m20

GEARING UP FOR M20:
A ROUTE TO SUCCESS

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Socio-Economic Assessment of M20 Road Scheme

Detailed Assessment Report

Submitted to

Limerick and Cork Chambers

Indecon International Economic Consultants and
RED-C Research & Marketing

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Executive Summary

Introduction and Key Findings from Research

This report was undertaken by Indecon International Economic Consultants and assisted by RED C Research on behalf of Limerick and Cork Chambers. The report represents an independent assessment of the socio-economic benefits of completion of the M20 Cork to Limerick motorway scheme.

The M20 scheme represents a major strategic infrastructure project that is required to address existing weaknesses and growing constraints on the existing N20 national primary route, linking Ireland's second and third largest cities respectively. The scheme was withdrawn in 2010 due to budgetary constraints. However, the Minister for Transport has since provided funding to support initial scoping activities to revisit the case for the scheme. Indecon's assessment is designed to inform decision-making in the context of the Government's forthcoming Mid-Term Review of the Capital Plan. The assessment re-establishes and re-affirms the economic benefits and wider importance of completion of the scheme.

Key Findings

The assessment highlights the following key benefits that would arise from completion of the M20 Cork to Limerick Motorway scheme:

- The current N20 is under significant capacity constraints due to the recent growth in traffic volumes. **Several locations on the current N20 have seen traffic levels at over 120% of capacity in 2017.**
- **Development of the M20 would provide a Blarney to Patrickswell journey time of approximately 47 minutes.**
- **The M20 scheme would prevent approximately 118 accidents per annum,** which could result in an **annual monetary saving of €12.4 million.**
- These transport benefits would also underpin the **competitiveness of the South-West and Mid-West Regions,** through enhancing internal and external connectivity, and improving productivity.
- **The M20 would facilitate the development of a Cork-Limerick 'twin-city' region,** which would provide a complement to Dublin in the context of the National Planning Framework, and the wider Mid-West and South-West Regions (including Kerry) and the Atlantic Corridor.
- The M20 scheme would provide enhanced labour market connectivity for the 273,000 people in the wider catchment's labour force. **The motorway would increase the labour force within a 45-minute commute of major employment centres by an estimated 23% to 243,000 people.**
- The M20's role in enhancing the environment for FDI and indigenous investment has **the potential to support an estimated additional 4,000-5,400 direct jobs in the region.** In gross terms excluding displacement impacts, these additional direct jobs could **provide an annual gross exchequer impact of up to €128 million, depending on the nature of investment attracted.**
- The M20 would deliver improved capacity to serve the external trading and connectivity requirements of businesses and tourism in the South-West Region, including through **expanding the catchment areas of Cork and Shannon Airports, and the major ports of Cork and Shannon Foynes.**
- The scheme would **increase the accessibility of the wider South-West and Mid-West Regions** for overseas and domestic tourism visitors.
- The M20 would deliver social and community benefits, including **reduced stress and improved quality of life for commuters,** and enhancing employment opportunities for residents in more remote locations.

These benefits are further elaborated in the remainder of this executive summary, while a detailed assessment is presented in the main body of the report. Indecon's assessment was informed by research among the business community in the Cork-Limerick region, including a survey conducted by RED C Research of the Cork, Limerick, Mallow, Charleville, and Ennis Chambers' members and a focus group workshop involving diverse stakeholders, in addition to rigorous analysis and modelling.

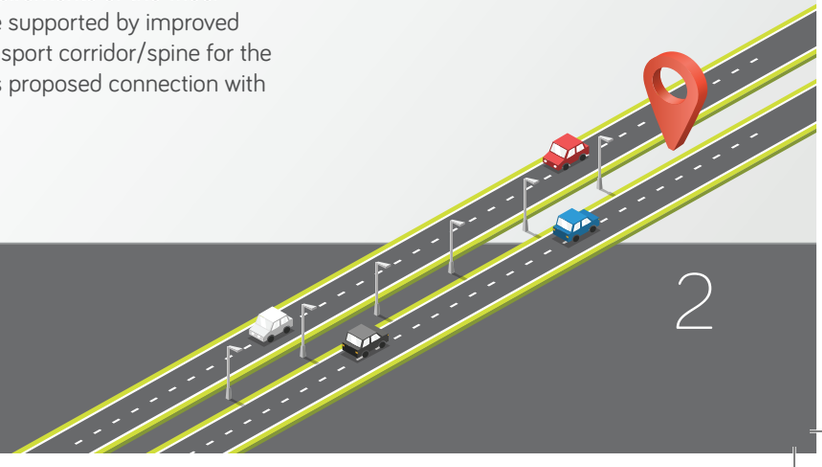
Overview of M20 Scheme

The schematic below describes the proposed M20 route, highlighting (in red) the preferred route corridor.

