

# CORK TO THE WORLD

## Updated Economic Assessment of the N28 Cork to Ringaskiddy Scheme.



**Cork**  
**CHAMBER**  
IN BUSINESS FOR BUSINESS

**Indecon**

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# EXECUTIVE SUMMARY

## Introduction and Key Findings from Research

This report builds on Indecon's previous assessment undertaken in 2010 and re-establishes and re-affirms the economic value and wider importance of completion of the upgrade of the N28 road between Cork and Ringaskiddy. Specifically, the assessment demonstrates that the scheme represents an important catalyst project for the economic development of Cork and the South-West region through the reinforcement of internal and external connectivity and the removal of a significant constraint to the international competitiveness of the region.

The assessment highlights the following key benefits that would arise from completion of the N28 upgrade:

- > Internal direct transport benefits in the form of reduced journey times and costs (including associated environmental costs) for road users in the immediate N28 corridor;
- > Enhanced capacity to serve the external trading and connectivity requirements of the South-West's business community through facilitating the development of Port of Cork's operations at Ringaskiddy and ensuring the provision of adequate port capacity;
- > Improved capacity to serve and enhance the key industry cluster of multinationals and indigenous firms operating in the Ringaskiddy/Carrigaline area, and to support the development of the strategic IMERC maritime and energy research/industry cluster; and
- > The scheme's catalytic and influencing role in supporting wider regional development, including the development of the tourism sector and of the Cork Docklands.

## Economic Impacts of N28 Upgrade – Direct Transport Benefits

€83.4M  
to €140M

852 Estimated scheme  
construction-related jobs

Estimated Net Present Value of Transportation-related User Benefits of N28 Upgrade

Source: Indecon analysis

Overall, our assessment indicates that the scheme would deliver significant benefits for freight and commuter traffic along the N28 corridor. These impacts would take the form of prospective reductions in journey time and in vehicle operating costs, as well as reduced numbers of accidents and environmental emissions. These benefits would underpin the competitiveness of the South-West region by supporting the internal and external connectivity of the region.

Furthermore, the scheme would copper-fasten the role of the N28 as a strategic national primary route serving the EU TEN-T core transport network of which Port of Cork is part, as well as being complementary to the overall traffic management of the strategic national routes in the Cork Metropolitan Area.



## Threat to External Connectivity and Regional Competitiveness

A key issue concerns the potential economic detriments or costs that would result from non-completion of the N28 scheme in terms of the adverse implications for the external connectivity and competitiveness of the South-West region, in addition to the environmental costs. These costs would arise particularly if non-completion of the N28 upgrade were to impede the strategic development of port capacity at Ringaskiddy, thereby adversely impacting on the external trading requirements of the business community in the South-West region.

The Port of Cork is currently seeking statutory consent to develop its Ringaskiddy terminal, with the objective of facilitating the relocation over time of the port's existing activities from Tivoli and City Quays and to consolidate these trades at Ringaskiddy. Critically, this will enable the port to respond effectively to market developments, in terms of the projected growth in trade and the ongoing trends towards larger vessels serving this trade. The port is the second largest multimodal port in the State and is a 'Tier 1 Port of National Significance' under the Government's National Ports Policy framework. It has also been designated as a Core Network port under the EU's TEN-T, which requires provision of adequate motorway or express standard road linkages to core network ports.

Indecon's assessment clearly demonstrates that a failure to provide the N28 upgrade, by undermining the port's plans to expand its capacity at Ringaskiddy, would indirectly impede its ability to respond to market and port sector developments. In particular, failure to develop the port would result in an estimated loss in overall trade volumes of 27% relative to projected 2033 traffic. Importantly, this would imply that Port of Cork's share of national traffic in the key LoLo segment would decline from 22.7% in 2012 to less than 5% by 2033, which would undermine the commercial viability of the port. These adverse impacts on trade would be equivalent to an estimated loss in projected future trade growth amounting to €22.8 billion when measured in present value terms. This would also translate into a loss in potential future employment, which could amount to an estimated 57,472 jobs by 2033 compared to what could otherwise be supported if Ringaskiddy Port is fully developed as planned. The estimated loss in trade to the port would also give rise to substantial environmental costs through the additional transport and CO2 emissions that would arise if the trade lost to Cork had to be diverted to more distant ports.

### Economic Impacts of N28 Upgrade – Adverse Implications for Future Port Development and External Connectivity of Non-Completion of Scheme

**-€22,768M**

Estimated future loss in value of trade through  
Port of Cork – Present value over period 2012-2033

**-57,472**

Estimated loss in future employment  
supported - 2012-2033 – FTEs

Source: Indecon analysis

### Role of N28 in Enhancing Ringaskiddy Industry and Research Cluster

The assessment also examined the strategic role played by the N28 upgrade as a catalyst for enhancing the economic potential of the Ringaskiddy/Carrigaline area. This relates to the presence in the area of one of Ireland's foremost industrial clusters, as well as the important IMERC maritime and energy strategic research and industry cluster.

A range of factors influence decisions on foreign direct investment. However, given the existing major industry cluster in the area, by addressing existing transportation constraints and the poor impression presented to potential investors, completion of the N28 upgrade would be expected to provide a catalyst for further investment in the Ringaskiddy area. Scenarios examined by Indecon indicate that development of the IDA's available sites in the area could directly support additional employment of up to 2,228 persons and associated incomes of up

to €173 million. This additional activity would also support significant wider economic spin-offs in the local and regional economies.

In addition to enhancing the employment potential of IDA sites, the N28 upgrade would also underpin the development of the IMERC campus, as well as support the ongoing expansion of the National Maritime College and the Irish Naval Service at Haulbowline. The IMERC campus is designed to strategically position Ireland to capture global research and commercial opportunities in the maritime and marine energy sectors. While all investment is subject to considerable uncertainty, the campus, if fully developed, would have the capacity to accommodate over 2,000 jobs in research and commercial activities. As in the case of the pharma industry cluster, the potential to deliver these additional economic impacts is curtailed by the existing capacity and accessibility issues on the N28.

## The N28 as a Catalyst for Wider Regional Economic Development

The study also examined the role of the N28 upgrade in acting as a catalyst or facilitator of tourism and wider regional development.

We examined the potential for the N28 upgrade to play an influencing role in the redevelopment of the Cork Docklands. This would take place primarily through addressing the indirect but important prerequisite of facilitating the relocation downriver of the Port of Cork's current operations at City Quays and Tivoli, thereby opening up these sites for redevelopment and providing a catalyst for the wider redevelopment of the docklands. Recent assessments undertaken by Cork City Council indicated a potential to support up to 7,000 additional jobs in the docklands by 2021, although there is considerable uncertainty attached to any such estimates.

While the N28 upgrade is relevant and significant, it is not necessarily uniquely instrumental to the re-development of the Cork Docklands, the viability of which is dependent on a range of factors. However, by facilitating the relocation over time and consolidation of the Port of Cork's operations at Ringaskiddy, the completion of the upgrade would have an indirect influencing role in facilitating 'planning gain' for Cork and opening up the potential to redevelop the Cork Docklands.

The N28 upgrade could also act as a catalyst for the development of tourism in the South-West region, through both maximising accessibility to a redeveloped Spike Island and other locations in Cork Harbour, and through improving access to Cork and the wider South-West region for visitors arriving by ferry through Ringaskiddy Port.

## Social and Environmental Impacts

**It is also important to highlight the social and environmental benefits that would arise from completion of the N28 upgrade or, conversely, the costs that would attend a failure to complete this critical infrastructure project. These include:**

- > The social benefits of the N28 upgrade in terms of reduced travel times and increased quality of life for commuters along the N28 corridor;
- > The benefits through increased road traffic safety and reduced accidents along the N28;
- > The environmental benefits of the N28 upgrade arising through the reduced traffic congestion, increased vehicle operating efficiency and reduced CO2 emissions; and
- > The environmental costs of non-completion of the scheme that would arise from failure to facilitate the development of Ringaskiddy Port, with the consequent additional transport costs and CO2 emissions that would arise if the trade lost to Cork had to be diverted to more distant ports such as Dublin Port.

## Overall Conclusions and Recommendations

Indecon's detailed analysis and assessment in this study re-affirms the strong economic arguments for channelling investment into the N28 upgrade as a key strategic infrastructural project of national as well as regional importance:

- > The economic rationale for the scheme is most evident in relation to the intrinsic linkage between the N28 and the development of Ringaskiddy Port. The latter will be critical in reinforcing external connectivity and removing constraints to the international competitiveness of the region. Failure to develop Ringaskiddy Port would have substantial costs in terms of competitiveness, as well as trade growth and future employment creation that would otherwise be lost. Ensuring that the N28 access corridor has the capacity to serve the projected growth in trade at the port is therefore of critical importance in this context.
- > The N28 upgrade would also play a catalytic role in delivering important potential wider economic benefits, including through enhancing the strategic bio-pharma industry cluster and the development of the IMERC research/industry cluster in Ringaskiddy, supporting the development of tourism, and providing an indirect role in facilitating the redevelopment of Cork Docklands.
- > These port-related and wider economic impacts would be in addition to the transport-related user benefits and construction employment that would arise from completion of the scheme.

**Based on our latest assessment of wider impacts and completion of a cost-benefit appraisal on the transport user benefits of the scheme, Indecon's believes that there is an existing strong economic and social rationale for completing the N28 upgrade.**

**We would issue the following recommendations designed to support rigorous examination of the economic case for funding this key infrastructural project:**

1. A detailed and rigorous cost-benefit appraisal of route options should be undertaken in line with Department of Public Expenditure and Reform Public Spending Code and NRA guidelines.
2. Given the strategic nature of the N28 route, which forms part of the EU TEN-T core network, the wider impacts of the scheme, including productivity, agglomeration and labour supply impacts, could be significant and in principle should form part of a comprehensive appraisal process.
3. Careful consideration should be given in the route corridor design to the wider implications of the scheme, particularly in relation to the final leg and accessibility in the Ringaskiddy area to the port site, as well as IDA sites, the NMCI and the IMERC campus.
4. A range of innovative funding options should be considered for the scheme, including PPP and EU funding approaches. These may include funding through the TEN-T Tier 1 fund.



# 1. INTRODUCTION & BACKGROUND

## 1.1 Introduction

This report is submitted to Cork Chamber by Indecon International Economic Consultants. The report is an independent assessment of the potential economic benefits of the upgrade of the N28 road from Cork to Ringaskiddy and the potential costs that would be incurred in the event that the upgrade does not go ahead. The assessment re-establishes the economic case previously examined in Indecon's 2010 assessment for the Chamber and considers the economic benefits both locally and in the wider regional and national contexts.

## 1.2 Terms of Reference

The overall objective of the assessment is to build on Indecon's previous assessment in 2010 and to re-establish and re-affirm the economic value and wider importance of completion of the N28 scheme. Specifically, the assessment re-examines the transportation and port-related external connectivity implications of the scheme. The study also assesses the potential benefits of the scheme in terms of providing a catalyst for a number of developments in the Cork area, including:

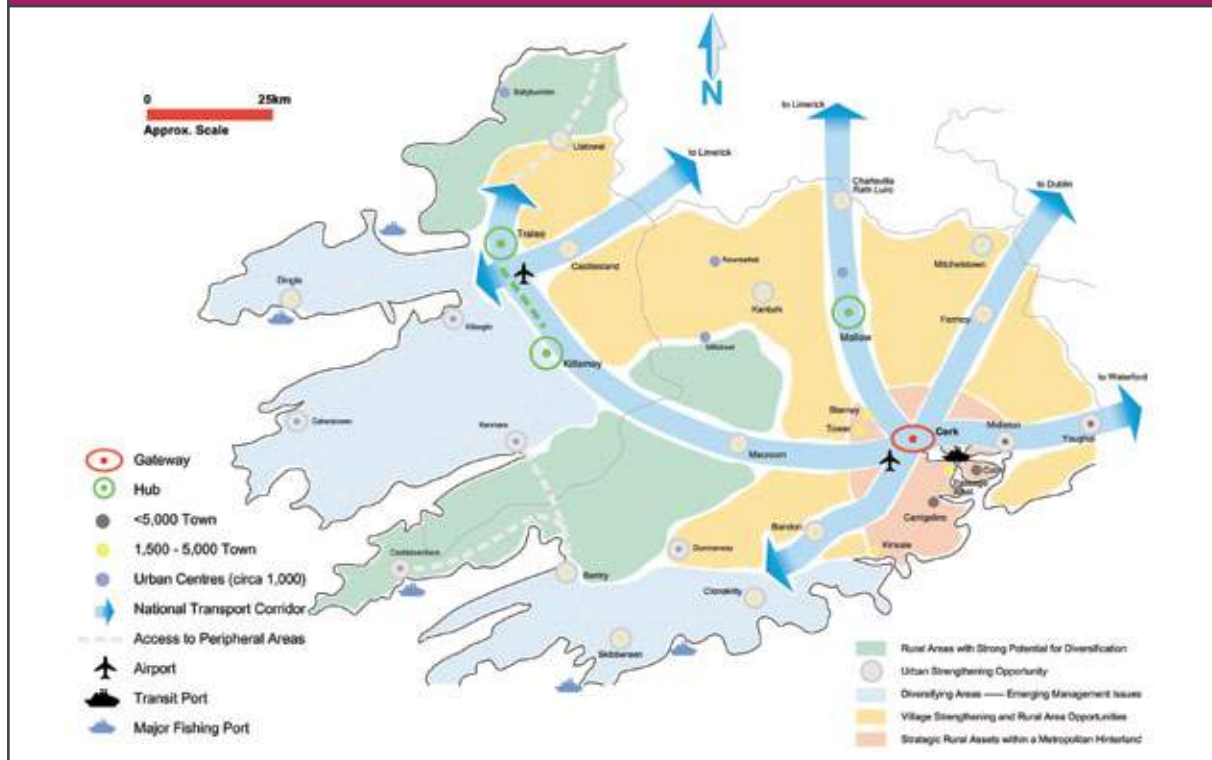
- > Connectivity and Competitiveness: The role of the N28 upgrade in ensuring the internal and external connectivity and competitiveness of the South-West region. This includes the direct transportation-related benefits of the scheme, in addition to the indirect/wider benefits of the scheme for the external connectivity and competitiveness of the region;
- > Catalyst for Enhancing the Ringaskiddy Industry Cluster: The role of the N28 upgrade in enhancing the nationally and internationally important Ringaskiddy/Carrigaline industry cluster through facilitating the development of major IDA Ireland-owned sites and attracting further foreign direct investment into this area;
- > Catalyst for facilitating development of IMERC research/industry cluster: The role of the scheme in acting as a catalyst to support the development of the nationally strategic Irish Mar-itime and Energy Research Cluster (IMERC); and
- > Catalyst for Wider Regional Economic Development: The potential for the N28 upgrade to act as a catalyst project for the wider economic development of the South-West region, including through the influencing role that scheme could play in the redevelopment of the Cork Docklands, in addition to its role in supporting the development of tourism in the region.

## 1.3 Background and Economic Context

The background to this assessment is that Cork, as the key southern Gateway City, requires a strong, diverse and vibrant economy. To achieve this, it is critical that an adequate level of physical infrastructure is provided which maximises internal and external connectivity, and the overall competitiveness of Cork and the wider South-West region.

The South-West is the second most important of the eight regions in the State in terms of its contribution to Irish GDP and employment. The Cork Metropolitan Area also acts as the focal point of the South-West region. The figure overleaf highlights the Cork Gateway and the South-West region in the context of the Government's National Spatial Strategy.

Figure 1.1: Cork Gateway and the South-West Region



Source: National Spatial Strategy

Ringaskiddy is home to a major deepwater port and a Roll-On, Roll-Off (RoRo) ferry terminal. The Port of Cork is the second largest multimodal port in the State and is a 'Tier 1 Port of National Significance' under the Government's National Ports Policy framework. The port has also been designated as a Core Network port under the EU Trans-European Transport Network (TEN-T), in recognition of its strategic importance to the island of Ireland.<sup>1</sup> The latter places the N28 route along one of the EU TEN-T's priority corridors and stipulates that Member States must take appropriate measures to ensure that the core network is developed, including provision of adequate motorway or express standard road linkages to core network ports. The Port of Cork is currently seeking statutory consent to develop its Ringaskiddy terminal, with the objective of facilitating the relocation over time of the port's existing activities from Tivoli and City Quays and to consolidate these trades at Ringaskiddy. Critically, this will enable the port to respond effectively to market developments, in terms of the projected growth in trade and the ongoing trends towards larger vessels serving this trade. In 2008, the port was refused planning permission for a major new deepwater port at Oyster Bank in Ringaskiddy. The premature nature of the proposed development pending the upgrading of the N28 was identified as a key factor constraining planning consent. The development of Ringaskiddy Port and the completion of the N28 upgrade are therefore intrinsically linked.

Ringaskiddy also hosts the strategically important cluster of major multinational bio-pharma companies, some of which have been operating in the area since the 1960s. The cluster currently employs almost 3,500 people and accounts for the majority of exports sales of pharmaceutical products and a significant proportion of the overall value of Irish merchandise exports. The potential to leverage significant further foreign and indigenous investment in the Ringaskiddy area is, however, constrained in part by the current weaknesses in transport connectivity and road capacity in the area.

The N28 also provides access to University College Cork's (UCC) new Beaufort Laboratory, the National Maritime College, the Irish Naval Service headquarters at Haulbowline and the IMERC strategic research/industry cluster.

1. The revised EU Ten-T regulation was signed into force in December 2013. See: <http://eur-lex.europa.eu/legal-content/EN/ALL/?uri=CELEX:32013R1315>. Annex 2 indicates that Port of Cork is one of the nodes of the core network, while Article 38(3) stipulates the requirement to ensure appropriate development of the core network.

IMERC, which is a partnership involving UCC, the Cork Institute of Technology/National Maritime College and Irish Naval Service, was established in 2010 to strategically address global research and commercial opportunities in the maritime and marine energy sectors. The Maritime College in addition to UCC's new Beaufort Laboratory and the IMERC campus (which is located to the east of Ringaskiddy Village) together have the potential to generate substantial additional employment in the area. As in the case of the pharma industry cluster, the potential to deliver these impacts is curtailed by the existing capacity and accessibility issues on the N28.

The constraints embodied within the existing N28, which experiences congestion leading to very significant delays for commercial and commuting traffic on a daily basis, and the Port of Cork's ongoing dependence on its City Centre and Tivoli facilities, are seen as having a major impact on the present and future competitiveness of the region. Moreover, the importance of the N28 upgrade in facilitating the strategic movements of goods and people to and from the Cork region has been highlighted in key national and regional policy documents, including the National Spatial Strategy, the National Ports Policy and the Cork Area Strategic Plan.

