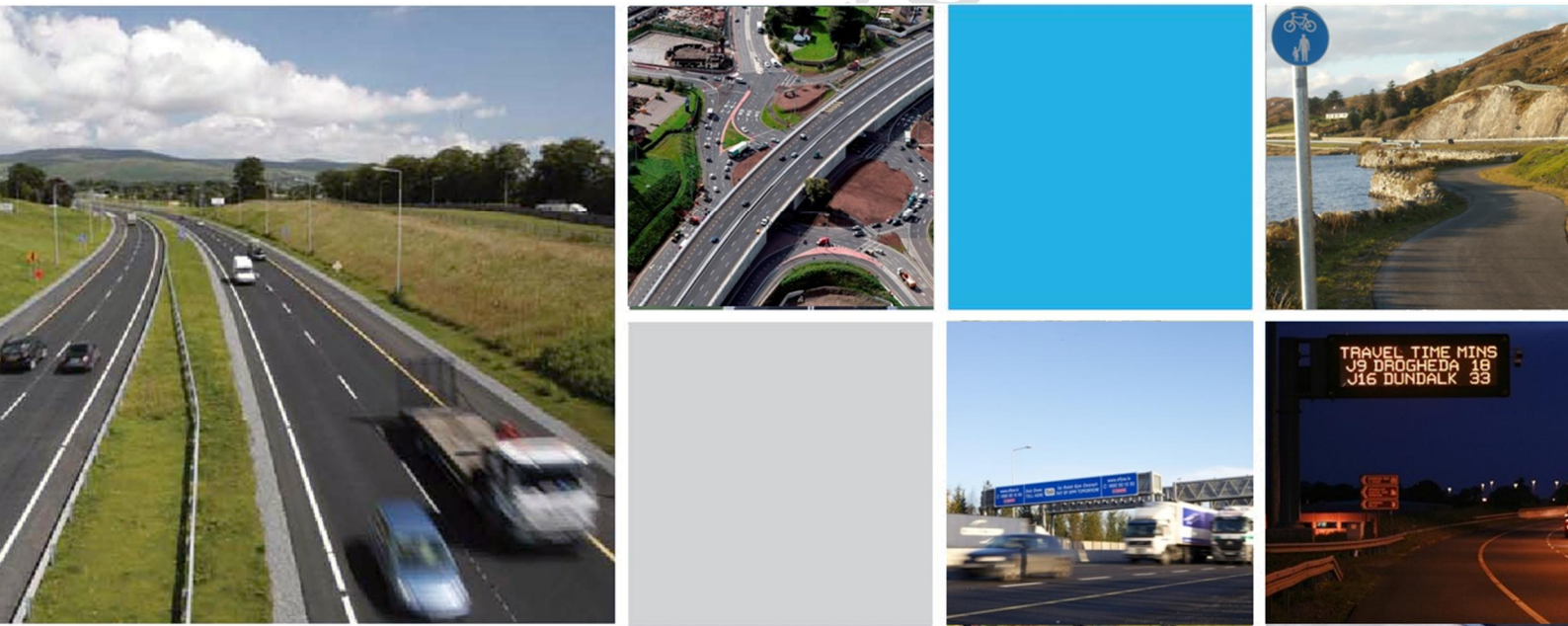
The proposed scheme is required to integrate with general policies and plans under the headings of Transport, Land Use, Geographical and Government Policy. The following objectives are outlined for integration:

- To improve connectivity to the national road network;
- To improve access between the port of Foynes and the core road network;
- To be compatible with adopted land use objectives;
- To improve transport links with Europe and the rest of the world; and
- To complement wider government policy.



## Chapter 6

### Functional & Operation Outcomes



## 6 Functional & Operation Outcomes

### 6.1 Design Standards

Design is to be in accordance with the NRA Design Manual for Roads and Bridges (DMRB). The road cross section, junction types and design speed for the road have yet to be determined.

### 6.2 Performance Targets

In order to meet the NRA Requirements / Standards for a new or upgraded National Road the road should, as a minimum, have the following characteristics:

- The road should be designed to DMRB Standards to provide as a minimum an average inter-urban speed of at least 80km/h which relates to a Level of Service (LOS) of D during peak traffic flows in the Design Year of the project (15 years after the opening of the road). The USA Highway Capacity Manual defines six levels of service ranging between A (free flow) and F (forced or breakdown flow) with LOS of D relating to stable flows conditions.
- Continuous or generous opportunities for overtaking.
- The roads should aim to limit or remove all direct access other than at junctions with other roads.

In addition to the above requirements the TEN-T requirements necessitate that for the Core network the road should be free of direct access. As result of the significant numbers of accesses, road frontage and significant lengths of horizontal curvature that need to be addressed to meet the required standards, the current N69 and N21 do not meet the TEN-T requirements for a high quality road.