The proposed motorway would be 80 kilometres in length and would commence near Blarney in Cork and travel north to the existing Patrickswell M20 junction in Limerick. The scheme would provide a By-Pass for Mallow and other traffic bottlenecks.

Route Map of Proposed Cork-Limerick M20 Scheme

Of importance in the wider regional context is that, in addition to reducing journey times and enhancing connectivity between Limerick and Cork cities, the M20 scheme would also serve the internal and external connectivity requirements of the wider South-West Region, including Kerry. These locations will be supported by improved connectivity with the M20, which will act as a strategic transport corridor/spine for the entire South-West and Mid-West Regions due to the M20's proposed connection with several strategically important regional roads.



Policy Context and Rationale for Scheme

National Planning Framework

The rationale for completion of the M20 is consistent with the wider policy context. The Government's National Planning Framework (NPF), which is currently being finalised, will represent a 20-year spatial development strategy for Ireland. The NPF will have four overarching themes, namely to maximise the potential of places; identify infrastructural priorities; ensure resilience of natural resources and cultural assets; and to progress towards a Low Carbon Society. The NPF's overall objectives include the investment in critical national infrastructure by both the public and private sectors in key areas including transport. The NPF is also expected to provide an overall spatial vision for Ireland in terms of both the connectedness of cities and the accessibility of rural areas.

The following key benefits of completion of the M20, are aligned with the principles of the NPF:

- Regional Development: The current focus on connectivity primarily serving Dublin is detrimental to balanced regional development. In this context, the M20 would provide a counterbalance to Dublin, through supporting the development and convergence of Cork and Limerick as Ireland's second and third largest cities respectively, and also in supporting the development of the wider South-West Region including Kerry.

- National Road Network: The completion of the M20 would provide strong transport benefits for the national road network, particularly in relation to improving regional transport links. The scheme would also facilitate the completion of the Atlantic Corridor.

- Labour Market Impacts: The M20 would facilitate the development of a larger, combined Cork-Limerick labour market/skills pool, thereby enhancing the attractiveness of the region for FDI and indigenous investment.

Major stakeholders that recognise the importance of the M20 include the Department of Jobs, Enterprise and Innovation, Enterprise Ireland, IDA Ireland, and Science Foundation Ireland, who collectively made a joint-submission to Government for the NPF. This submission mirrors Indecon's view that **the M20 would foster further regional collaboration and would represent significant progress towards achieving a 'twin-city' economic corridor for the South-West and Mid-West.** The Southern Assembly's submission to the NPF also consider economic collaboration between the Southern region's three cities (including Limerick and Cork) as imperative to achieving maximal regional growth.

Other Relevant Policies

The Government's Action Plan for Jobs includes Regional Actions Plans for the Mid-West and South-West Regions. Both plans note the importance of appropriate road transport infrastructure, highlighting the role of completion of the M20 scheme in enhancing the potential for inward investment due to the improved linkages with the wider region's labour force and strategic assets. The South-West Action Plan for Jobs states:

> *"M20 Motorway linking Cork to Limerick Serving Mallow, Buttevant and Charleville will improve safety and travel times while at the same time relieving traffic congestion in the towns."*