The proposed Bloomfield Interchange to Ringaskiddy scheme consists of approximately 13km of motorway or high quality dual carriageway. A preferred route corridor was originally identified in 2006 and the project was advanced to compulsory purchase order (CPO) and tender stages. However, the project was subsequently suspended due to the financial and economic crisis, and reflecting the National Road Authority's (NRA) prioritisation of the major inter-urban routes at that time. In July 2013, the Minister for Transport, Tourism and Sport asked the NRA to take due account of the Government's recent National Ports Policy in framing its investment programme in the coming years, particularly in the context of Tier 1 Ports, including Port of Cork, which will form part of the EU's TEN-T core network and to ensure adequate connectivity to/from the port. This subsequently led to a decision to proceed to advance the N28 upgrade. However, funding has not yet been committed to the project.

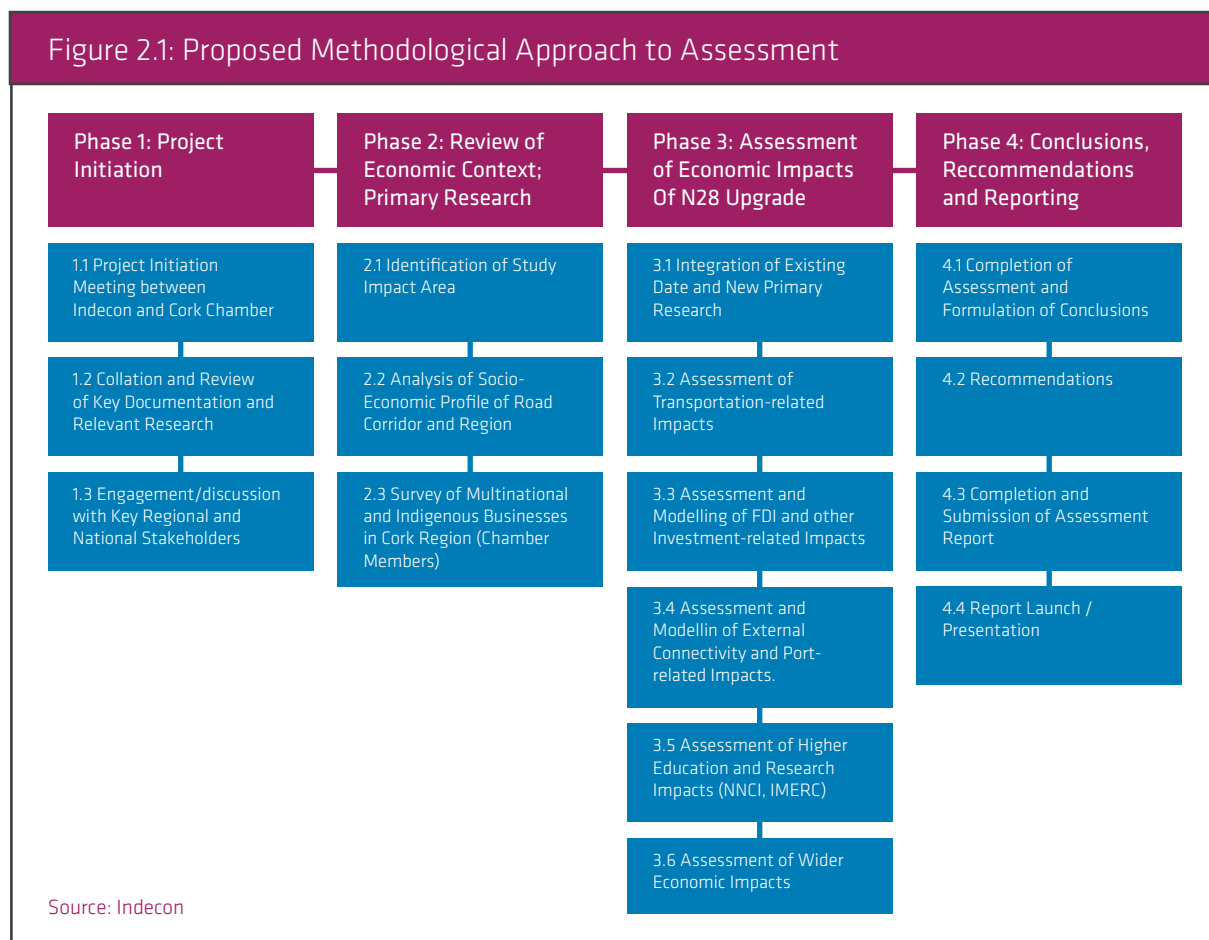
Reflecting the above context, the Cork Chamber have commissioned Indecon to undertake an updated assessment of the N28 upgrade, with the objective of re-establishing and re-affirming the economic importance of completion of the scheme, ensuring that the scheme design is optimal from the perspective of maximising its impact, and strengthening the rationale for funding the required investment.



## 2. METHODOLOGY

### 2.1 Introduction

This updated assessment of the economic benefits and importance of the N28 upgrade was completed on the basis of a four-phased methodology. A schematic summary of the methodology and work programme applied in completing the assessment is presented in the figure below.



### 2.2 Consultation Programme and Primary Research

This assessment benefited from an extensive programme of engagement with a range of stakeholders. This involved face-to-face discussions and engagement with local and national government and other bodies and organisations, in addition to key sectoral representative organisations. A list of consultees is provided in Annex 1.

Extending the approach applied in Indecon's 2010 assessment, the analytical components of this assessment were supported by new primary research, in the form of a survey of the business community in Cork. This research, which entailed a survey of Cork Chamber business members, accessed the views of companies/businesses in relation to a range of aspects of the economic impacts of the N28 upgrade.

A summary of the key findings from the survey of businesses can be found in Section 7, while additional findings are presented in Annex 2.

## 2.3 Analytical Methodologies

A range of analytical methodologies has been applied in completing this assessment. These methodologies have enabled quantified estimation of the economic benefits of completion of the N28 upgrade, as well as the potential economic detriments or costs that would arise through non-completion of the project. In particular, the following analyses were undertaken:

### > **Transportation-related Benefits of the N28 Upgrade:**

- Examination of recent appraisal work undertaken by the National Roads Authority and Cork County Council;
- Development of indicative updated estimates of projected user benefits and completion costs associated with the scheme and estimation of updated net economic return and benefit-cost ratios; and
- Assessment of the importance of optimal route design, including in relation to the 'final leg' in the Ringaskiddy area.

### > **External connectivity and port-related Impacts:**

- Examination of wider economic and policy context, and port sector trends driving Port of Cork's development/capacity requirements;
- Estimation of economic value and employment supported by existing trade and operations of Port of Cork;
- Identification of the importance of the N28 upgrade in facilitating the planned expansion of Ringaskiddy Port; and
- Detailed assessment of port traffic growth under alternative scenarios, identifying trade-at-risk and potential loss in economic value and employment arising from failure to address port capacity requirements.

### > **The N28 Upgrade as a catalyst for enhancing the strategically important Ringaskiddy industry and research cluster:**

- Updating of scenarios pertaining to the development potential of IDA Ireland-owned industrial development sites in the Ringaskiddy/Carrigaline area, including estimation of employment and income generation impacts arising from alternative development/investment scenarios; and
- Examination of the potential economic impacts of the IMERC maritime and energy strategic research and industry cluster, and the National Maritime College in Ringaskiddy.

### > **The N28 as a catalyst for the wider development of the South-West region:**

- Assessment of the catalytic role of the N28 upgrade in supporting the development of tourism in the region, including the development of Spike Island; and
- Examination of the influencing role of the scheme in realising the economic benefits of redevelopment of the Cork Docklands.

### 2.3.1 Definition of the South-West region

In undertaking this assessment, it is necessary to set out an appropriate definition to the geographic area or South-West region that will be impacted by the completion of the proposed infrastructure upgrade. For the purposes of this assessment, a definition for the overall study was developed comprising the following components:

- > The Ringaskiddy/Carrigaline hinterland of the existing N28 corridor;
- > A wider catchment area at sub-regional level represented by the Cork Metropolitan area; and
- > The overall South-West region, defined as the wider South-West region, i.e. the areas above in addition to the remainder of County Cork and County Kerry.





## 3.2 Net Transportation Benefits of N28 Upgrade

### 3.2.1 Scheme Benefits

The direct transport-related economic benefits of investing in a road improvement scheme are centred around the impacts on road users. These impacts take the form of prospective reductions in journey time, reductions in vehicle operating costs, and reduced numbers of accidents and related costs. The key variable will be the extent to which journey times are lowered as a result of the route development. The existing N28 route suffers from traffic congestion at a number of points along the route, with consequent implications for commuters and other road users.

A preliminary design report on the proposed N28 upgrade was prepared by Halcrow Barry on behalf of the NRA in 2007. This report examined the transport economic benefits of the project. Following this, while the proposed scheme was advanced to preparation for CPO and tender stages, the project was subsequently suspended due to the financial and economic crisis, and reflecting the NRA's prioritisation of the major inter-urban routes at that time. The scheme was re-examined in 2010 and 2013, based on alternative route options.

The analysis inputting to the 2013 appraisal has been made available to Indecon on a confidential basis for the purposes of this assessment. This compared different route design options, including a 13km corridor commencing at Bloomfield Interchange and terminating at Ringaskiddy East. The analysis indicated overall potential user benefits for the full-length route corridor of between €229.9 million and €289.5 million in present value terms over a 30-year appraisal period, based on alternative low- and high-traffic growth assumptions<sup>2</sup>. However, these estimates do not take into account the change in the economic and traffic environment since that assessment was prepared in 2010.

An updated, detailed cost-benefit appraisal was not within the scope of this assessment and Indecon understands that work is currently underway to examine a range of scheme options and associated impacts and cost implications. Indecon has developed indicative updated estimates of the economic benefits associated with completion of the scheme to reflect the reduction in network traffic since 2010 and these adjusted estimates suggest potential consumer and business user benefits of between €183.9 million and €231.6 million in present value terms over a 30-year period (these estimates are shown in Table 3.2 below).

As pointed out in Indecon's previous 2010 assessment, there are risks surrounding the estimated user benefits of the scheme, which are subject to revision based on economic developments and detailed design finalisation. Traffic levels have changed significantly since the economic recession. In addition, future traffic growth must be assessed within the context of developments along the N28 corridor and in the wider Cork network, including the N40 and the Dunkettle Interchange. However, Indecon's indicative estimates of scheme benefits, which reflect a prudent downward adjustment in the traffic growth trajectory for the N28 relative to previous estimates, nevertheless demonstrate that completion of the scheme would deliver very significant benefits in the form of journey time savings and user costs.

#### Construction related employment

The completion of the scheme would also provide immediate benefits in terms of employment supported during the construction phase. While precise figures of the number of labour inputs required for the scheme are not available, Indecon has derived a likely indicative estimate for the number of jobs supported during scheme construction through benchmarking with other comparable schemes. The table below presents our estimate of the number of jobs supported during the construction of the full length scheme, based on similar benchmarks. Indecon estimates that completion of the scheme could support a total of 852 full-time equivalent (FTE) jobs during the construction phase. These jobs would deliver associated incomes and economic spin-offs for the local and regional economies in Cork.

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2. Estimates based on average 2002 prices, discounted to 2002.

## Table 3.1: Indecon Indicative Estimate of Employment Supported during Construction of N28 Upgrade

**852** Estimated No. of Full Time Equivalent Jobs (FTEs)\*

Source: Indecon analysis, based on benchmarking with comparable schemes under completion or completed.

\* The estimate is based on an estimated construction cost component (i.e. excluding land and other costs) of €103.6 million and a ratio of 8.2 full-time equivalent construction jobs per €1 million of expenditure.

### 3.2.2 Scheme Costs

The overall economic appraisal must also take into account the costs of the project. These costs relate to construction and land/property costs. Construction costs generally have fallen significantly since the peak of the economic cycle in 2006/07, although some road-related cost areas have seen strong recent increases (for example, bituminous macadam and asphalt prices have seen a 40% increase since 2010). Completion of the scheme would also require the acquisition of land/property adjoining the route corridor. This includes lands transacting at agricultural prices as well as sites owned by the IDA. Indecon's 2010 assessment of the N28 scheme applied a substantial downward adjustment to previous estimates of land-take costs to reflect the market downturn. The agricultural land market has since stabilized and shown signs of recovery.

Taking into account the movements in construction and land costs since 2010 and also based on discussions with the NRA, Indecon has developed an adjusted estimate of overall costs associated with completion of the scheme (including construction, land and other costs), which we estimate at approximately €135 million in present value terms. This estimate is indicative only and actual costs may turn out lower or higher than estimated. Work is currently underway within the NRA to develop updated estimates of scheme cost based on alternative specifications.

### 3.2.3 Estimated Overall Economic Return

The table overleaf presents Indecon's indicative estimates of the overall benefit-cost ratio associated with completion of the N28 scheme.

Factoring in the adjusted benefits and costs, Indecon estimates a positive net present value associated with completion of the N28 upgrade scheme amounting to between €83.4 million and €140.0 million, or a Benefit-Cost ratio of between 1.62:1 and 2.04:1, depending on traffic growth assumptions. A full, detailed appraisal of the project should be undertaken in line with Department of Public Expenditure and Reform Public Spending Code guidance. However, Indecon's indicative estimates suggest that the N28 upgrade would be expected to yield a positive economic return in terms of the transportation-related user benefits of the scheme. The result is sensitive to the assumptions applied in relation to route length, traffic growth and scheme construction and land-take costs. However, the above estimated Benefit-Cost Ratio can be viewed as having a high level of resilience given that a reduction of more than 38% in the present value of estimated benefits or an increase of more than 62% in the present value of estimated costs would be required to move this ratio into negative territory.<sup>3</sup>

3. Indecon has also stress-tested the appraisal outcomes based on (a) a 10% lower level of assumed network traffic growth compared to the base case scenarios, and (b) a 10% higher scheme construction cost. Both tests demonstrate that the overall positive outcome remains robust to these alternative assumptions.

**Table 3.2: Indicative Estimates of Benefit-Cost Ratio for Completion of N28 Upgrade**

Cost-Benefit Elements	Present Value at Average 2002 Prices, Discounted to 2002 - Full Length Route	
	Low Growth	High Growth
Consumer User Benefits - €M	€118.9	€147.3
Business User Benefits - €M	€119.7	€150.7
Accident Benefits, Emissions and Other Impacts - €M	-€8.7	-€8.5
2010 Cork County Council / NRA Model: Estimated Present Value of User Benefits - €M	€229.9	€289.5
Indecon Adjusted Present Value of User Benefits (A) <sup>1</sup>	€218.37	€275.02
Indecon Adjusted Present Value of Scheme Costs (B) - €M <sup>2</sup>	€135.0	€135.0
Net Present Value ((A) - (B))	€83.4	€140.0
Benefit-Cost Ratio ((A) / (B)) - X : 1	1.62	2.04
<p>Source: Indecon analysis, informed by previous appraisal work undertaken by Halcrow Barry for Cork County Council and NRA</p> <p>1 Adjusted estimate based on estimated reduction of 5% in network traffic (AADT) between 2010 and 2013.</p> <p>2 Adjusted estimate to reflect movement in underlying construction and land costs between 2010 and 2013.</p>		

### Wider economic impacts

It should also be noted that the above estimates, as is generally the case in relation to cost-benefit appraisals applied to road schemes, are focussed on the transportation-related benefits associated with impacts on journey times, vehicle operating costs, accidents and environmental emissions. They do not take into account wider economic impacts, such as productivity, agglomeration and labour supply impacts. As the N28 will form part of the TEN-T core network, while the route will also serve the strategic industry and research clusters in Ringaskiddy, these wider impacts could be significant and in principle should therefore form part of a comprehensive appraisal of this strategically important scheme.

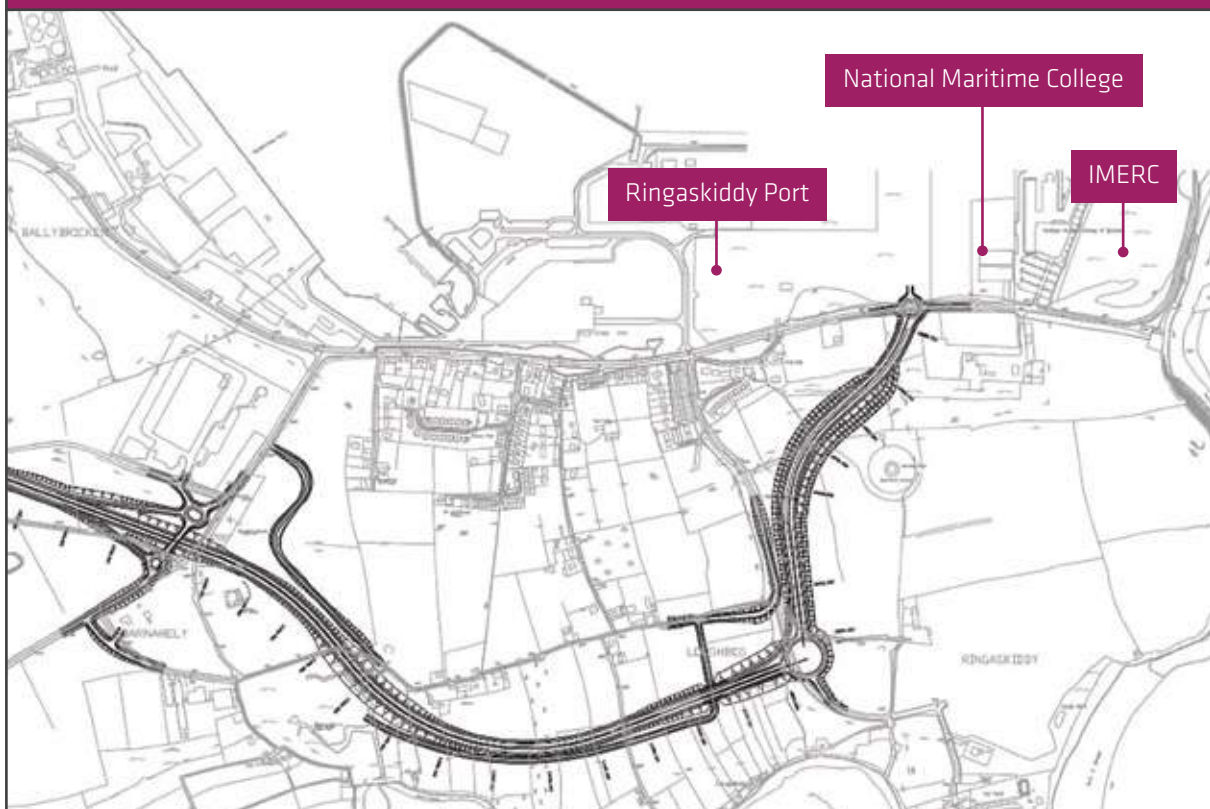
### 3.2.4 Design of final leg of scheme

An important issue requiring consideration from the perspective of maximising the economic benefits of the N28 upgrade concerns the design of the route corridor and, in particular, the final leg of the route in the Ringaskiddy area. Route options are currently being assessed by the NRA and Cork County Council. These could entail one of the following broad alternatives:

- > Completion of upgrade to motorway or high quality dual carriageway standard to terminate at the junction with the existing R613, with the latter re-joining the existing N28 west of Ringaskiddy village; or
- > Completion to same specification as above but with upgrade continuing past junction with the existing R613 on to a new roundabout at Loughbeg and terminating east of Ringaskiddy village.