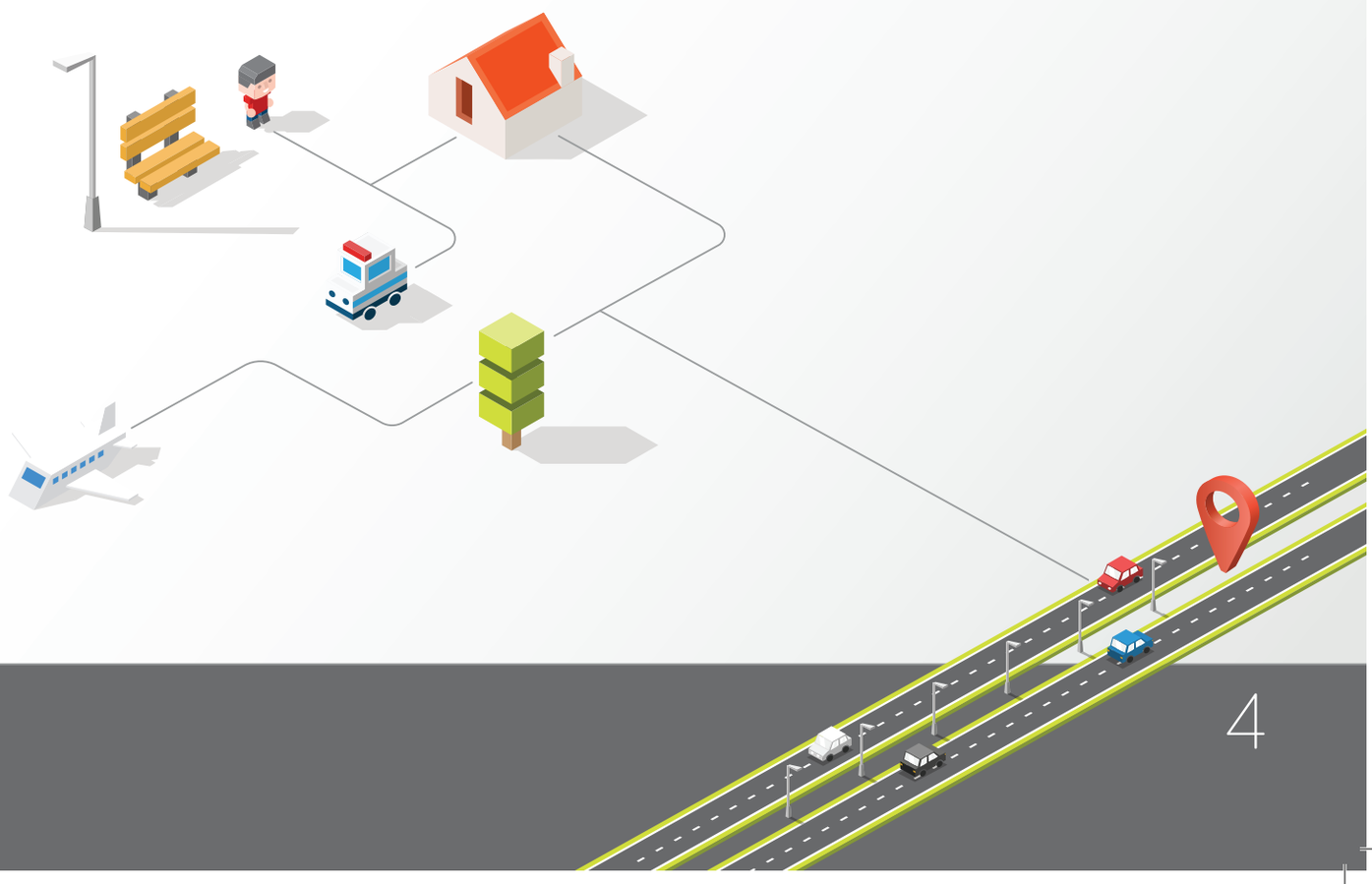
> *"M20 Cork to Limerick road is essential especially for agricultural interests in North Cork"*

The safety benefits of the scheme are also considered to be of critical importance due to the presence of accident black spots on the current route.

The Infrastructure and Capital Investment Plan 2016-2021 also highlights the importance of ensuring the development of a safe and efficient transport network and the completion of the M20, by delivering very significant journey time reductions as well as improved safety for road users will therefore be consistent with the policy goals of the current capital investment plan. It should also be noted that the Mallow By-Pass is already included in the Capital Plan due to the significant bottle neck the town poses for current N20 traffic. As the development of the M20 would result in a Mallow By-Pass, these projects can therefore be considered complementary.

In addition, the M20 would also be consistent with the Department of Transport, Tourism and Sport's Strategic Investment Framework for Land Transport (2015), which states that future transport investment should provide access to poorly served regions, access for large-scale employment proposals, complete missing links or address critical safety issues.

More widely in relation to the broader context, of importance is the strong recovery and current growth in the Irish economy, which underscores the urgent need for investment in transport infrastructure after a long period of under-investment, particularly in relation to addressing deficiencies in relation to regional transport connectivity outside the Greater Dublin Area.



Transportation-related Benefits of Completion of M20

Indecon's assessment examined the transportation-related benefits that would arise from completion of the M20 scheme.

These concern the prospective benefits of the motorway to road users through alleviating capacity constraints on the existing N20, including in the form of reduced journey times and associated costs, and safety benefits in terms of reduced accidents and related costs. The key findings from our assessment are elaborated upon below and overleaf.

Population Growth

The growth in residential population along the M20 corridor is of importance in assessing recent and prospective future traffic increases.

The catchment area of the scheme has seen strong recent population growth, as shown in the table below. Furthermore, population in the catchment area of the scheme is forecast to increase over the next 10-15 years.

Recent Population Growth by Location on Current N20 Corridor

County / Region	2011	2016	2011 - 2016 Percentage Change
Cork Metropolitan Area	289,739	305,222	5.3%
Limerick Metropolitan Area	95,242	97,265	2.1%
Mallow	12,604	13,398	6.3%
Charleville	4,004	4,254	6.2%

Source: CSO Census of Population, Limerick 2030, Cork 2050 Submission to National Planning Framework

The M20 catchment area (and Ireland generally) has seen a sustained positive recovery in economic activity. For example, the South-West and Mid-West Region have seen a fall of approximately 45% in individuals on the Live Register since 2010. Growth in economic activity as well as general population growth will put increased pressure on the local road network. The research conducted by RED C Research on behalf of Cork and Limerick Chambers of multinational and indigenous business in the region as part of this assessment indicated that 77% of firms surveyed expected that their business growth over the next 3-5 years would be likely to result in increased traffic volumes in their area. This highlights the need to ensure adequate road capacity is put in place to facilitate the expansion needs of businesses in the South-West and Mid-West Regions.

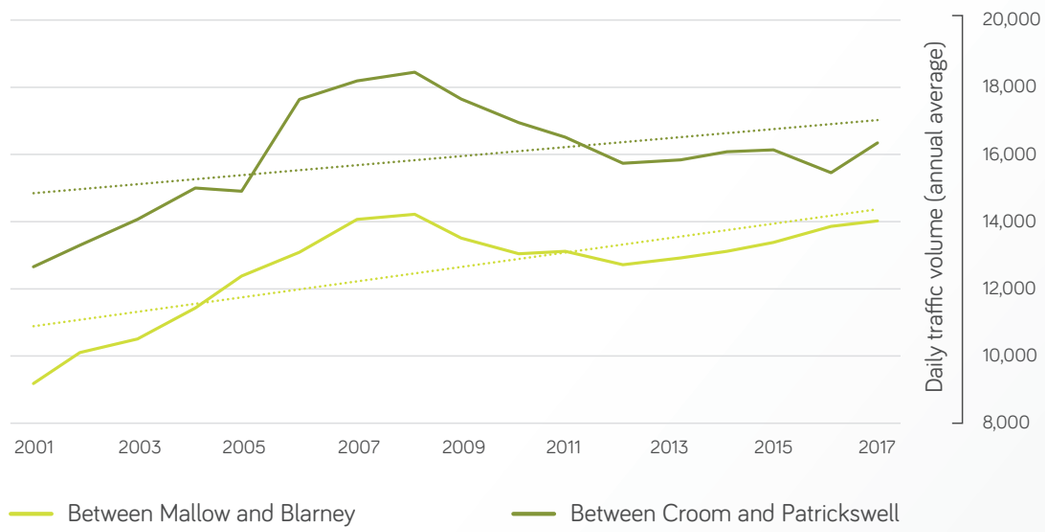
Increased population and economic growth is also placing additional pressure on the housing market, which is currently experiencing strong price increases in both the rental and purchase markets. These pressures are overwhelmingly affecting cities, and primarily Dublin. The Minister for Housing, Planning, Community and Local Government has stated that the National Planning Framework will provide balanced city development and alleviate some of the pressures on the Dublin housing market, and that the majority of the state's population growth should occur outside of Dublin. This will put increased pressure on the wider transport network, which highlights the importance of ensuring adequate inter-metropolitan connectivity. In order to achieve this goal, forward-looking spatial planning is required. It is therefore imperative that the M20 proceeds with development if the South-West and Mid-West Regions are going to alleviate the housing pressures facing Irish cities.

Assessment of Traffic and Capacity Issues on Existing N20

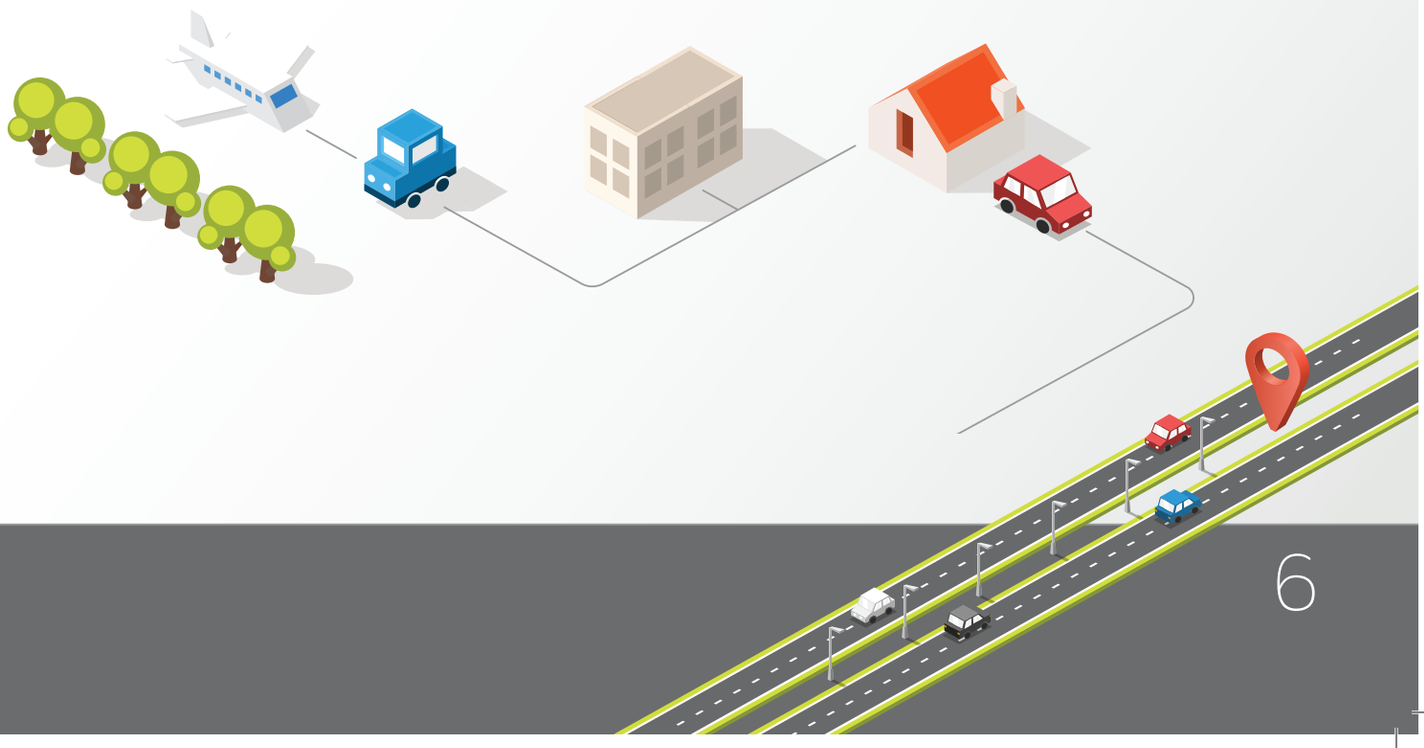
The figure overleaf describes recent historical pattern of growth in traffic volumes on the existing N20 national primary route, based on analysis of TII traffic counter data for two locations on the route.