The figure below provides a depiction of the second option above, highlighting the location of Ringaskiddy Port as well as the National Maritime College and the IMERC site. There are also a number of IDA strategic sites in the Ringaskiddy area, the accessibility to which would be enhanced through completion of a full-length route terminating at Ringaskiddy East. While the latter approach would entail additional construction costs, Indecon believes it is important that the assessment of route options for the N28 scheme fully takes into account the wider implications. The importance of the final leg of the route is examined further in this report.

Figure 3.2: N28 Upgrade – Final Leg Option: Termination at Ringaskiddy East



Source: Cork County Council



### 3.3 Summary of Key Conclusions

This chapter updated Indecon’s previous assessment undertaken in 2010 and re-examined the critical, direct transport-related connectivity benefits of the N28 upgrade. The direct transportation-related benefits of the project are estimated at between €83.4 million and €140.0 million in economic net present value terms, depending on future traffic growth assumptions. This implies a Benefit-Cost ratio of between 1.62:1 and 2.04:1, indicating that the project would be expected to yield a positive economic return. As well as these longer-run benefits, there would be an immediate benefit in the form of an estimated 852 jobs that would be supported during the construction phase.

**Table 3.3: Summary of Economic Impacts of N28 Upgrade – Transport Connectivity Benefits**

€83.4M  
to €140M

852 Estimated scheme  
construction-related jobs

Estimated Net Present Value of Transportation-related User Benefits of N28 Upgrade

Source: Indecon analysis

Overall, we continue to believe that the proposed scheme would underpin the competitiveness of the South-West region by supporting the internal and external connectivity of the region and by providing the transportation capacity required to meet expected growth in freight and commuter traffic along the N28 corridor. Furthermore, the scheme would copper-fasten the role of the N28 as a strategic national primary route serving the EU TEN-T core transport network, as well as being complementary to the overall traffic management of the strategic national routes in the Cork Metropolitan Area.

In the next chapters, the wider economic benefits that we expect can be leveraged from the upgrade of the N28 route are considered, as well as the economic costs that would arise through failure to complete the scheme.

## 4. EXTERNAL CONNECTIVITY AND PORT-RELATED IMPACTS

### 4.1 Introduction

A key issue concerns the importance of the N28 upgrade scheme in relation to external connectivity of the South-West region and the role of the Port of Cork in this context. Critically, in this section we assess the key issue of the potential economic detriments of costs that would result from non-completion of the scheme, in terms of the implications for the development of the Ringaskiddy Port and the external connectivity and competitiveness of the South-West region.

### 4.2 Context and Port Sector Trends

#### 4.2.1 Policy context

As a small open economy, Ireland is critically dependent on external trade to support its development. The overall value of goods exports and imports represents almost 86% of Irish economy Gross Domestic Product (GDP), while exports represent over 87% of the value of manufacturing output and almost 61% of raw material inputs used in the production of such goods.

The Port of Cork plays a key strategic trade and economic development role in this context. The port is the second largest multimodal and Lift-on Lift-off (LoLo) port in the Republic of Ireland, handling almost 23% of all LoLo trade, while it accounts for 21% of break bulk and almost 39% of the volume of liquid bulk trade in the State. Furthermore, by facilitating the movement of goods to and from the UK and Continental Europe, the Port also plays an important role in the development of the EU's Internal Market and in the development of an integrated European transport network. In this respect, the Port of Cork has been designated (alongside Dublin Port and Shannon Foynes) as a Core Network port under the EU TEN-T, in recognition of its strategic importance to the island of Ireland, where practically all trade is exported by sea and due to its role in the movement of goods to and from the UK and Continental Europe.

Reflecting its TEN-T status, the Government's recent National Ports Policy statement also identifies the Port of Cork as a 'Tier 1 Port of National Significance'.<sup>4</sup> This in turn means that the port must continue to play a key role, both regionally and nationally, in serving the trading needs of the Irish economy, and that the continued commercial development of the port is a key policy objective in this regard. The National Ports Policy states:

**"It is the Government's position that those ports considered to be of national significance must be capable of the type of port capacity required to ensure continued access to both regional and global markets for our trading economy." (Page 44)**

And,

**"The Government endorses the core principles underpinning the [Port of Cork] company's Strategic Development Plan Review, and the continued commercial development of the Port of Cork Company is a key strategic objective of National Ports Policy."**

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4. [http://www.transport.ie/upload/general/13776-NATIONAL\\_PORTS\\_POLICY\\_2013-1.PDF](http://www.transport.ie/upload/general/13776-NATIONAL_PORTS_POLICY_2013-1.PDF)

What the National Ports Policy implies is that the Government expects ports with Tier 1 significance, including the Port of Cork, to lead the response of the State commercial ports sector in addressing future national port capacity requirements.

In addition, at regional level the Cork Area Strategic Plan (CASP), which is consistent with the Government's National Spatial Strategy (NSS)<sup>5</sup> in terms of promoting balanced and sustainable economic development, highlights the regional as well as national strategic importance of the Port of Cork:<sup>6</sup>

**“The Port of Cork contributes significantly to the well-being of commerce, industry and tourism, not just of the Cork sub-region, but beyond, to the entire country.” (CASP (2008), Page 116.)**

And,

**“The maintenance of modern port facilities and the need to release port related land in the Docklands and at Tivoli for mixed-use development formats are both critical to the overall strategy for the sustainable development of the CASP area and to the achievement of the target populations for the City... The relocation of the [Port of Cork's] container terminal would have the knock on strategic benefits of releasing lands for redevelopment at the Docklands and at Tivoli thereby supporting the CASP goals of consolidating the role of Cork City.” (CASP (2008), pages xix and 120.)**

#### 4.2.2 Wider port sector trends

An important issue in this context concerns the ability of the port to respond to wider port sector trends. In relation to the evolving nature of port activities, as noted in Indecon's previous assessment of the N28 upgrade, two features are particularly noteworthy, namely:

- > The continued growth in unitised/containerised trade; and
- > The continued increase in the size of freight vessels.

With regard to unitised/containerised trade, according to UNCTAD<sup>7</sup> the overall world volume of container trade has grown by 164% between 2000 and 2013, representing an annual average growth rate over this period of 7.7% per annum. It is also notable that, in terms of the composition of the world fleet, container vessels accounted for 207 million deadweight tonnes in 2013, representing 12.7% of the world fleet – up from 8% in 2000.

In relation to vessel size, UNCTAD's data indicates that the average size of container ships internationally stood at 6,225 twenty-foot equivalent units (TEUs) in 2012, which is 79% higher than the average even as recently as 2005.

These trends are being mirrored in the pattern of trade at Irish ports. There has been a marked growth in the share of larger vessels and ships with a capacity of 20,000+ tonnes increased their share from 50% of arrivals in 2000 to 74% of arrivals at Republic of Ireland ports in 2012. The Port of Cork has also seen a substantial increase in the arrival of larger vessels, but this has lagged behind national trends.

#### 4.2.3 Economic importance of Port of Cork

The Port of Cork handled over 8.7 million tonnes of freight during 2012. Indecon estimates that the value of this trade totalled approximately €13.9 billion during 2012 (see table overleaf). It is also estimated that this trade, in addition to the direct and indirect impact of port-related activities, supports a total of 172,625 full-time

5. <http://nss.ie/pdfs/Completea.pdf>

6. Cork City Council, Cork Area Strategic Plan (2008). See: <http://www.corkcity.ie/casp/strategicplan/>

7. United Nations Conference on Trade and Development, Review of Maritime Transport 2013. See: [http://unctad.org/en/PublicationsLibrary/rmt2013\\_en.pdf](http://unctad.org/en/PublicationsLibrary/rmt2013_en.pdf)

equivalent jobs. Ensuring that the Port of Cork has the appropriate level and configuration of capacity to support the expected growth in trade will be essential to increasing these impacts in the future.

**Table 4.1: Estimated Value of Trade handled and Employment Supported by Port of Cork**

Port trade-related impacts	2012 Figures
Port of Cork - Total Trade Tonnes – '000s	€118.9
Est. Value of Trade - € Million*	€119.7
Est. Direct and Indirect Employment Supported – No. of Full-Time Equivalent Jobs**	172,625
<p>Source: Indecon analysis based on data CSO maritime and external trade statistics</p> <p>* Based on methodology applied by Indecon (2006)<sup>8</sup></p> <p>** Based on methodology applied in Bacon and Walsh (1996)<sup>9</sup> and Moloney et al (2008).<sup>10</sup> Estimate includes the direct and indirect employment supported by trade handled in addition to employment within the port itself and within port service providers.</p>	

### 4.3 Importance of the N28 Upgrade

The importance of the N28 upgrade in the context of development port capacity and in terms of the competitiveness of the South-West region was previously highlighted in the decision of An Bord Pleanála in March 2008 to refuse permission to Port of Cork to proceed with the construction of the planned deepwater port at Oyster Bank in Ringaskiddy. According to the Inspector's report on the decision:

**“The upgrading of the N28 is critical for the further large-scale port development at Oyster Bank having particular regard to the fact that existing roundabouts on the N28 namely at Shannon Park and Shanbally are currently experiencing significant congestion... I would therefore agree with all parties concerned that due to the existing congestion problems on the N28, a new upgraded road will be necessary to cater for traffic generated by the proposed development in association with other developments in the area.”<sup>11</sup>**

The critical role played by the N28 has since been further emphasised by the TEN-T core network status, which places the N28 along one of the TEN-T's priority corridors, as well as the Tier 1 status of the port in the Government's National Ports Policy. As noted in Chapter 1, the TEN-T regulation stipulates that Member States must take appropriate measures to ensure that the core network is developed, including provision of adequate motorway or express standard road linkages to core network ports.

The development of Ringaskiddy Port and the completion of the N28 upgrade are therefore intrinsically linked, and ensuring that the N28 access corridor has the capacity to serve the projected growth in trade at the port will therefore be of critical importance in this context.

8. Indecon (2006), Economic Impact of State Commercial Seaports on the Irish Economy. Report for the Irish Ports Association.

9. Bacon, P. and B. Walsh (1996), Exports and Employment – the Irish Experience 1985-1990, Irish Trade Board.

10. Moloney, R. and A. Ward (2008), Economic Contribution of Port of Cork to the Irish Economy, Centre for Policy Studies, University College Cork.

11. An Bord Pleanála – Inspector's Report on proposed port development at Ringaskiddy. March 2008.

In this context, the port has indicated that that it will be able to facilitate growth in its unitised trades (LoLo and unaccompanied RoRo) at Ringaskiddy Port out to 2022/2023 through port activity and freight traffic management measures. However, beyond that point, any further growth in trade can only be facilitated with the N28 upgrade in place.

## 4.4 Implications of Failure to Meet Port Capacity Needs

In terms of future developments, the key issue from both a port capacity perspective as well as commercial viewpoint concerns the ability of the Port of Cork to respond to market developments and service projected growth in trade.

The wider trends in the ports sector and in global shipping, combined with the physical and operational constraints posed by the port's activities in the upper Cork Harbour, have important implications for the Port of Cork's capacity to serve the trading requirements of its customers. If the port does not respond effectively to these developments it will risk losing its business to other ports. In addition to undermining its commercial viability, this would also damage the competitiveness of the Cork and South-West regions, as well as lead to adverse wider environmental impacts.

The current location of the port's activities in Cork Harbour presents substantial operational constraints. These relate to the physical limitations presented by depth of water and narrow channels at Tivoli and City Quays, which together constrain their accessibility for larger vessels.

The Port of Cork, as part of its strategic planning, has considered and assessed a range of options in terms of alternative sites to facilitate the port's development requirements over the longer run. This site selection process concluded that Ringaskiddy represented the optimal and preferred location to serve the port's future development in the key unitised trade modes, based on following key advantages:

- > Ringaskiddy has the largest comparable approach depths (11.5m);
- > It also has the largest maximum berth depths (13.4m);
- > There is a significant estate of 70 hectares;
- > It is integrated in a Strategic Industrial Zone; and
- > Ringaskiddy is already the most significant location for activities at the port.

By contrast, the physical characteristics and operational constraints present at Tivoli, City Quays and Marino Point mean that potential to intensify port activities at these locations is likely to be very limited. It should also be noted that the relocation of Port of Cork's activities from Tivoli and City Quays represents a strategic objective of the Regional Planning Guidelines, the Cork City and County Development Plans, and the CASP.

The port is currently seeking statutory consent with An Bord Pleanála for a development plan for Ringaskiddy Port (during 2013 the port received TEN-T funding to support the preparation of scoping studies leading to the planning application). The overall objective of this plan is to facilitate the relocation over time of the Port's existing activities from Tivoli and City Quays and to consolidate these trades at Ringaskiddy Port. Critically, this will enable the port to respond effectively to market developments, in terms of the projected growth in trade and the ongoing trends towards larger vessels serving this trade.

### 4.4.1 Cost of failure to provide required port capacity

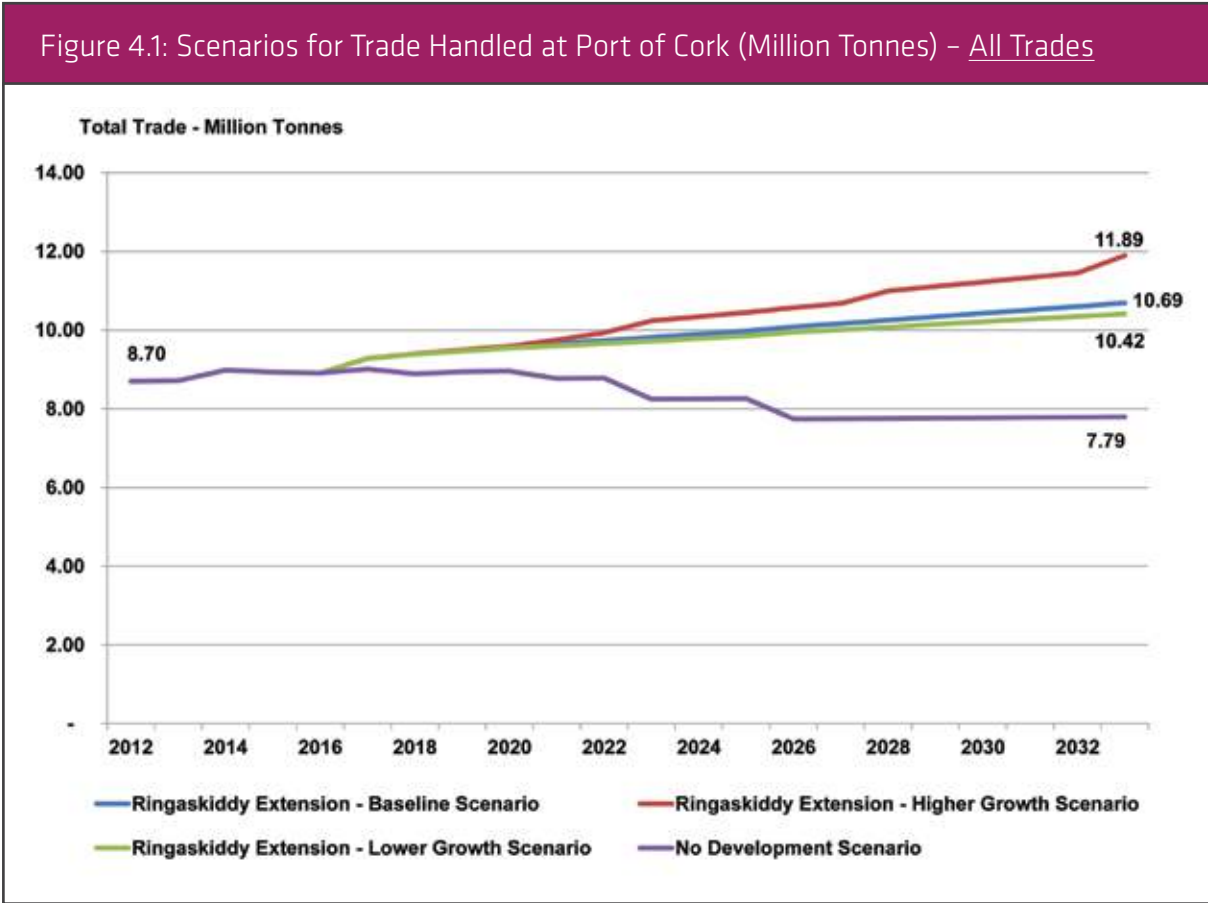
The Port of Cork has developed a number of scenarios for projected levels of trade handled by the port. These scenarios are framed around likely developments in the Irish economy and trade, and the Port of Cork's share of



this trade. Crucially, the latter is influenced by the extent to which the port responds effectively to wider port and shipping trends through putting in place the required operational capacity.

Under the baseline scenario, if planning consent is achieved, an extended Ringaskiddy Port would open in 2018. This would enable the port to handle a projected expansion in trade from 8.7 million tonnes in 2012 to just under 10.7 million tonnes by 2033.<sup>12</sup> Of the total, LoLo trades, which would eventually be handled solely at Ringaskiddy, would increase from 166,225 TEUs in 2012 to 279,194 TEUs by 2033. This represents an estimate of the projected volumes of trade that the Port of Cork could handle if it has the capacity in place to maintain its current market share.

By contrast, if the Port of Cork is unable to implement the proposed Ringaskiddy extension this would mean that the port would have to continue to rely on existing capacity and would not be able to respond to wider market developments, including the ongoing trend towards larger vessels. This would mean that there would a strong likelihood that the port would lose some large customers from around 2020-2023 onwards, as the port's inability to handle larger vessels would mean that these ships would have to be served at other, more distant ports such as Dublin. Under this scenario overall trade handled by the Port of Cork would fall gradually over time, from 8.7 million tonnes in 2012 to 7.8 million tonnes by 2033, with steeper declines assumed from 2020 onwards, as capacity limits impact. Of the total, the key LoLo trade component would be expected to fall substantially, from 166,225 TEUs in 2012 to about 60,000 TEUs by the end of the next decade. Importantly, this would imply that Port of Cork's share of national LoLo traffic would decline from 22.7% in 2012 to less than 5% by 2033.