While the economic recession resulted in decreased traffic on many national routes including the N20 over the period between 2009 and 2013-15, the recent economic recovery has led to accelerating traffic volumes on the N20, particularly since 2015/16, and it is likely that current trends will see the existing route return to a long-run upward trend in traffic.

Recent Historical Developments in N20 Traffic Volumes – 2001-2017



Source: Indecon analysis of TII Traffic Count Data *Note: 2017 data includes January to April only.



The carrying capacity of the existing N20 route is of particular importance and concern. The 2016 TII model of traffic flows on national primary roads indicates that, in 2016, a large part of the existing N20 route was above TII's stated capacity limits in Annual Average Daily Traffic (AADT) terms.[1] The road corridor from Mallow to Cork currently has the worst capacity issues on the N20, and is at a minimum operating at 100 – 120% capacity, according to the TII, while other large sections of the road were nearing capacity levels. Indecon has examined capacity limits in terms of more recent/ updated (2017) traffic flows along the N20. The analysis presented in the table below indicates that **important sections of the existing N20 are either at capacity or substantially above capacity in terms of traffic volumes using the route, relative to carrying capacity limits for this type of road.**

It should be noted that with economic activity increasing coupled with general demographic trends, these capacity constraints on the existing N20 are likely to be exacerbated in the short to medium term.

Capacity Constraints on Current N20 Route

Origin-Destination	Road Type	AADT 2017*	Capacity	Estimated Over/Under Capacity	Traffic as Percentage of Capacity Limit
Mallow to Blarney	Dual Carriageway (T3) and Standard Single Carriageway (T1)	16,361	12,800**	+3,561	128%
Croom to Patrickswell	Standard Single Carriageway (T1)	14,047	11,600	+2,447	121%
Charleville to Buttevant	Standard Single Carriageway (Various Widths - T1, T2)	10,033	10,100**	-67	99%

Source: Indecon analysis based on TII Traffic Count Data and TII TD9 Capacity Constraint Guidelines.
Notes:
* 2017 AADT traffic figures refer to period January to April 2017.
**Capacity is average of various road types along origin-destination routes

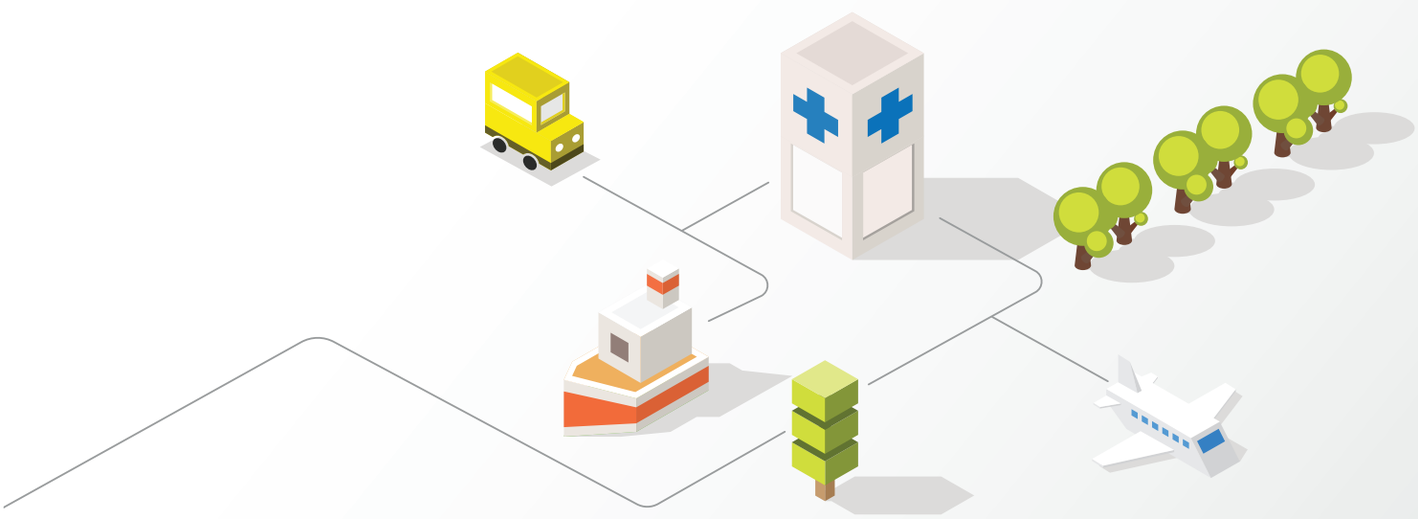
1 Capacity for Level of Service D (LOS D). LOS D is the level at which speeds begin to decline slightly with increasing flows and density begins to increase somewhat more quickly.

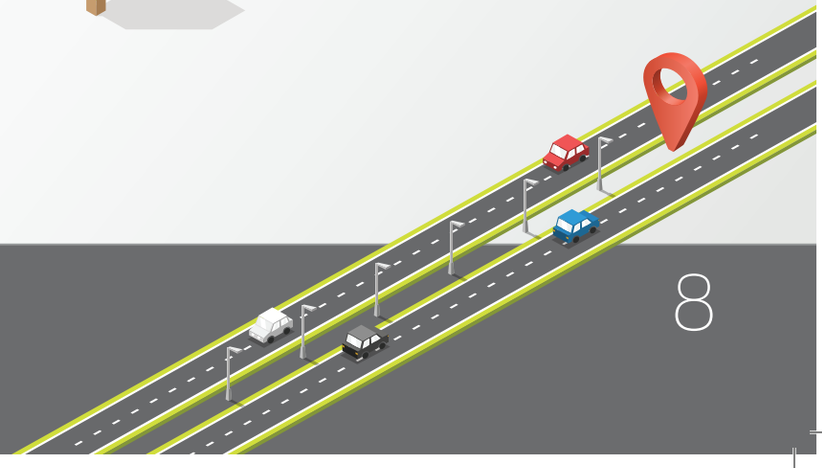
The table below presents an analysis of 2016 traffic volumes at locations along the proposed M20 route corridor and at the end-points of the corridor, including details in relation to Heavy Goods Vehicle (HGV) traffic. The presence of high existing concentrations of HGV usage in particular reflects the role of the N20 as a key national route linking the two major ports of Shannon Foynes Port and the Port of Cork, as well as servicing the transportation needs of primary producers/agri-food and other major industry along the N20 corridor. The deficiencies of the existing N20 were highlighted during the workshop with industry and other stakeholders chaired by Indecon as part of this assessment, with large manufacturing businesses in particular indicating that their haulage operations experience comparatively poor performance/efficiency on the N20 relative to other routes.

Traffic Count Statistics on Current N20 and Urban Area End-Points – 2016

Location	2016 Annual Average Daily Traffic	Percentage of HGV Traffic	Implied Daily Volume of HGV Traffic
On Proposed Route Corridor:			
Croom to Patrickswell	14,047	6.1%	857
Charleville to Buttevant	10,033	7.7%	773
Mallow to Blarney	16,361	6.2%	1,014
At Proposed Route End-points:			
Patrickswell to Limerick	28,243	5.6%	1,582
Blarney to Cork	21,239	4.7%	998

Source: Indecon analysis of TII Traffic Count Data





Journey Time-related Productivity and Competitiveness Benefits

As the M20 scheme represents a major motorway upgrade to an existing national primary road, the potential journey time benefits for road users are expected to be significant.

The analysis undertaken as part of the 2011 Environmental Impact Statement (EIS) on the M20 scheme estimated that completion of the scheme would result in a reduction in journey time of approximately 16 minutes, compared to existing travel times on the N20. This is equivalent to a 26% reduction in journey time.