Source: Indecon analysis based on Port of Cork Trade Projections

The figure above provides a graphical depiction of the Port of Cork's scenarios for projected levels of trade out to 2033, highlighting the loss in trade from the port that would be projected to occur under a scenario where

12. Based on an assumption where national economic (GDP) growth rate runs at an average of 2.5% per annum from 2022 onwards, while the Port of Cork maintains its share of national LoLo traffic volumes at the 2012 level (i.e. 22.7%).

Ringaskiddy Port is not developed. This shows that failure to develop the port would result in an estimated loss in trade volumes of 27% relative to the port's baseline development projection.

The table below presents Indecon's estimates of the costs of failure to provide sufficient port capacity at Ringaskiddy, in terms of the value of trade and associated employment that could be lost. It is estimated that the loss in projected future trade growth over the period to 2033 would amount to €22.8 billion in present value terms. This would also translate into a loss in potential future employment creation, which could amount to an estimated 57,500 jobs by 2033 compared to what we estimate could otherwise be supported if Ringaskiddy Port is fully developed as planned.<sup>13</sup>

Table 4.2: Estimated Value of Trade and Future Employment Loss arising from Failure to Provide Required Capacity at Ringaskiddy Port	
	Future Impact/Loss over Period to 2033
<b>Present Value of Future Loss of Trade over period 2012-2033</b> - No Development vs Baseline Development Scenario - € Million*	-22,768
<b>Employment Impacts</b> Estimated loss in future employment supported over period 2012-2033 – Full-Time Equivalent jobs**	-57,472
<p>Source: Indecon Analysis</p> <p>* Scenarios estimate value of loss in 2012 price terms and assume constant average value of trade over time. A discount rate of 5% per annum is used based on Department of Public Expenditure and Reform guidance.</p> <p>** Based on the variation on projected trade volumes between the baseline Ringaskiddy development extension scenario and the 'No Development' scenario, and assuming that employment losses are proportional to trade losses.</p>	

## Trade diversion and related costs

If Ringaskiddy Port is not developed and the Port of Cork reaches capacity limits, as noted above any over-capacity trade would then have to be handled from other ports. Given the predominance of Dublin in the key LoLo sector the strong likelihood would be that over-capacity trade would be diverted and handled via Dublin, although smaller quantities of some trades may also be handled at Waterford and Shannon Foynes.

Under a 'no development' scenario involving diverted over-capacity trade, additional socio-economic costs would arise for the Irish economy associated with the internal haulage and other costs of handling this trade at other ports. These costs would include:

- > Additional freight transport/haulage journey times and vehicle costs;
- > Costs associated with increased traffic congestion along national primary routes; and
- > Environmental emissions costs.

13. It should be noted that the figure of -57,472 jobs does not represent a loss in jobs compared to current levels; rather it represents an estimate of the loss in future employment creation that would arise compared to a scenario where Ringaskiddy Port is fully developed as planned, i.e. it is a function of the variation between the Baseline Development scenario and the No Development scenario highlighted in Figure 4.1. It therefore indicates the estimated loss in future employment growth compared to what would be expected to take place if the port develops.

These aspects effectively represent costs that could be avoided if Ringaskiddy Port is developed as planned and the port has the appropriate scale and configuration of capacity in place. However, as the vast majority of the port's customers are in the Cork and wider South-West regions and reflecting the distances involved in diverting trade, these costs could be very substantial in the absence of provision of required port capacity. Importantly, these costs would undermine the competitiveness of Cork and the South-West region as a location for internationally traded enterprise.

#### 4.4.2 Design of final leg of scheme

Reflecting Indecon's engagement with the Port and other stakeholders in the Ringaskiddy and wider Cork region, it is also important to note the impacts which would arise from a failure to adequately address the required entrances and traffic movements in the vicinity of the Port. This relates to the optimal design of the final leg of the N28 upgrade. As described in Section 2, the design of the final leg of the scheme could entail one of the following broad alternatives:

- > Completion of upgrade to motorway or high quality dual carriageway standard to terminate at the junction with the existing R613, with the latter re-joining the existing N28 west of Ringaskiddy village; or
- > Completion to same specification as above but with upgrade continuing past junction with the existing R613 on to a new roundabout at Loughbeg and terminating east of Ringaskiddy village.

There would be a number of important benefits of the second option compared with the first approach set out above from the perspective of facilitating the expansion of Ringaskiddy Port. These benefits would include:

- > By-passing of Ringaskiddy village, thereby minimising traffic congestion and environmental impacts for residents and other (non-port) economic activities in the Ringaskiddy area (considerable congestion currently arises at the western junction in the vicinity of the existing RDWT entrance, with implications for Ringaskiddy village);
- > Facilitation of a second entrance to the port, which would facilitate future expansion;
- > Avoidance of additional costs that would otherwise arise associated with a need for higher capacity junctions and wider port internal network in the absence of this solution; and
- > By facilitating more effective and efficient port operations would make the port more attractive to potential partners/investors.

While the full-length route corridor terminating at Ringaskiddy East would entail higher construction costs, Indecon believes it is important that the assessment of route options for the N28 scheme fully takes into account the wider implications. These include facilitating more effective and efficient port operations, the benefits for residents and other economic activities of by-passing Ringaskiddy village, and the avoidance of costs that would otherwise have to be met by the port in the absence of an optimal route design. Critically, failure to ensure that appropriate linkages and capacity is provided on the N28 would increase the risk that the port would fail to achieve planning consent to develop at Ringaskiddy, with consequent adverse implications as highlighted in this section.

## 4.5 Summary of Key Conclusions

This chapter examined the key issue of the importance of the N28 upgrade scheme in relation to external connectivity of the South-West region and the role of the Port of Cork in this context. Critically, we assessed the key issue of the potential economic detriments of costs that would result from non-completion of the scheme.

The Port of Cork is the second largest multimodal port in the State and is a ‘Tier 1 Port of National Significance’ under the Government’s National Ports Policy framework. The port has also been designated as a Core Network port under the EU’s TEN-T, in recognition of its strategic importance to the island of Ireland. The latter places the N28 route along one of the TEN-T’s priority corridors.

The port is currently seeking statutory consent to develop its Ringaskiddy terminal, with the objective of facilitating the relocation over time of the port’s existing activities from Tivoli and City Quays and to consolidate these trades at Ringaskiddy. Critically, this will enable the port to respond effectively to market developments, in terms of the projected growth in trade and the ongoing trends towards larger vessels serving this trade.

Ensuring that the N28 access corridor has the capacity to serve the projected growth in trade at the port is therefore of critical importance in this context. The development of Ringaskiddy Port and the completion of the N28 upgrade are therefore intrinsically linked.

Indecon’s assessment clearly demonstrates that a failure to provide the N28 upgrade, by undermining the port’s plans to expand its capacity at Ringaskiddy, would indirectly impede its ability to respond to market and port sector developments. In particular, failure to develop the port would result in an estimated loss in overall trade volumes of 27% relative to projected 2033 traffic. Importantly, this would imply that Port of Cork’s share of national traffic in the key LoLo segment would decline from 22.7% in 2012 to less than 5% by 2033, which would undermine the commercial viability of the port.

It is estimated that the potential loss in future trade growth would be equivalent to €22.8 billion when measured in present value terms. This would also translate into a loss in potential future employment, which could amount to an estimated 57,472 jobs by 2033 compared to what could otherwise be supported if Ringaskiddy Port is fully developed as planned. These figures are presented in the table below. The estimated loss in trade to the port would also give rise to substantial environmental costs through the additional transport and CO2 emissions that would arise if the trade lost to Cork had to be diverted to more distant ports.

**Table 4.3 Summary of Economic Impacts of N28 Upgrade – Adverse Implications for Future Port Development External Connectivity of Non-Completion of Scheme**

**-€22,768M**

Estimated future loss in value of trade through Port of Cork – Present value over period 2012-2033

**-57,472**

Estimated loss in future employment supported - 2012-2033 – FTEs

Source: Indecon analysis

## 5. ENHANCEMENT OF THE RINGASKIDDY INDUSTRY AND RESEARCH CLUSTER

### 5.1 Introduction

This chapter highlights the further strategic role played by the N28 upgrade as a catalyst for enhancing the economic potential of the Ringaskiddy/Carrigaline area. This relates to the presence in the area of one of Ireland's foremost industrial clusters, as well the important IMERC maritime and energy strategic research and industry cluster.

### 5.2 FDI-related Benefits of N28 Upgrade

#### 5.2.1 Ringaskiddy bio-pharma cluster

Ringaskiddy is a leading example of an industrial 'cluster', whereby a number of companies in the same or related sectors locate in close proximity. In this case, Ringaskiddy hosts a cluster of major multinational bio-pharma companies, some of which have been operating in the area since the 1960s. At the end of 2013, a total of 3,419 persons were employed in IDA Ireland client companies in the bio-pharma sector which are located in the Ringaskiddy/Carrigaline area (see table below).

**Table 5.1: Employment in Ringaskiddy/Carrigaline Pharmaceutical Cluster**

**3,419** IDA Supported Employment – Ringaskiddy/Carrigaline  
Pharmaceutical Cluster – Full-time equivalent persons

Source: IDA Ireland

The figure overleaf provides an aerial view of Ringaskiddy, highlighting the cluster of sites operated by some of the world's largest bio-pharma companies, including Pfizer, DePuy, Novartis, GSK, and Centocor.



Figure 5.1: Employment Sites of Major Bio-Pharma Multinationals in the Ringaskiddy Area



Source: N28 Sustainable Travel Strategy

### 5.2.2 Role of N28 upgrade

The current deficiencies in the existing N28 route mean that staff employed in the major multinational companies located in the Ringaskiddy area experience day-to-day congestion and increased commuting times. This is an issue that will become more costly as the economy recovers and companies expand their workforces or consolidate activities in the area.

In addition, the existing N28 also presents a poor impression to potential investors visiting the area. The area encompasses a number of major IDA Ireland strategic investment sites, which have the potential to generate substantial future employment and related economic spin-offs.

Upgrading the N28 would therefore demonstrate Ireland's commitment to the continued development of Ringaskiddy as a key location for foreign investment. While it is not the only factor that will influence the decision-making of prospective investors, it is one that we can control (unlike international factors that are largely outside our control).

### 5.2.3 Future employment creation impacts

By boosting transport capacity and accessibility to and from the Ringaskiddy/Carrigaline area, completion of the N28 upgrade could act as a catalyst in both unlocking IDA Ireland-owned development sites and attracting new inward investment, in addition to underpinning and intensifying existing investment in the area. These potential sources of foreign direct investment could generate significant benefits for the Ringaskiddy/Carrigaline cluster and for the South-West region as a whole over and above existing levels of activity and employment.

The table below presents Indecon's estimates of future employment creation that could be supported through the catalytic impact of the N28 upgrade in unlocking the potential of IDA sites in the Ringaskiddy/Carrigaline area. Owing to the uncertainty relating to site take-up by investors and subsequent employment creation, Indecon has examined two alternative scenarios for the potential development of IDA Ireland sites in the Ringaskiddy area. As a lower-bound scenario we assume that 75% of available unoccupied sites are developed and that each site supports employment at an average density of 10 persons per hectare. This scenario would suggest that these sites, if developed, could support an additional 1,184 full-time equivalent jobs. If 100% of the sites are developed and if an average employment density of 14 persons per hectare (consistent with current densities) is achieved, this would suggest the potential for these sites to support up to 2,228 additional jobs over and above existing (2013) employment levels.

**Table 5.2: Economic Impacts of Completion of N28 Upgrade – Estimated Potential Additional Employment in IDA Ireland-assisted companies in Ringaskiddy/Carrigaline area**

	Est. Annual Income from Employment in IDA Ireland-assisted Companies in Ringaskiddy/Carrigaline Area	
	No. of FTEs	Implied Potential New Job Creation viz. Existing Employment - FTEs
Existing Employment (2013)	3,419	
Estimated Potential Future Direct Employment:		
Scenario 1: Assuming 75% of available lands developed @ employment density of 10 persons per hectare	4,603	1,184
Scenario 2: Assuming 100% of available lands developed @ employment density of 14 persons per hectare	5,647	2,228
Economy-wide Employment Impacts*		
Scenario 1	5,896	2,477
Scenario 2	8,082	4,663
<p>Source: Indecon modelling based on IDA Ireland data</p> <p>* Economy-wide employment impacts estimated through application of Indecon employment multiplier for chemicals/ pharmaceuticals sector derived from analysis of CSO Supply and Use and Input-Output Tables for the Irish economy. The employment multiplier has a value of 2.09 and includes indirect and induced multiplier impacts.<sup>14</sup></p>		

14. In this case, indirect multiplier impacts relate to the additional economic activity supported through the supply chain serving the pharmaceuticals industry, while induced impacts relate to the additional impacts generated through the re-spending of the employment incomes supported.

The additional employment impacts in Table 5.2 could have very significant impacts not just on the immediate area but also on the wider economies of the Cork and South-West regions. This reflects the multiplier impacts that would be supported indirectly as a result of this additional activity. Through the application of Indecon's sectoral model of the Irish economy, we have estimated that the direct employment impacts supported through the development of IDA sites in Ringaskiddy could increase to between 2,477 jobs and 4,663 jobs on an economy-wide basis when multiplier impacts are factored into the assessment.

The table below outlines Indecon's estimate of the potential value of direct and overall economic impacts (taking account of indirect and multiplier impacts) that could materialise if the above scenarios for employment generation benefits were to be facilitated through further inward investment arising from completion of the N28 upgrade.

Table 5.3: Scenarios for Potential Economic Impacts of Completion of N28 Upgrade - Incomes Supported by Additional Employment Generated in IDA Ireland Sites in Ringaskiddy/Carrigaline Area		
	Est. Annual Income from Employment in IDA Ireland-assisted Companies in Ringaskiddy/Carrigaline Area	
	No. of FTEs	Implied Growth viz. Existing Annual Employment Income
Est. Existing Employment Income/Annual Payroll (2013)*	265.6	
Direct Economic Impacts - Estimated Potential Future Employment Income/Payroll - Annual Incomes*		
Scenario 1	357.5	91.9
Scenario 2	438.6	173.0
Overall Economy-wide Impacts, including Indirect/Multiplier Impacts - Annual Incomes**		
Scenario 1	457.6	192.0
Scenario 2	561.4	295.8
<p>Source: Indecon modelling based on IDA Ireland and Forfás ABSEI data</p> <p>*These estimates are based on employment estimates from Table 5.2 above and an average salary per employee in foreign-owned companies in the chemical/pharmaceutical sector from the Forfás Annual Business Survey of Economic Impact (2012)</p> <p>**Based on applying an income multiplier of 1.28 from Indecon's analysis of CSO Input Output tables for the Irish economy.</p>		

Assuming that additional employment creation in the Ringaskiddy sites would be focussed on bio-pharma activities in the area, this would imply that these jobs would typically be high value in terms of average wage/salary levels. Based on the scenarios examined, we estimate that the additional direct employment would support direct additional annual employment incomes amounting to between €91.9 million and €173 million at current average wage/salary levels. When account is taken of multiplier impacts, this additional direct impact would be estimated to increase to between €192 million and €295.8 million annually in economy-wide terms.

A range of factors influence decisions on foreign direct investment, and the future development of IDA strategic sites in the Ringaskiddy area are subject to uncertainty. However, given the existing major industry cluster in the area, by addressing existing transportation constraints and the poor impression presented to potential investors, completion of the N28 upgrade could provide a catalyst for further investment in the Ringaskiddy area.

### 5.3 Role of N28 Upgrade in Development of IMERC

In addition to hosting the major bio-pharma industry cluster, Ringaskiddy is also home to the Irish Maritime and Energy Research Cluster (IMERC). IMERC is a partnership involving three core partners, namely University College Cork (UCC), Cork Institute of Technology (CIT) and the Irish Naval Service.<sup>15</sup> The cluster was established in 2010 to strategically address global research and commercial opportunities across the following four pillars:

- > Marine energy;
- > Shipping, logistics and transport;
- > Maritime safety and security; and
- > Marine recreation

IMERC will leverage the co-location and expertise of the National Maritime College of Ireland (NMCI) and UCC's Beaufort Laboratory. The NMCI is a constituent college of CIT and provides education and training for the merchant marine and the non-military needs of the Irish Naval Service (which has its headquarters on nearby Haulbowline Island). There is substantial existing activity associated with the NMCI (750 students and 60 staff) and the Naval Service (with 1,100 personnel). In addition, UCC's new Beaufort Laboratory, which was launched in 2012, is located on a three-acre site adjacent to the NMCI and is due to be completed in 2015. This is envisaged to employ up to 150 staff when fully operational.

A Masterplan for the development of IMERC was prepared during 2013.<sup>16</sup> This reiterated the overall aims and objectives of the IMERC strategy<sup>17</sup> to support indigenous commercial enterprise in Ireland, and to attract Foreign Direct Investment (FDI) from overseas companies, with a particular focus on research and innovation in the maritime and energy sectors, and to add value to the existing critical mass of expertise and infrastructure through the provision of co-located commercial space.

The IMERC campus is located in a reclaimed brown-field site to the east of Ringaskiddy Village, at the end the L2545, which is a private extension of the existing N28 leading to the bridge to Haulbowline Island, where the Irish Naval Service headquarters is located. The site is approximately 6.24 hectares, excluding the Beaufort Laboratory. A map of the Ringaskiddy area indicating the position of the IMERC site in the context of the N28/L2545 and the location of the National Maritime College, the UCC Beaufort Laboratory and the Irish Naval Service headquarters is presented in the figure overleaf.

15. The wider IMERC partnership includes IDA Ireland, the Port of Cork and Cork County Council, as well as a number of partner companies.

16. IMERC Masterplan, September 2013.

17. IMERC Strategy, 2011-2016. See: [http://www.imerc.ie/pages/IMERC\\_Strategy\\_2011-2016.pdf](http://www.imerc.ie/pages/IMERC_Strategy_2011-2016.pdf).

Figure 5.2: Location of IMERC in Context of Ringaskiddy and Associated National Maritime College, Beaufort Laboratory and Irish Naval Service Headquarters



Source: Indecon, based on Google Maps

The Masterplan for IMERC envisages the delivery of the overall Ringaskiddy campus development across six phases, as follows:

- > Phase 1: Completion of Beaufort Laboratory.
- > Phase 2: Construction of a Hub and Incubation Building to provide incubation space for start-up enterprises currently located at the NMCI and to support the development of a maritime and marine energy industry cluster.
- > Phase 3: Construction of space to house mid-sized foreign technology-based companies and attract FDI companies.
- > Phase 4: Construction of research and training buildings.
- > Phase 5: Development of space for multinational corporations and industry as well as providing additional hub facilities including café/restaurant and conference/ meeting facilities to address the growing needs of the campus.
- > Phase 6: Completion of development, including campus 'gateway' building.

The figure overleaf describes the envisaged IMERC development when fully completed.



Figure 5.3: Proposed IMERC Campus in Ringaskiddy, Cork



Source: IMERC Masterplan, 2013

### 5.3.1 Potential economic impacts

It was not feasible within the scope of this assessment to undertake a comprehensive independent assessment of the potential economic impacts that could flow from the completion of the planned IMERC campus in Ringaskiddy. As the proposed campus is not yet fully developed and investment decisions by foreign as well as indigenous companies in any area are subject to uncertainty, the overall economic impacts that could arise from the completion of the IMERC campus remain uncertain. However, the potential impacts could be substantial if the envisaged campus space is developed and fully utilised.

While it is not possible given normal market uncertainties to accurately predict the likely nature or timing of investments, Indecon has considered two indicative scenarios to assess the potential employment impacts that could be generated if the planned IMERC campus is fully developed in line with the Masterplan.

The Masterplan for IMERC envisages the following potential employment capacity, based on typical employment/space densities:

- > Phase 1: Beaufort Laboratory, when fully completed and operational, is likely to accommodate an estimated 150 staff, including 135 researchers;
- > Phase 2: incubation space capacity to house up to 75 staff;
- > Phase 3: commercial/incubation space to house up to 343 staff;
- > Phase 4: research and training buildings, with capacity for up to 156 staff;

- > Phase 5: FDI and hub space to cater for up to 626 staff; and
- > Phase 6: offices to house up to 56 staff.

These components suggest an overall potential employment capacity based on typical space norms per person of up to approximately 1,400 persons on the proposed IMERC campus as envisaged under the Masterplan. Indecon has also considered a scenario whereby employment densities are higher than assumed under the Masterplan, and it is estimated under this scenario that the IMERC campus could accommodate approximately 2,100 persons. These scenarios are presented in the table below.

Table 5.4: Scenarios for Potential Employment at IMERC Campus in Ringaskiddy	
Scenarios for Potential Employment at IMERC Campus, Ringaskiddy – Estimated No. of Full-Time Equivalent Persons	Potential Employment
Scenario 1*	1,406
Scenario 2**	2,109
<p>Source: Indecon analysis based on IMERC Masterplan</p> <p>* Based on employment densities assumed in Masterplan. Estimates of potential include employment at Beaufort Laboratory.</p> <p>** Based on 50% higher employment densities.</p>	

It is important to emphasise that the estimates of employment presented above are indicative only and relate to the potential employment capacity of the research and commercial space envisaged for the IMERC campus if fully developed in line with the Masterplan. Actual employment achieved may differ, however, and could be higher or lower depending on the nature of research and commercial activity hosted.

There would also be employment supported during the construction phases of the campus development. In addition, there may also be significant additional employment potential in the maritime and marine energy sectors in the wider region, which could be delivered at other locations in Cork by IMERC's partners, including IDA Ireland.

### 5.3.2 Role of the N28 upgrade

IMERC has the potential to achieve critical mass in maritime and marine energy research and to deliver substantial associated commercial activities and economic impacts. This will, however, require the development of a campus in Ringaskiddy supported by adequate transport connectivity on the N28.

The role of the N28 upgrade in the context of the development of IMERC is therefore clear: without appropriate transport connectivity to/from the Ringaskiddy campus, the capacity of this location to support the proposed scale of development would be called into question. Specifically, in the absence of sufficient capacity on the N28, it is very unlikely that the proposed IMERC plans would achieve planning consent.

### 5.3.3 Design of final leg of scheme

To unlock the potential catalytic benefits of the N28 upgrade, both from the perspective of enhancing the existing FDI clusters and supporting the development of the IMERC campus, it is important that sufficient consideration is given to the design of the final leg of the route. This reflects the location of IDA sites, as well as the IMERC site, in the Ringaskiddy area.

The figure below describes the location of IDA Ireland sites as well as the IMERC site in the context of an upgrade to the N28 route that would extend a new route corridor to terminate east of Ringaskiddy village. This indicates that the IDA holds sites amounting to a total of some 101 hectares in locations which are adjacent to a route option that would terminate east of Ringaskiddy. By contrast, a route design which terminates at the junction with the R613 would reduce the accessibility of some of these sites (see figure below). It would also isolate the IMERC site to the east of Ringaskiddy.

Figure 5.4: IDA Ireland and IMERC Sites in Context of N28 Upgrade



Source: IDA Ireland

## 5.4 Summary of Key Conclusions

This chapter examined the role of the N28 upgrade as a catalyst for enhancing the economic potential of the Ringaskiddy/Carrigaline area, which includes one of Ireland's foremost industrial clusters, as well as an important maritime and energy strategic research cluster.

A range of factors influence decisions on foreign direct investment, and the future development of IDA strategic sites in the Ringaskiddy area is subject to uncertainty. However, given the existing major industry cluster in the area, by addressing existing transportation constraints and the poor impression presented to potential investors, completion of the N28 upgrade could provide a catalyst for further investment in the Ringaskiddy area. Scenarios examined by Indecon indicate that development of the IDA's available sites in the area could directly support

additional employment of between 1,184 and 2,228 persons and associated incomes of between €91.9 million and €173 million. This additional activity would also support significant wider economic spin-offs in the local and wider regional economies.

In addition to enhancing the employment potential of IDA sites, the N28 upgrade would also underpin the development of the IMERC campus. This major campus is designed to strategically position Ireland to capture global research and commercial opportunities in the maritime and marine energy sectors. While all investment is subject to considerable uncertainty, the campus, if fully developed, would have the capacity to accommodate over 2,000 jobs in research and commercial activities.

However, as discussed in Chapter 3 in the context of the development of Ringaskiddy Port, it is important that the assessment of route options for the N28 upgrade fully takes into account the wider implications for economic activities in the Ringaskiddy area. In this context, while extending the final leg of the scheme to terminate to the east of Ringaskiddy would involve greater costs, failure to ensure accessibility would undermine the significant economic potential of IDA sites and the IMERC campus.

## 6. N28 AS CATALYST FOR WIDER REGIONAL DEVELOPMENT

### 6.1 Introduction

This study also examined the role of the N28 upgrade in acting as a catalyst or facilitator of tourism and wider regional development. This includes the role of the scheme in unlocking the tourism potential of Spike Island, improving accessibility to wider Cork Harbour attractions and maximising access to the South-West region for visitors arriving by ferry through Ringaskiddy Port. In relation to wider regional development, the N28 upgrade, by facilitating the relocation of Port of Cork's current operations at Tivoli and City Quays downriver to an expanded Ringaskiddy Port, could also play an indirect influencing role in releasing lands for redevelopment in the Cork Docklands.

### 6.2 Tourism Sector Development

The N28 upgrade could act as a catalyst in relation to the development of tourism in the South-West region, via two primary channels, namely:

- > Role in maximising accessibility to a redeveloped Spike Island and other locations in Cork Harbour; and
- > Role in improving access to Cork and the wider South-West region for visitors arriving by ferry through Ringaskiddy Port.

#### Development of Spike Island as a tourism attraction

In July 2009 the Minister for Foreign Affairs announced that the Government agreed to the transfer of Spike Island from the Department of Justice, Equality and Law Reform to Cork County Council, with the objective of enabling the Council to explore the tourism potential of the Island. Ownership of the island was handed over to Cork County Council in July 2010. Subsequently, the Cork County Manager established a steering committee to examine and progress the potential redevelopment of the Island as a tourism destination. The figure overleaf shows the location of Spike Island in the context of Cork Harbour, Ringaskiddy and the existing N28 route.

Between November 2011 and November 2012 a consortium was appointed by the steering committee to prepare a masterplan for the development of the island into a viable international tourism attraction and recreational resource.<sup>18</sup> The Masterplan outlines a vision for Spike Island "as a unique cultural heritage and activity destination, offering a compelling, high quality, rich and diverse set of experiences to all visitors."<sup>19</sup>

There are a number of examples internationally of similar harbour-based historical sites that have been successfully redeveloped as tourism destinations. These include Alcatraz in San Francisco, Port Arthur in Tasmania, Grosse Île and the Halifax Citadel in Canada, Robben Island in South Africa and Suomenlinna in Helsinki. In Ireland, other small island destinations include Skellig Michael off the Kerry coast and Garnish Island in Bantry Bay.

18. Cork County Council, Masterplan for Spike Island, November 2012.

19. Ibid. Page 45.



Figure 6.1: Spike Island in Context of Cork Harbour, Ringaskiddy and Existing N28 Route



Source: Google Maps

According to Cork County Council, a total of 10,000 visitors visited Spike Island in 2012, and this number increased to 18,000 in 2013. Cork County Council anticipates further increases in the number visitors in 2014. Since the Council took over the management in 2010, it has invested almost €1 million in the island.

The Spike Island Masterplan envisages the potential to attract up to 300,000 visitors to the island in the longer term if it is successfully developed, with a maximum monthly demand during the summer months of 100,000 visitors. Visitors would be likely to comprise a mix of overseas and domestic/local visitors and to the extent that visitors bring additional spending to the local economy, this could give rise to potentially significant economic impacts in terms of employment and incomes supported. While the extent to which these estimates could actually delivered remains uncertain, Indecon have considered two scenarios for potential visitor number and associated spend, which are described in the table overleaf. Indecon's own estimate assumes approximately 150,000 visitors per annum to the island and we estimate that this could translate into an associated annual spend amounting to €41.6 million, of which an estimated €28.6 million would be among overseas visitors. This represents an estimate of the potential overall expenditure of visitors to the region who as part of their trip also visit Spike Island. It is therefore likely that some of this activity would occur in the absence of a new visitor attraction on the island. However, to the extent that a redeveloped Spike Island could improve the overall tourism offering for visitors to the region, the project could potentially deliver significant additionality in terms of spend and associated economic spin-offs for the local economy.



**Table 6.1: Scenarios for Potential Impacts associated with Development of Spike Island as a Tourism and Recreation Attraction**

Potential Visitor Numbers – Annual	
Scenario 1 – All Visitors <sup>1</sup>	150,000
Of which: Overseas Visitors <sup>2</sup>	82,500
Scenario 2 – All Visitors <sup>3</sup>	300,000
Of which: Overseas Visitors <sup>2</sup>	165,000
Potential Associated Visitor Spend - € Annual	
Scenario 1 – All Visitors	41.6
Of which: Overseas Visitors <sup>4</sup>	26.8
Scenario 2 – All Visitors	83.2
Of which: Overseas Visitors <sup>4</sup>	53.6
<p>Source: Indecon analysis, based on Spike Island Masterplan and Fáilte Ireland data</p> <p><sup>1</sup> Indecon scenario based on assuming 50% of estimate of potential under Spike Island Masterplan.</p> <p><sup>2</sup> Overseas visitors are assumed to account for 55% of total visitors, based on Fáilte Ireland data on regional tourism activity in South-West region in 2012.</p> <p><sup>3</sup> Estimate of potential based on Spike Island Masterplan.</p> <p><sup>4</sup> Based on average spend per overseas visit of €325 per visit (€277 per visit across all visitors).</p>	

To achieve these potential benefits will, however, require suitable access to/from the island. The Spike Island Masterplan evaluated a number of proposals for improved access, which included:

- > A Roll-on Roll-off passenger vessel to link with either Haulbowline or Ringaskiddy (at Paddy's Point). This would require the provision of approximately 1,000 car parking spaces at Ringaskiddy;
- > A passenger vessel to operate a Cobh-Haulbowline/Ringaskiddy to Spike Island service. This would require up to 500 car parking spaces at Ringaskiddy; and
- > A bascule bridge proposal, which is effectively a bridge link between Spike Island and Haulbowline with a removal section to preserve the image of Spike Island as an island. This again would require up to 500 additional car parking spaces at Ringaskiddy.

Depending on the approach applied, the potential impact of these proposals would have two dimensions:

- > The need to provide parking/park-and-ride facilities at Ringaskiddy; and
- > The need for increased capacity on the N28 route to meet visitor activity to Spike Island.

Overall, if successfully developed, Spike Island could have the potential to attract significant numbers of visitors and would complement other attractions in the Cork Harbour area. However, it will be necessary to implement an appropriate solution to provide access to/from the island. Given its proximity, it is highly likely that this would involve access via Ringaskiddy. In this context, an appropriate upgrade of the N28, which would provide sufficient connectivity to Ringaskiddy East and a crossing the island, would be important in facilitating the development potential of Spike Island.

### **Wider regional tourism**

Fáilte Ireland has estimated that there were a total of 1.2 million overseas visitors to County Cork during 2012, making it the second most visited county outside Dublin. Over 75% of these visits were comprised of visitors from Britain and mainland Europe. Overseas visitors to Cork spent an estimated €399 million in 2012. The South-West region as a whole accounted for 1.8 million overseas visits and 1.4 million domestic visits during 2012.

Ringaskiddy Port plays an important role in supporting tourism activity in the South-West region. This is achieved through its facilities which handle passenger/car ferries. The port catered for a total of 79,758 ferry passengers during 2013, of which almost 40,000 were inbound arrivals. These activities support significant economic impacts in the local and wider economies through the expenditures undertaken by passengers.

Through improving the accessibility of the South-West region for overseas visitors arriving via car ferry or cruise ship at Ringaskiddy, the N28 upgrade would be important in supporting the wider development of tourism in the region. As travel times are reduced through the scheme, other factors being equal, this would increase the potential range of travel for visitors participating in sightseeing and other activities across the South-West region.

## **6.3 Potential Influential Role of N28 in Development of Cork Docklands**

We also examined the potential for the N28 upgrade to play an influencing role in the redevelopment of the Cork Docklands. This would take place primarily through addressing the indirect but important prerequisite of facilitating the relocation downriver of the Port of Cork's current operations at City Quays and Tivoli, thereby opening up these sites for redevelopment and providing a catalyst for the wider redevelopment of the docklands. In addition to the Port of Cork Authority's land holdings of the City Quays, a number of other key players have significant land holdings in the Cork Docklands. Some of these landowners and businesses who have operations that are strongly connected to the port would, over time, also seek to relocate their operations.

The figure overleaf describes the areas that encompass the Cork Docklands land estate, highlighting the overall scale and potential redevelopment capacity involved.

Figure 6.2: Cork Docklands Estate in Context of Cork City



Source: Cork City Council<sup>20</sup>

In relation to the policy context, the Cork Area Strategic Plan highlights the importance of redevelopment of the Tivoli estate and other locations in the docklands in the context of the wider development of the Cork region. In particular, CASP notes the following:

**“The maintenance of modern port facilities and the need to release port related land in the Docklands and at Tivoli for mixed-use development formats are both critical to the overall strategy for the sustainable development of the CASP area and to the achievement of the target populations for the City.”<sup>21</sup>**

And,

**“The Docklands is vigorously supported in this CASP Update as an optimal location for development in CASP on the basis of economic and environmental sustainability.”<sup>22</sup>**

The Port of Cork represents only part of the overall docklands estate. However, the relocation over time of port activities from Tivoli and City Quays would be seen to provide a confidence signal to the market and to act as a catalyst for development in the wider docklands area.<sup>23</sup>

### Economic potential

The CASP identified key sectors of potential in the Docklands as including the following:

- > National Market Based Services;
- > Internationally Traded Services/Mobile Services;
- > Health and education;

20. Cork City Harbour – Unlocking Cork Docklands, report prepared for Cork City Council, supported by the Department of the Environment, Community and Local Government, November 2012. See: [http://corkcitylibrary.ie/media/Cork\\_City\\_HarbourUnlocking\\_Cork\\_Docklands\\_Summary\\_Report\\_1.pdf](http://corkcitylibrary.ie/media/Cork_City_HarbourUnlocking_Cork_Docklands_Summary_Report_1.pdf).

21. Cork Area Strategic Plan Update, July 2008. Page xix.

22. Ibid. Page vi.

23. Cork City Harbour – Unlocking Cork Docklands, Op. Cit., Page 46.

- > Bio-Pharma/Pharmaceuticals, Medical Devices and Life Science Sectors; and
- > ICT and Digital Media.

The most recent assessment of the potential of the Cork Docklands was undertaken by Cork City Council during 2012.<sup>24</sup> This inter alia considered the market drivers at sector level and assessed how the Cork Docklands could contribute to potential employment generation and economic recovery at regional and national levels. The assessment provided an estimate of employment potential of 7,000 additional jobs in the docklands by 2021. Indecon has not independently assessed this estimate, and we would highlight that the likely levels and timing of investment and employment creation are subject to considerable uncertainty. This is reflected in the wide variance of estimates developed.<sup>25</sup> However, depending on the market environment, the estimates suggest that the Cork Docklands has the potential to deliver substantial economic benefits.

### Role of N28 upgrade

The N28 is not necessarily uniquely instrumental to the redevelopment of the Cork Docklands, the viability of which is dependent on a range of factors. However, by facilitating the relocation of the Port of Cork's operations in the city, the completion of the upgrade would have an indirect influencing role in facilitating 'planning gain' for Cork and opening up the potential to redevelop the Cork Docklands.

## 6.4 Summary of Key Conclusions

This section examined the role of the N28 upgrade in acting as a facilitator of tourism and wider regional development, including the development of Cork Docklands.

The N28 upgrade could act as a catalyst for the development of tourism in the South-West region, through both maximising accessibility to a redeveloped Spike Island and other locations in Cork Harbour, and through improving access to Cork and the wider South-West region for visitors arriving by ferry through Ringaskiddy Port.

We also examined the potential for the N28 upgrade to play an influencing role in the redevelopment of the Cork Docklands. This would take place primarily through addressing the indirect but important prerequisite of facilitating the relocation downriver of the Port of Cork's current operations at City Quays and Tivoli, thereby opening up these sites for redevelopment and providing a catalyst for the wider redevelopment of the docklands. Recent assessments undertaken by Cork City Council indicated a potential to support up to 7,000 additional jobs in the docklands by 2021. The N28 upgrade is not necessarily uniquely instrumental to the redevelopment of the Cork Docklands, the viability of which is dependent on a range of factors. However, by facilitating the relocation over time and consolidation of the port's operations at Ringaskiddy, the completion of the upgrade would have an indirect influencing role in facilitating 'planning gain' for Cork and opening up the potential to redevelop the Cork Docklands.

24. Cork City Harbour – Unlocking Cork Docklands, Op. Cit.

25. For example, Cork Docklands Directorate's Business Implementation Plan (July 2008) suggested that the docklands, when fully developed, would support approximately 24,000 jobs on-site, of which approximately 15,500 would be estimated to be additional to the Cork metropolitan area.