Indecon has extended the 2011 analysis by applying the estimated percentage changes in journey times to current (2017) traffic volumes on the N20. This would indicate potentially significant time savings from completion of the M20 in the case of a number of selected typical journeys (see table below). **In particular, the estimated end-to-end (Blarney to Patrickswell) journey reduction to from 63 minutes to 47 minutes will offer a substantial improvement to the connectivity of the Cork and Limerick urban centres, as well as providing shorter travel times for the surrounding hinterlands. As travel volumes on the existing N20 continue to expand with the economic recovery, the potential impact of completion of the M20 in reducing journey times would also increase.**

Estimated Journey Time Savings from Completion of M20 – Selected Journeys

Origin	Destination	Estimated Journey Time (mins) – Existing N20	Estimated Journey Time (mins) – with M20 Completed	Estimated Time Savings (mins)
Limerick City	Cork City	96	80	-16
Patrickswell	Blarney	63	47	-16
Croom	Limerick City	25	23	-2
Croom	Cork City	74	59	-15
Charleville	Limerick City	38	33	-5
Charleville	Cork City	56	45	-11
Buttevant	Limerick City	51	42	-9
Buttevant	Cork City	44	36	-8
Mallow	Limerick City	62	51	-11
Mallow	Cork City	33	28	-5

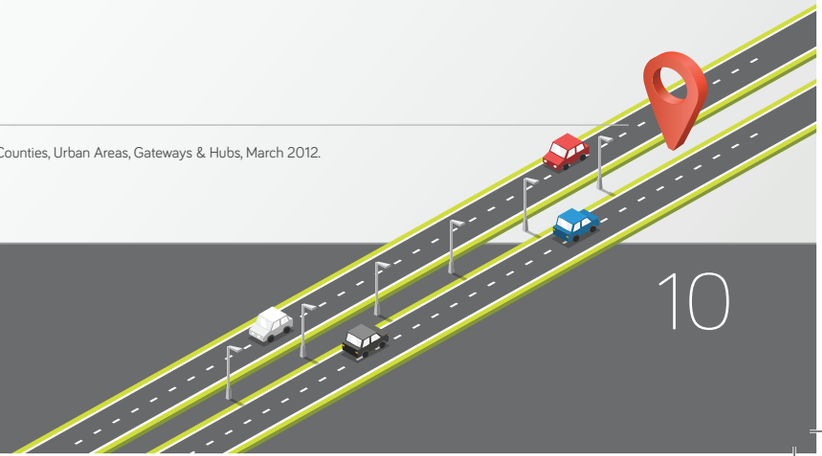
Source: Indecon analysis based on M20 EIS

The existing N20 corridor, due to its connectivity with major regional industrial areas and accessibility to strategic ports and airports, represents an economic corridor of strategic national importance. The M20 catchment contains a diverse economy that will benefit from the improved transport connectivity that would be provided through completion of the motorway. In particular, the presence of large multinationals and indigenous businesses and primary producers which utilise the N20 as a supply route for production inputs as well as transporting finished product on to domestic and export markets, underscores the implications of the existing deficiencies. In its current form, the existing N20 route is considered to be not fit-for-purpose, particularly given the high level of commercial activity taking place between Ireland's second- and third-largest cities, and given the presence of key sectors including engineering, pharma, ICT, logistics and agri-food producers in the region. Further, providing greater levels of urban clustering and knowledge-spill overs, that a motorway investment would offer, is considered by TII to offer nontrivial potential productivity gains.[2]

The estimated journey time reductions that would arise through completion of the M20 represent important productivity benefits for businesses and commuters, as well as general road users. By reducing the cost of transportation, there will be a direct logistics-related productivity and competitiveness benefit for businesses which are transporting inputs and moving finished product to domestic and export markets. In addition, by reducing commuting times for employees, the M20 would expand the supply of skilled labour which is accessible to firms in the region (this aspect is examined in detail in Section 5 of this report). It should be noted that survey research conducted by RED C Research found that over one-third (35%) of the surveyed firms' employees utilise the N20 to commute daily to their place of work.

By addressing the existing weaknesses, the benefits of completion of the M20 in terms of productivity and reduced costs for businesses and employees would combine to enhance the competitiveness of the Mid-West and South-West Regions, improving their attractiveness for FDI and indigenous investment, and boosting potential economic growth and employment creation.

2 TII Impact of Improvements in the Road Network on the Accessibility & Economic Potential of Counties, Urban Areas, Gateways & Hubs, March 2012.