# 7. VIEWS OF THE BUSINESS COMMUNITY

## 7.1 Introduction

As in the case of our 2010 assessment, as part of this present updated study, Indecon sought the views of the business community in the Cork region on implications of the N28 upgrade, via a survey of Cork Chamber member businesses. The key findings from this research are presented in this section, while additional findings are included in the annex to this report.<sup>26</sup>

This complementary research highlights the intuitive appreciation of and level of importance attached to the N28 as a strategic route. It therefore provides a level of validation to the analytical economic approach presented in the preceding assessment.

## 7.2 Key Research Findings

### 7.2.1 Transport-related benefits

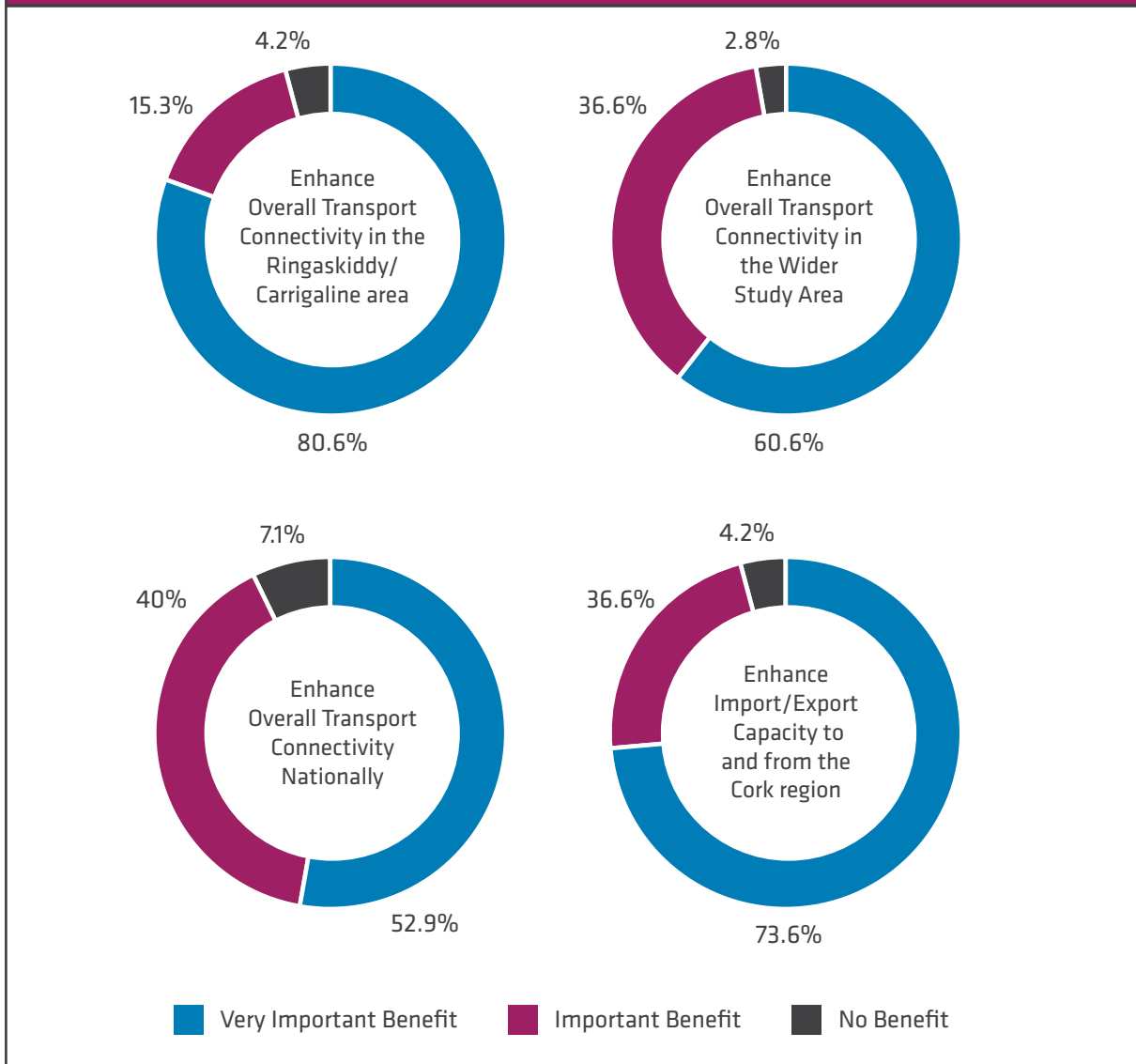
The figure overleaf highlights the views of the business community in Cork on the importance businesses attach to the transport-related impacts of completion of the N28 upgrade. This considers the impacts in terms of the extent to which the scheme would enhance the overall transport connectivity in: (a) the Ringaskiddy/Carrigaline area, (b) the wider study area (encompassing the Cork city and metropolitan area, Cork county and the remainder of the South-West region), and (c) nationally, as well as enhancing import/export capacity to/from the Cork region.

The research indicates that businesses generally in the Cork region attach a very high level of importance to the prospective transport-related benefits of completion of the N28 upgrade. This is particularly the case in relation to the impacts on the N28 corridor, with over 80% of businesses of the view that the scheme would be very important in enhancing the overall transport connectivity of the Ringaskiddy/Carrigaline area, while a majority of firms also indicating that the upgrade would enhance connectivity in the wider region and nationally. Almost three-quarters (73.6%) of businesses responding to the research indicated their belief that the N28 upgrade would enhance import/export capacity to/from the Cork region.



26. The research findings presented in this chapter are based on responses from a representative sample totalling 89 companies/businesses. Indecon was very pleased with this level of response.

Figure 7.1: Views of Businesses on Economic Benefits of Completion of N28 Upgrade – Enhanced Transport Connectivity



Source: Indecon Confidential Survey of Cork Chamber Member Businesses

### 7.2.2 Port-related benefits

Indecon also sought the views of the business community in Cork on implications of the N28 upgrade for the development of the Port of Cork at Ringaskiddy. These included the views of major multinationals and Irish companies on the following specific port-related implications of the scheme:

- > Ensuring the external trading connectivity of the wider study area and the national economy via Port of Cork's terminal at Ringaskiddy;
- > Facilitating the planned expansion of Port of Cork's terminal at Ringaskiddy;
- > Facilitating provision of adequate port capacity regionally and nationally; and
- > Ensuring efficient access to/from the Port of Cork's terminal at Ringaskiddy.

The figure overleaf summarises the views of the business community in Cork in relation to the specific port-related implications of the N28 upgrade.



Figure 7.2: Views of Businesses on Economic Benefits of Completion of N28 Upgrade – Port-related Implications

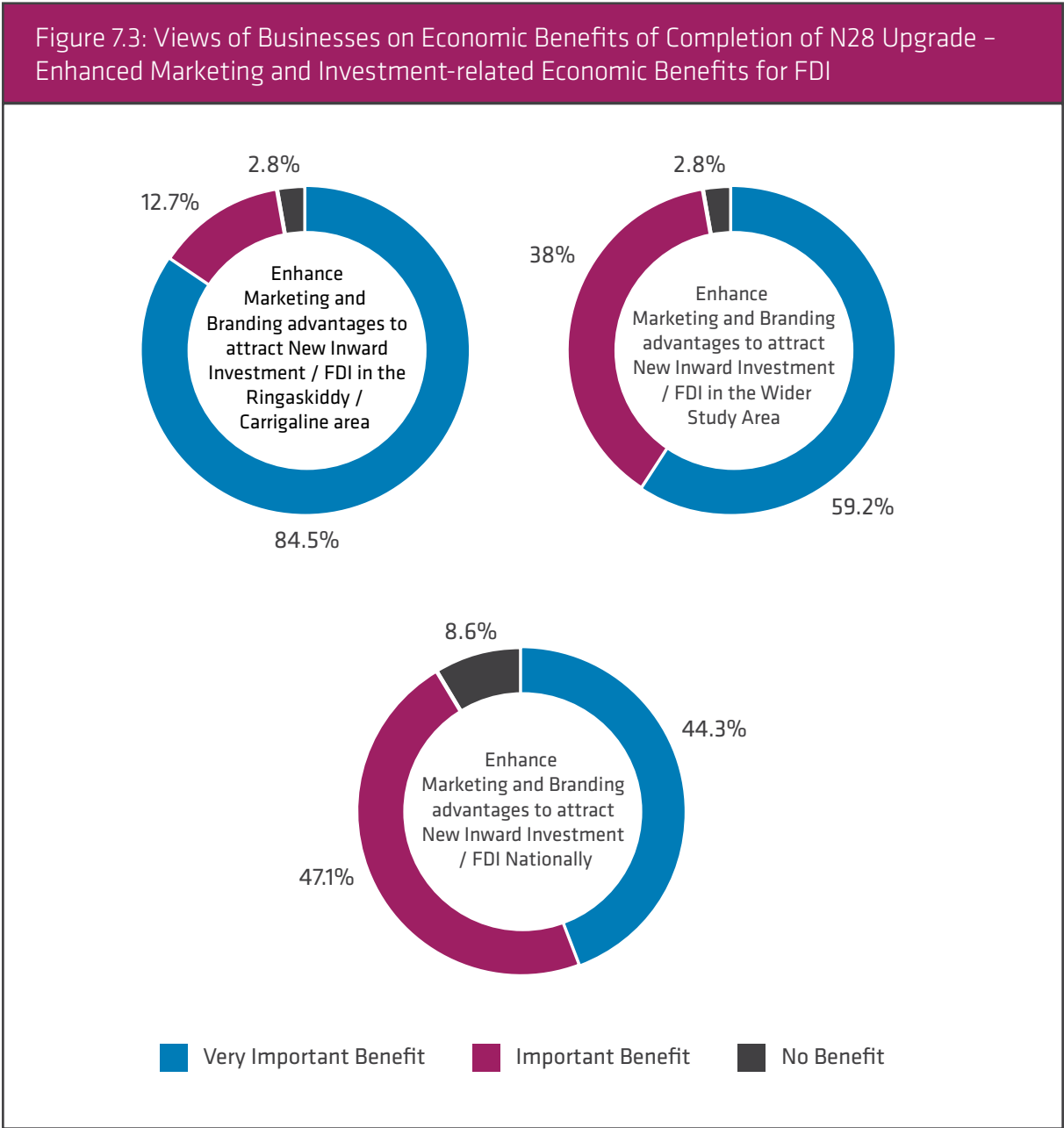


Source: Indecon Confidential Survey of Cork Chamber Member Businesses

The findings from Indecon's research highlight the very high levels of importance attached by businesses in the Cork area to the port-related implications of completing to the N28 upgrade. Notably, the vast majority (over 95%) of companies consider that the scheme would be either very important or important in terms of facilitating the development of Ringaskiddy Port, and facilitating sufficient port capacity and ensuring the external trading connectivity of the region and national economy. In addition, the finding that 98.5% of companies responding to the survey indicated that the N28 upgrade would be very important or important in ensuring efficient access into the port's terminal at Ringaskiddy demonstrates the need to carefully consider the design of the final leg of the scheme in the Ringaskiddy area.

7.2.3 Marketing and investment-related benefits

The research indicates a strong consensus among businesses in the Cork region in relation to the impacts of the N28 upgrade on enhancing the marketing and investment-related potential of the region to attract new inward investment as well as FDI. The research findings, highlighted in the figure below, demonstrate that a large majority (84.5%) of firms are of the view that completion of the scheme would be very important in providing enhanced marketing and branding advantages to attract new FDI to the Ringaskiddy/Carrigaline area. In addition, over 59% of businesses consider that the N28 upgrade would be very important in providing similar investment support for the wider South-West region.

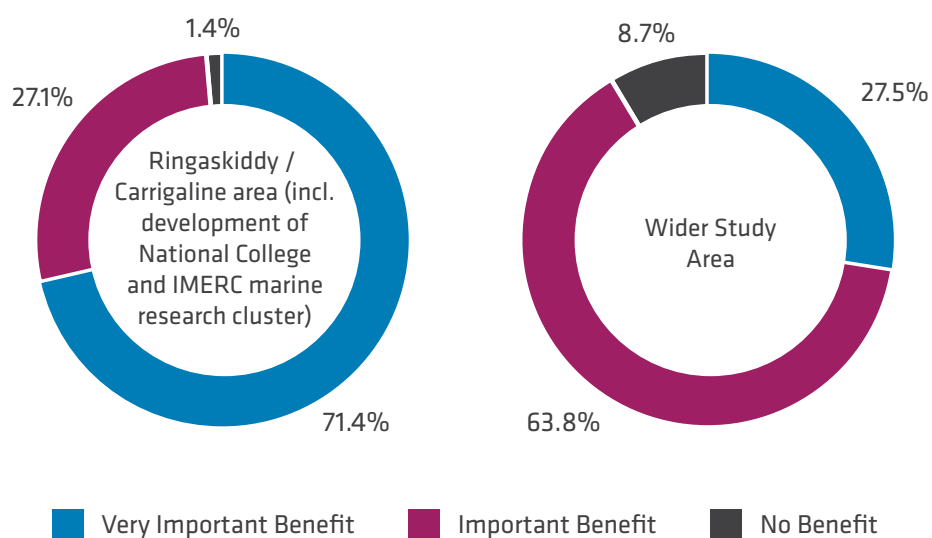


Source: Indecon Confidential Survey of Cork Chamber Member Businesses

## 7.2.4 Higher education and research activity benefits

Businesses are also of the view that completion of the N28 upgrade would benefit the development of higher education and research activities in the region. This is particularly the case in relation to facilitation of activities in the Ringaskiddy/Carrigaline area, with 71.4% of firms indicating that the scheme would be very important in supporting the development of the National Maritime College and the IMERC research and industry cluster in Ringaskiddy (see figure below).

Figure 7.4: Views of Businesses on Economic Benefits of Completion of N28 Upgrade – Potential Higher Education and Research Benefits

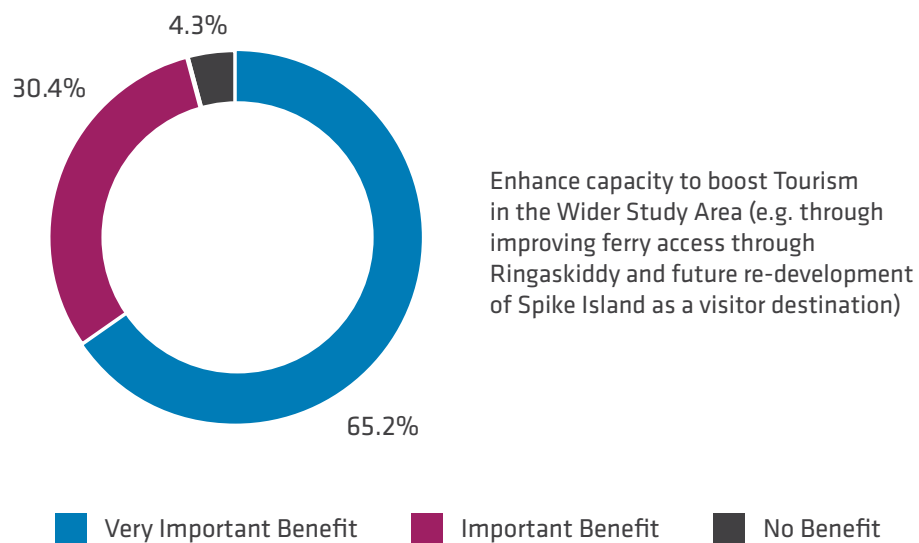


Source: Indecon Confidential Survey of Cork Chamber Member Businesses

## 7.2.5 Tourism development

The figure below highlights the views of businesses on the benefits of the N28 upgrade in supporting the tourism industry. Almost two-thirds of firms in the Cork region are of the view that completion of the N28 upgrade could be very important in enhancing the capacity to boost tourism activity in the wider region, both through improving access to the region for visitors arriving by ferry through Ringaskiddy and also through supporting the development of Spike Island as a tourism and recreation attraction.

Figure 7.5: Views of Businesses on Economic Benefits of Completion of N28 Upgrade – Impacts on Tourism



Source: Indecon Confidential Survey of Cork Chamber Member Businesses

## 7.2.6 Overall economic impacts

In terms of overall economic impacts, according to the research findings, a high proportion (70%) of firms is of the view that employment growth of 5% or above could result through the development and other impacts that would arise as a result of completion of the N28 upgrade. Of this, 32.9% of businesses are of the view that an increase in employment of between 5% and 10% would be likely over the long term, while 37.1% believe that an increase of over 10% could be achieved (see table below).

**Table 7.1: Views of Businesses on Economic Benefits of Completion of N28 Upgrade – Estimated Long-Term Employment Impacts**

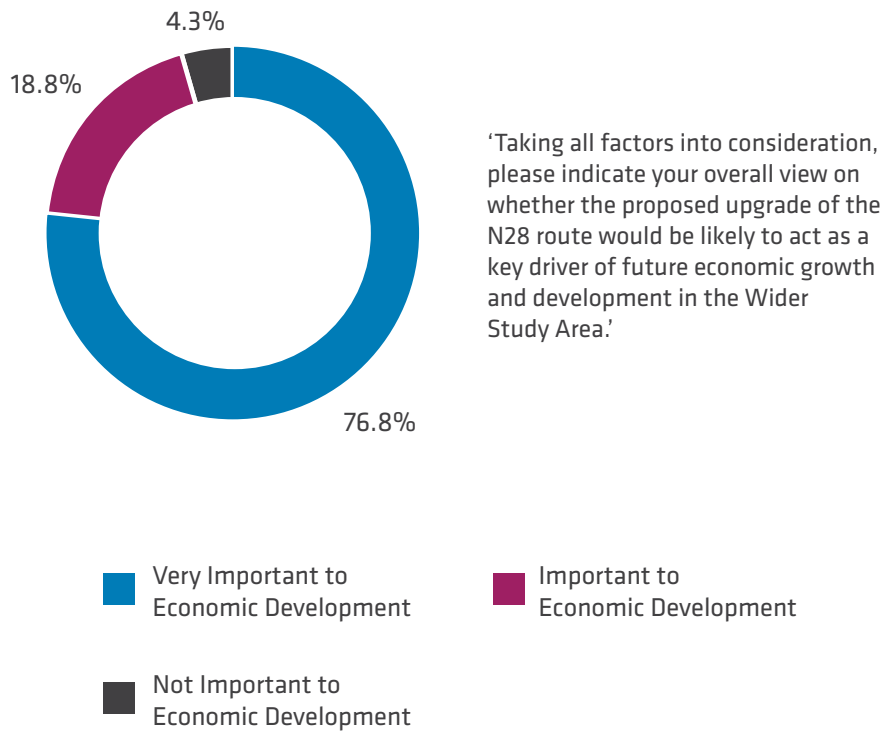
Please indicate below your indicative view on the likely approximate long-term impact over time of the proposed upgrade of the N28 on employment in the Wider Study Area.

An Increase in Employment of More than 10%	37.1%
An Increase in Employment of between 5% and 10%	32.9%
An Increase in Employment of between 3% and 5%	14.3%
An Increase in Employment of between 1% and 3%	10.0%
No Impact on Employment	5.7%
All Respondents	100.0%

Source: Indecon Confidential Survey of Cork Chamber Member Businesses

Overall, the business community in Cork is very supportive of the N28 scheme. This is evident from the findings presented below, which indicate that over three-quarters (76.8%) of businesses in the Cork region are of the view that completion of the scheme will be very important for the economic development of the region.

Figure 7.6: Overall Views of Businesses on Impact of N28 Upgrade as a Key Driver of Future Economic Growth and Development in the South-West Region



Source: Indecon Confidential Survey of Cork Chamber Member Businesses





# 8. CONCLUSIONS & RECOMMENDATIONS

## 8.1 Introduction

This chapter brings together the sectoral analyses completed in the preceding chapters to develop overall conclusions and recommendations from this assessment.

This assessment identified the overall potential impacts of completion of the N28 upgrade on the basis of the following key sectoral aspects:

- > The direct transport benefits in the form of reduced journey times and costs (including associated environmental costs) for road users in the immediate N28 corridor;
- > The impacts in terms of enhanced capacity to serve the external trading and connectivity requirements of the South-West's business community through facilitating the development of Port of Cork's operations at Ringaskiddy and ensuring the provision of adequate port capacity;
- > The benefits in relation to improved capacity to serve and enhance the key industry cluster of multinationals and indigenous firms operating in the Ringaskiddy/Carrigaline area and support the development of the nationally strategic IMERC maritime and energy strategic research and industry cluster; and
- > The catalytic and influencing role of the scheme in supporting wider regional development, including the development of the tourism sector and of the Cork docklands.
- > We considered separately the financial and employment-related impacts arising from the above aspects, where relevant.

## 8.2 Sectoral Impacts of N28 Upgrade

### 8.2.1 Direct transport benefits

Our assessment indicated that the scheme would deliver significant direct transport benefits for freight and commuter traffic along the N28 corridor. These impacts would take the form of prospective reductions in journey time and in vehicle operating costs, as well as reduced numbers of accidents and environmental emissions. These benefits would underpin the competitiveness of the South-West region by supporting the internal and external connectivity of the region.

The quantified direct transportation-related user benefits and the construction employment benefits of the scheme are summarised in the table overleaf. The direct transportation-related benefits of the project are estimated at between €83.4 million and €140.0 million in economic net present value terms, depending on future traffic growth assumptions. This implies a Benefit-Cost ratio of between 1.62:1 and 2.04:1, indicating that the project would be expected to yield a positive economic return. As well as these longer-run benefits, there would be an immediate benefit in the form of an estimated 852 jobs that would be supported during the construction phase.

**Table 8.1: Economic Impacts of N28 Upgrade – Direct Transport User and Scheme Construction Benefits**

**€83.4M  
to €140M**

**852** Estimated scheme  
construction-related jobs

Estimated Net Present Value of Transportation-related User Benefits of N28 Upgrade

Source: Indecon analysis

Overall, we continue to believe that the proposed scheme would underpin the competitiveness of the South-West region by supporting the internal and external connectivity of the region and by providing the transportation capacity required to meet expected growth in freight and commuter traffic along the N28 corridor. Furthermore, the scheme would copper-fasten the role of the N28 as a strategic national primary route serving the EU TEN-T core transport network, as well as being complementary to the overall traffic management of the strategic national routes in the Cork Metropolitan Area.

### 8.2.2 Impacts on external trading & connectivity of the South-West region

A key issue concerns the potential economic detriments or costs that would result from non-completion of the N28 scheme in terms of the adverse implications for the external connectivity and competitiveness of the South-West region, in addition to the environmental costs. These costs would arise particularly if non-completion of the N28 upgrade were to impede the strategic development of port capacity at Ringaskiddy, thereby adversely impacting on the external trading requirements of the business community in the South-West region and undermining regional competitiveness.

The Port of Cork is the second largest multimodal port in the State and is a 'Tier 1 Port of National Significance' under the Government's National Ports Policy framework. The port has also been designated as a Core Network port under the EU's TEN-T, which also means that Member States must take appropriate measures to ensure that the core network is developed, including provision of adequate motorway or express standard road linkages to core network ports. The port is currently seeking statutory consent to develop its Ringaskiddy terminal, with the objective of facilitating the relocation over time of the port's existing activities from Tivoli and City Quays and to consolidate these trades at Ringaskiddy. Critically, this will enable the port to respond effectively to market developments, in terms of the projected growth in trade and the ongoing trends towards larger vessels serving this trade.

Indecon's assessment clearly demonstrates that a failure to provide the N28 upgrade, by undermining the port's plans to expand its capacity at Ringaskiddy, would indirectly impede its ability to respond to market and port sector developments. In particular, failure to develop the port would result in an estimated loss in overall trade volumes of 27% relative to projected 2033 traffic. Importantly, this would imply that Port of Cork's share of national traffic in the key LoLo segment would decline from 22.7% in 2012 to less than 5% by 2033, which would undermine the commercial viability of the port.

It is estimated that the potential loss in projected trade growth would be equivalent to €22.8 billion when measured in present value terms. This would also translate into a loss in potential future employment, which could amount to an estimated 57,472 jobs by 2033 compared to what could otherwise be supported if Ringaskiddy Port is fully developed as planned. The estimated loss in trade to the port would also give rise to substantial environmental costs through the additional transport and CO2 emissions that would arise if the trade lost to Cork had to be diverted to more distant ports.

**Table 8.2: Economic Impacts of N28 Upgrade – Adverse Implications for Future Port Development and External Connectivity of Non-Completion of Scheme**

**-€22,768M**

Estimated future loss in value of trade through  
Port of Cork – Present value over period 2012-2033

**-57,472**

Estimated loss in port-related employment  
(based on 2008 operations)

Source: Indecon analysis

### 8.2.3 Role of N28 in Enhancing Ringaskiddy Industry and Research Cluster

The assessment also examined the strategic role played by the N28 upgrade as a catalyst for enhancing the economic potential of the Ringaskiddy/Carrigaline area. This relates to the presence in the area of one of Ireland's foremost industrial clusters, as well the important IMERC maritime and energy strategic research and industry cluster.

A range of factors influence decisions on foreign direct investment. However, given the existing major industry cluster in the area, by addressing existing transportation constraints and the poor impression presented to potential investors, completion of the N28 upgrade could provide a catalyst for further investment in the Ringaskiddy area. Scenarios examined by Indecon indicate that development of the IDA's available sites in the area could directly support additional employment of up to 2,228 persons (over and above the existing level of employment of 3,419 persons) and associated annual incomes of up to €173 million. This additional activity would also support significant wider economic spin-offs in the local and wider regional economies.

**Table 8.3: Economic Impacts of N28 Upgrade – Catalyst for Enhancing Ringaskiddy Industrial Cluster**

**2,228**

Estimated additional direct employment

**€173 Million**

Estimated annual direct financial impact

Source: Indecon analysis

In addition to enhancing the employment potential of IDA sites, the N28 upgrade would also underpin the development of the IMERC campus, as well as support the ongoing expansion of the National Maritime College and the Irish Naval Service at Haulbowline. The IMERC campus is designed to strategically position Ireland to capture global research and commercial opportunities in the maritime and marine energy sectors. Any such investment is subject to considerable uncertainty. However, the campus, if fully developed, would have the capacity to accommodate over 2,000 jobs in research and commercial activities. As in the case of the pharma industry cluster, the potential to deliver these additional economic impacts is curtailed by the existing capacity and accessibility issues on the N28.

### 8.2.4 N28 as a Catalyst for Wider Regional Economic Development

The study also examined the role of the N28 upgrade in acting as a catalyst or facilitator of tourism and wider regional development. We assessed the potential for the N28 upgrade to play an influencing role in the redevelopment of the Cork Docklands. This would take place primarily through addressing the indirect but important prerequisite of facilitating the relocation downriver of the Port of Cork's current operations at City Quays and Tivoli, thereby opening up these sites for redevelopment and providing a catalyst for the wider redevelopment of the docklands. Recent assessments undertaken by Cork City Council indicated a potential to support up to 7,000 additional jobs in the docklands by 2021, although there is considerable uncertainty attached to any such estimates.

While the N28 upgrade is relevant and significant, it is not necessarily uniquely instrumental to the redevelopment of the Cork Docklands, the viability of which is dependent on a range of factors. However, by facilitating the relocation over time and consolidation of the port's operations at Ringaskiddy, the completion of the upgrade would have an indirect influencing role in facilitating 'planning gain' for Cork and opening up the potential to redevelop the Cork Docklands.

The N28 upgrade could also act as a catalyst for the development of tourism in the South-West region, through both maximising accessibility to a redeveloped Spike Island and other locations in Cork Harbour, and through improving access to Cork and the wider South-West region for visitors arriving by ferry through Ringaskiddy Port.

### 8.2.5 Social and Environmental Impacts

It is also important to highlight the social and environmental benefits that would arise from completion of the N28 upgrade or, conversely, the costs that would attend a failure to complete this critical infrastructure project. These include:

- > The social benefits of the N28 upgrade in terms of reduced travel times and increased quality of life for commuters along the N28 corridor;
- > The benefits through increased the road traffic safety and reduced accidents;
- > The environmental benefits of the N28 upgrade arising through the reduced traffic congestion, increased vehicle operating efficiency and reduced CO2 emissions; and
- > The environmental costs of non-completion of the scheme that would arise from failure to facilitate the development of Ringaskiddy Port, with the consequent additional transport costs and CO2 emissions that would arise if the trade lost to Cork had to be diverted to more distant ports such as Dublin Port.

## 8.3 Overall Conclusions and Recommendations

Indecon's detailed analysis and assessment in this study re-affirms the strong economic arguments for channelling investment into the N28 upgrade as a key strategic infrastructural project of national as well as regional importance:

- > The economic rationale for the scheme is most evident in relation to the intrinsic linkage between the N28 and the development of Ringaskiddy Port. The latter will be critical in reinforcing external connectivity and removing constraints to the international competitiveness of the region. Failure to develop Ringaskiddy Port would have substantial costs in terms of competitiveness, as well as trade growth and future employment creation that would otherwise be lost. Ensuring that the N28 access corridor has the capacity to serve the projected growth in trade at the port is therefore of critical importance in this context.



- > The N28 upgrade would also play a catalytic role in delivering important potential wider economic benefits, including through enhancing the strategic bio-pharma industry cluster and the development of the IMERC research/industry cluster in Ringaskiddy, supporting the development of tourism, and providing an indirect role in facilitating the redevelopment of Cork Docklands.
- > These port-related and wider economic impacts would be in addition to the transport-related user benefits and construction employment that would arise from completion of the scheme.

**Based on our latest assessment of wider impacts and completion of a cost-benefit appraisal on the transport user benefits of the scheme, Indecon's believes that there is an existing strong economic and social rationale for completing the N28 upgrade.**

We would issue the following recommendations designed to support rigorous examination of the economic case for funding this key infrastructural project:

1. A detailed and rigorous cost-benefit appraisal of route options should be undertaken in line with Department of Public Expenditure and Reform Public Spending Code and NRA guidelines.
2. Given the strategic nature of the N28 route, which forms part of the TEN-T core network, the wider impacts of the scheme, including productivity, agglomeration and labour supply impacts, could be significant and in principle should form part of a comprehensive appraisal process.
3. Careful consideration should be given in the route corridor design to the wider implications of the scheme, particularly in relation to the final leg and accessibility in the Ringaskiddy area to the port site, as well as IDA sites, the NMCI and IMERC campus.
4. A range of innovative funding options should be considered for the scheme, including PPP and EU funding approaches. These may include funding through the TEN-T Tier 1 fund.



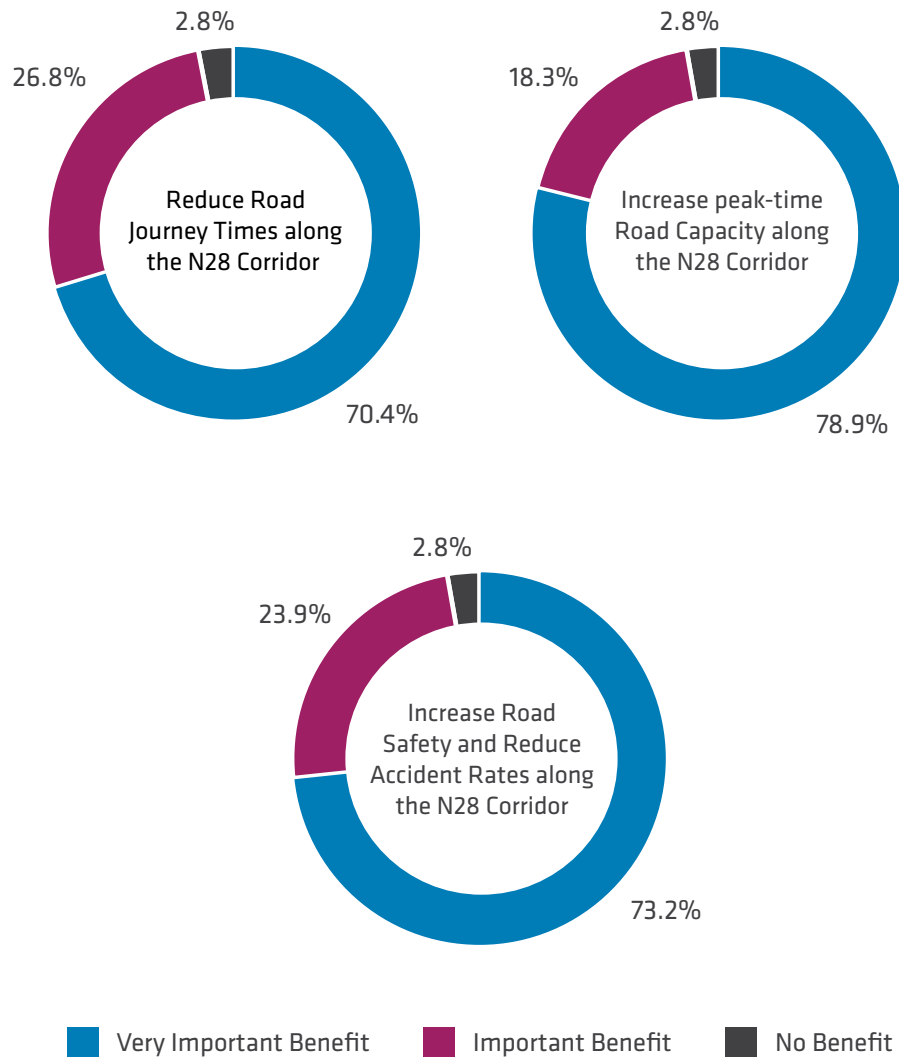
# ANNEX 1 - LIST OF CONSULTEES

List of Organisations Consulted	
No.	Organisation
1	Cork Chamber
2	Cork County Council
3	Cork City Council
4	National Roads Authority
5	National Transport Authority
6	Port of Cork
7	IDA Ireland (South Regional Office and Property Division (Athlone))
8	Irish Exporters Association
9	University College Cork
10	Cork Institute of Technology / National Maritime College
11	Irish Maritime and Energy Research Cluster (IMERC)
12	IBEC
13	American Chamber of Commerce
14	Construction Industry Federation
15	Fáilte Ireland
16	Pfizer Ireland Pharmaceuticals
17	Centocor
18	Novartis Pharmaceuticals
19	PepsiCo Cork
20	Indaver
21	Cork Harbour Environment Protection Association (CHEPA)

Source: Indecon

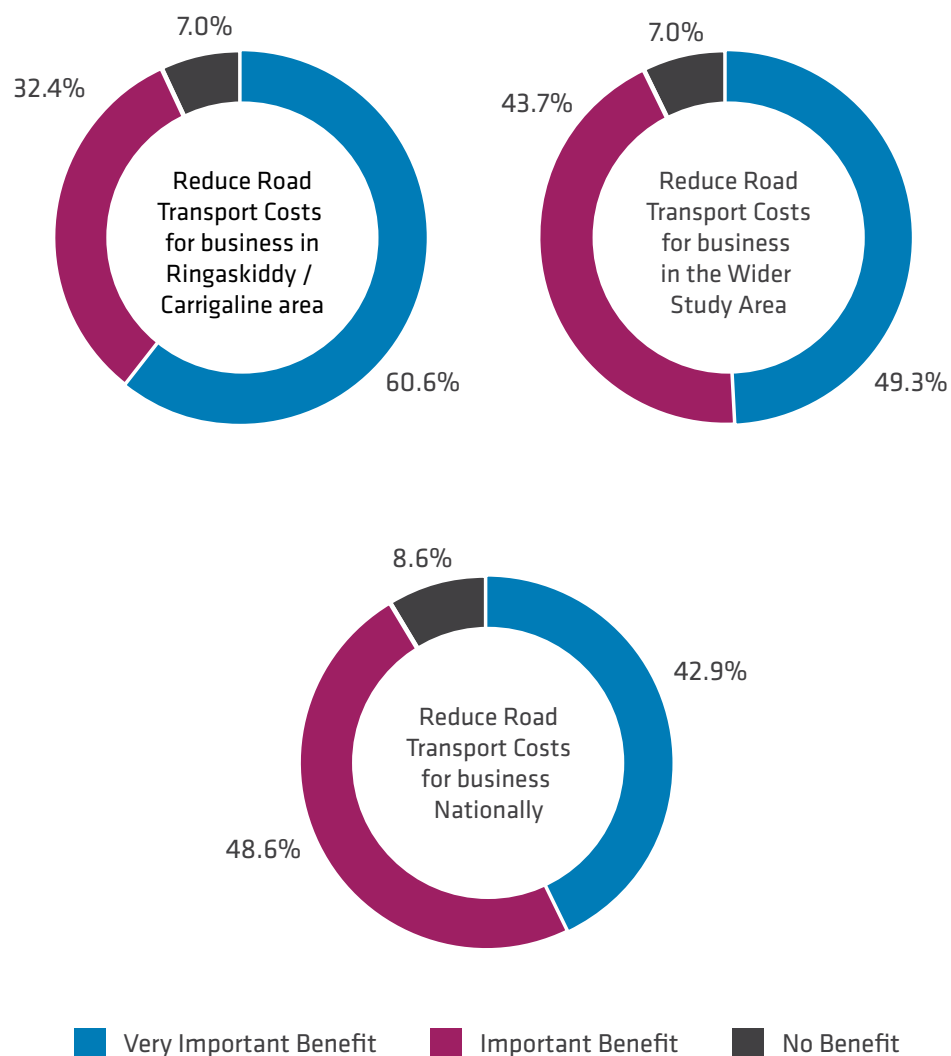
## ANNEX 2 - ADDITIONAL FINDINGS FROM SURVEY OF BUSINESSES

Views of Businesses on Economic Benefits of Completion of N28 Upgrade -  
Transport related Benefits along N28 Corridor



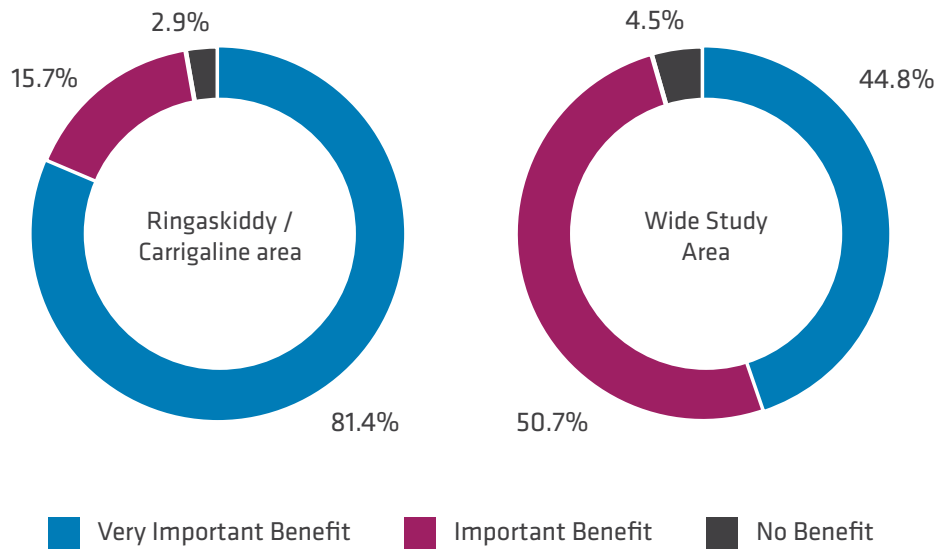
Source: Indecon Confidential Survey of Cork Chamber Member Businesses

## Views of Businesses on Economic Benefits of Completion of N28 Upgrade – Reduced Transport Costs for Business



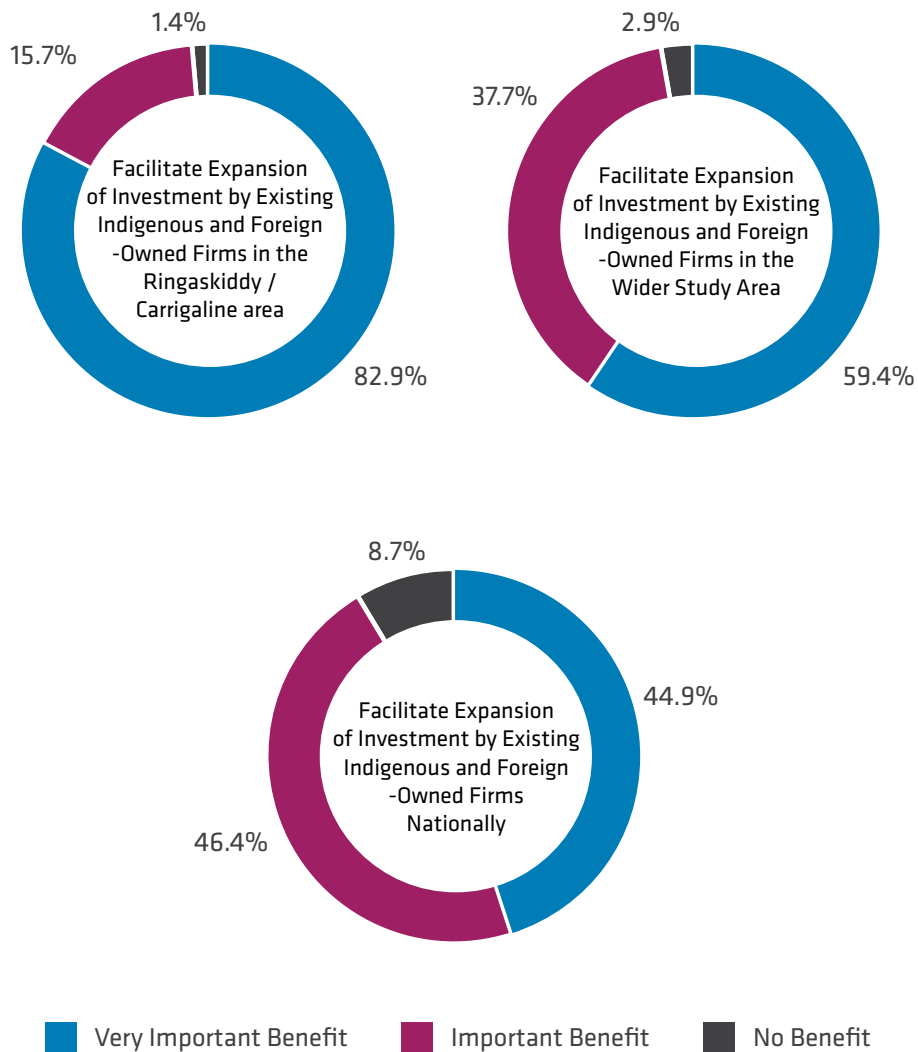
Source: Indecon Confidential Survey of Cork Chamber Member Businesses

Views of Businesses on Economic Benefits of Completion of N28 Upgrade –  
Quality of Life Benefits for Employees/Commuters along N28 Corridor



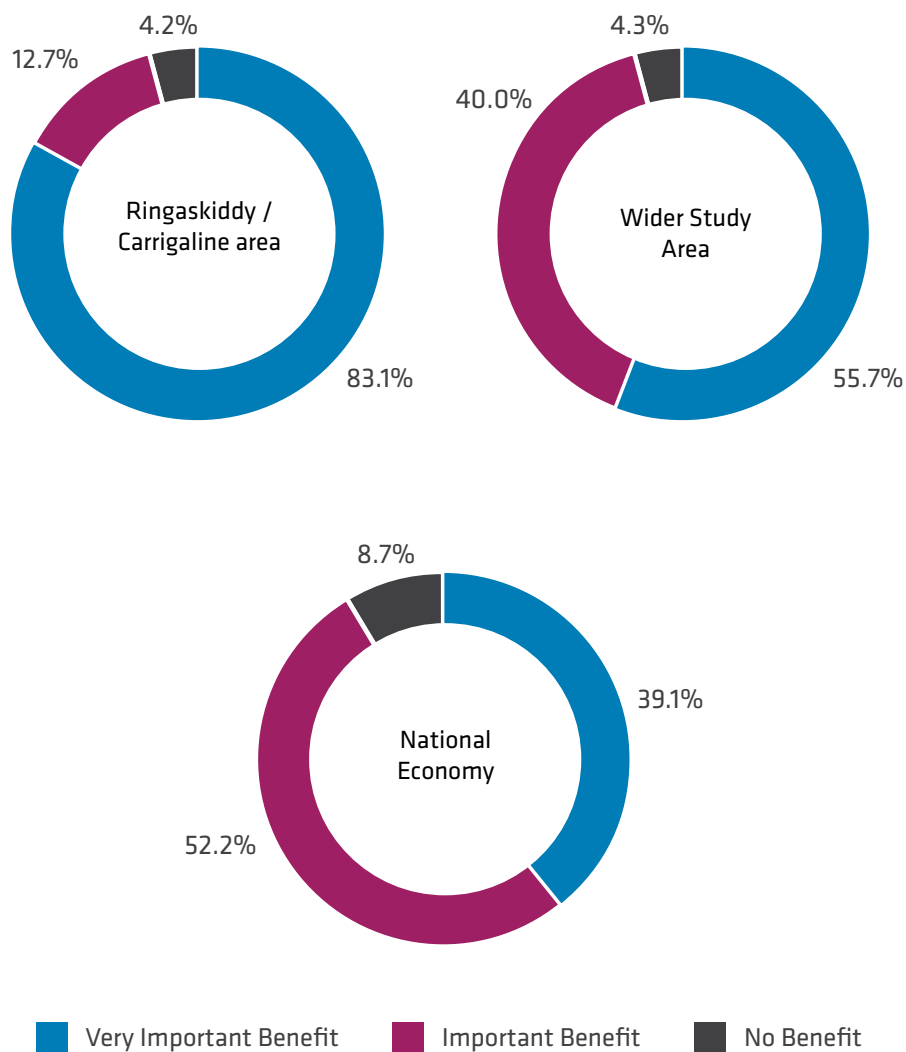
Source: Indecon Confidential Survey of Cork Chamber Member Businesses

## Views of Businesses on Economic Benefits of Completion of N28 Upgrade – Facilitation of Expansion of Investment by Existing Indigenous and Foreign Owned Firms



Source: Indecon Confidential Survey of Cork Chamber Member Businesses

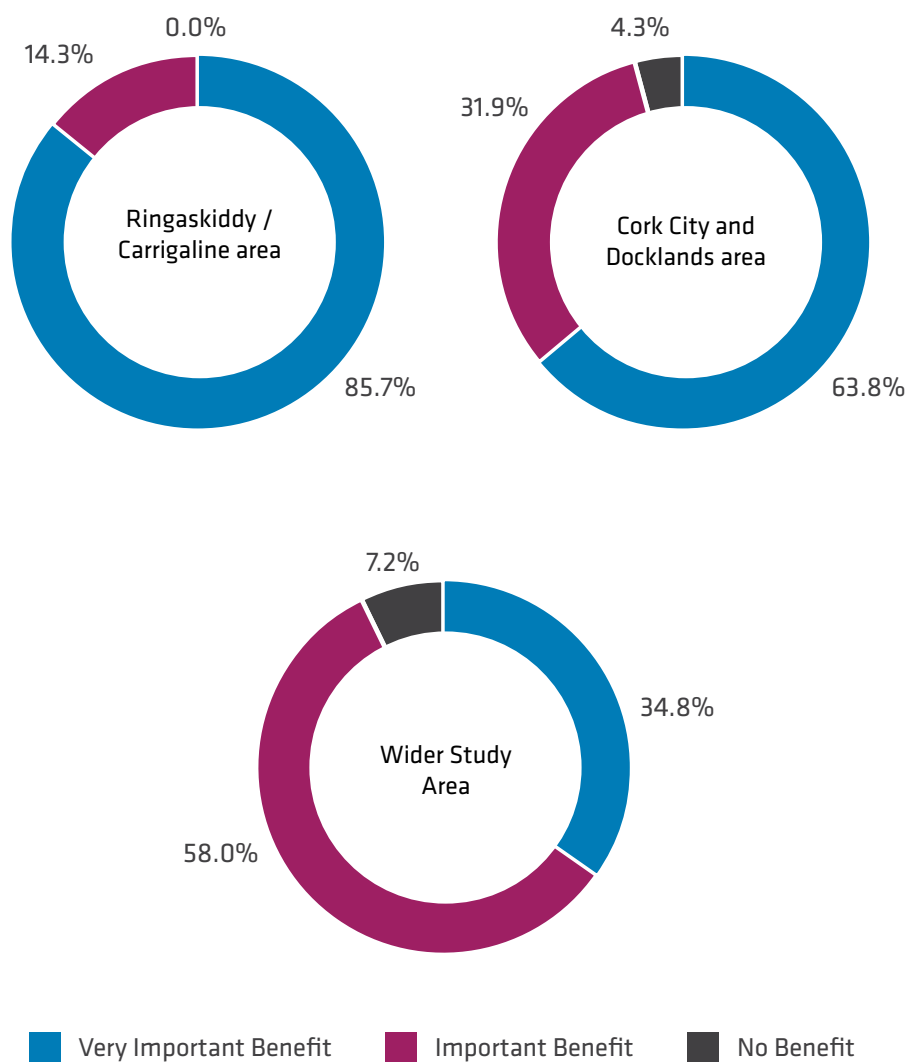
## Views of Businesses on Economic Benefits of Completion of N28 Upgrade – Importance for Overall Economic Competitiveness



Source: Indecon Confidential Survey of Cork Chamber Member Businesses



## Views of Businesses on Economic Benefits of Completion of N28 Upgrade – Sectoral Employment Creation Benefits



Source: Indecon Confidential Survey of Cork Chamber Member Businesses

## Selected Additional Views of Businesses in Cork in Economic Importance of N28 Upgrade in terms of (a) Facilitating the Development of Ringaskiddy Port, (b) Building on the Economic Strengths of the Ringaskiddy/Carrigaline area; and (c) Wider Benefits

"The N28 upgrade is essential for the complete development of Port of Cork terminal and the present and future users of the Ringaskiddy Facility. It is also a catalyst for the development of Cork City Docklands."

"Key infrastructure developments such as the N28 upgrade have been proven to deliver significant financial and wellbeing benefits over the lifetime of such developments. The Port of Cork is a major strategic resource for the Country and should have this kind of investment to leverage benefits economically for the Country. It will also support the continued expansion of SME activities in the city and regions, and promote the growth of start-ups around the major businesses located in the area."

"Under other benefits one must consider the unsafe nature of the road as it currently stands. The upgrade will certainly improve this aspect greatly."

"The current state of the N28, in my view, would act as a serious inhibitor to any further investment either from FDI companies operating in the area or looking to operate in the area. I do not consider the current infrastructure suitable for the proposed expansion of the terminal at Ringaskiddy. Considering the long term objectives of the IMERC campus to attract inward investment from multinationals, I would see the absence of a safe and suitable road structure as a major inhibitor."

"We are currently based in Ringaskiddy and we carefully plan when we will bring our parent companies senior executives to visit the plants in Ringaskiddy so as to avoid the traffic delays. Of late we have smaller windows of opportunity to avoid the delays (which can be significant). We do this to avoid the negative impact of such delays on our current operation and to ensure we can attract future expansion. We know that this is a factor in our corporate decision making process for expanding or locating new business."

"This is a vital road link for the industries, Naval Service, and Maritime College, as well as the many hundreds who travel to and from the city for work each day."

"The N28 Upgrade will undoubtedly facilitate the timely expansion of the Port of Cork's import/export facilities to meet the needs of not only the local economic region but also the national and western European strategic development of one of Europe's major hub ports. The shipping industry is changing at a fast pace in line with greater trade and Cork must have capacity to handle larger container ships if it is to be considered as a serious contender. Current city based port facilities are the Achilles heel of this strategy and the Ringaskiddy redevelopment cannot succeed without a serious road artery linking to the M8 at the tunnel."

"The lower harbour cluster of pharma giants has been a dedicated and vital employer contributing to our local and national economy for the past 30 years. The pharma industry is going through major upheaval with changes in patents and introduction of generic drugs. We need to be able to put every possible infrastructure in place to work with these changes and so keep Cork as a key player on the global stage."

"The N28 upgrade would greatly enhance the viewpoint of FDI parties from an economic and marketing perspective. The future of the Port of Cork and the expansion plans expected to take place will rely heavily on the efficiency of the N28 route providing direct and easy access to and from Ringaskiddy. It is clearly been proven that FDI parties decision points include whether or not the country in question has an efficient infrastructure to support trading activity. From this viewpoint, Cork cannot be left in the dark."

"1. The N28 upgrade is critically important to the Port of Cork development at Ringaskiddy. 2. The upgrade is also very important to the marketability of the IMERC cluster location to Irish SME and FDI clients."

"The Port of Cork in Tivoli has outgrown the facilities provided there and large ships are unable to access that part of the harbour due to sea depth. The facilities in Ringaskiddy are imperative to the development of the Port. Planning was refused previously as the current road network is unable to sustain current levels of traffic and therefore, with the additional traffic that would be generated with the updated facilities at the Ringaskiddy site, is not sustainable. It is a matter of urgency that the N28 upgrade goes ahead, given our economic situation. This would greatly increase the current levels of shipping traffic and create employment."

## Selected Additional Views of Businesses on Weaknesses of Existing N28 Route

"Unacceptable traffic congestion at the Ringaskiddy Roundabout during peak times. The Carr's Hill stretch of road is positively dangerous, especially in bad weather."

"[Route] gets clogged up and sends out bad message internationally for what should be a road system that moves traffic efficiently in and out of the port."

"The existing N28 is totally inadequate for the volume of traffic to the economically important Ringaskiddy and Carrigaline area and to the wider Cork area in general. There is significant congestion over several hours during the morning and evening peak periods. Traffic is also congested travelling to the Mahon region and this will only worsen as more jobs are created in areas such as CityGate, as more employees commute from the Carrigaline/Ringaskiddy region. This will in turn deter increased port activity which in effect results in reduced economic activity for the entire southern region."

"The current road is grossly inadequate and provides a serious safety risk for all users at night and at times of peak flow traffic. Surface run-off at times of heavy rain compounds the issues and the road surface itself is completely inadequate for the type and volume of traffic it carries. The top of Carr's Hill provides a dangerous bottleneck in both directions that further increases the risk of accidents."

"The [N28] linkage to the south link corridor is poor and generates significant accidents."

"The existing N28 is an embarrassment to Cork and the nation as a whole. For tourists and commercial drivers exiting the ferries at Ringaskiddy, it is so important that they should be met with a safe and well maintained road network to guide them into and around Ireland's second City. If we are promoting ourselves as a country to do Business in and attract tourists the upgrading of our roads servicing our major Ports is of the highest priority."

"The current N28 has a chronic traffic problem at rush hour periods and the existing road is totally inadequate for the volume of traffic using the road every day."

"Road is completely inadequate to service existing demands for the Carrigaline/Ringaskiddy area and is inhibiting the development of the port facilities in Ringaskiddy and for the wider Cork region."

"Current infrastructure is inadequate and already impacting on the business, employees and residents. It needs to be addressed as a priority."

"The road is dangerous for motorists and particularly pedestrians and cyclists. Peak traffic levels are unreasonably dangerous."

"The Port of Cork in Tivoli has outgrown the facilities provided there and large ships are unable to access that part of the harbour due to sea depth. The facilities in Ringaskiddy are imperative to the development of the Port. Planning was refused previously as the current road network is unable to sustain current levels of traffic and therefore, with the additional traffic that would be generated with the updated facilities at the Ringaskiddy site, is not sustainable. It is a matter of urgency that the N28 upgrade goes ahead, given our economic situation. This would greatly increase the current levels of shipping traffic and create employment."

Source: Indecon Confidential Survey of Cork Chamber Member Businesses









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