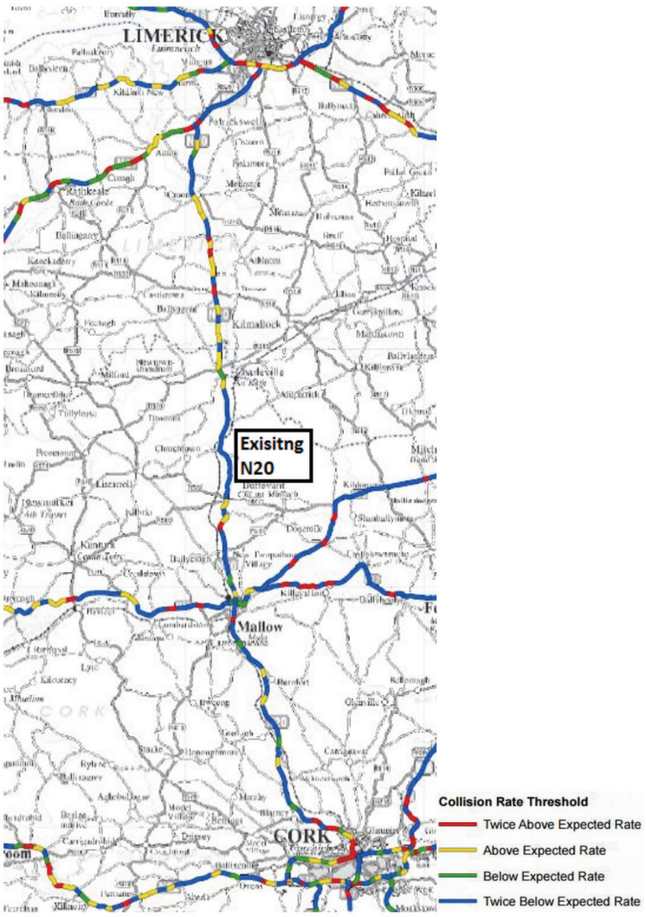


Safety Benefits of Completion of M20

The safety benefits of a road upgrade represent an important factor to consider in deciding whether or not such an investment is justified in socio-economic terms.

TII produces road maps detailing the level of expected traffic relative to the number of accidents on the national primary road network. As can be seen in the figure overleaf, there are a significant number of locations on the N20 that have experienced collisions at a rate of twice that predicted by the TII-modelled estimates.

Collision Rates on Existing N20 – Number of Road Sections with Collision Rates above Pedicted / Expected Levels – 2012-2014 Period



The Road Safety Authority also provides data on road collisions by collision type.[3] Indecon has analysed this data for the latest period available (2013) and have restricted our analysis to the current N20. This is presented in the table overleaf. It should also be noted that primary research of local news organisations highlight that there have also been a significant number of road fatalities on the N20 in more recent years.[4]

3 http://www.rsa.ie/en/RSA/Road-Safety/Our-Research/Collision-Statistics/Ireland-Road-Collisions/
4 http://www.limerickleader.ie/news/local-news/90838/Second-fatality-on-Limerick-roads-in.html

Historical Traffic Accidents on Current N20

Accident Type	2013	2012	2011	2010	2009	2008	2007-1996
Fatal	1	1	4	1	4	4	35
Serious	2	1	3	3	2	7	85
Minor	20	18	20	25	33	28	369

Source: Indecon analysis of Road Safety Authority and Environmental Impact Assessment 2011

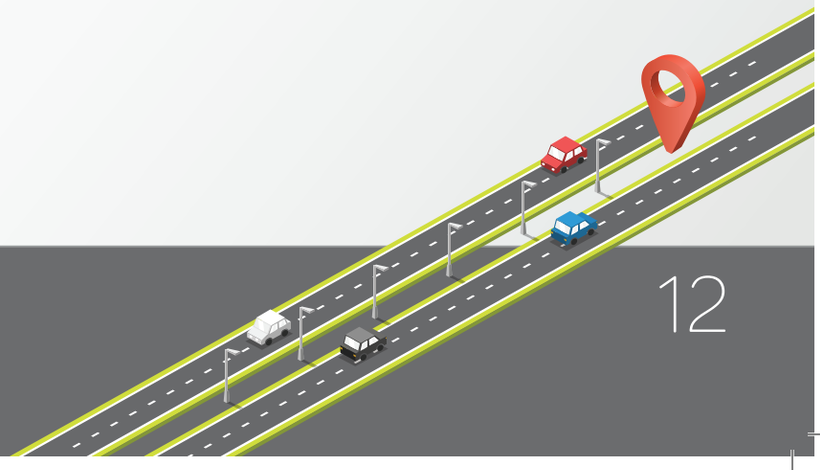
TII has recently updated their Project Appraisal Guideline safety parameters. Indecon has applied the updated PAG parameters to the safety benefits of the scheme, as outlined in the 2011 EIS. These updated parameters imply an improvement in the viability of the M20 investment; however, Indecon notes that the relevant appraisal practitioner is required to complete a fully modelled accident reduction analysis before proceeding with the investment.

Indecon's findings indicate that when the updated parameters are applied, a total of over 3,500 accidents may be avoided over a 30-year period through completion of the M20, or 118 on average per annum (see table below).

Traffic Casualties Avoided Under 2011 Environmental Impact Statement and Revised Traffic Parameters

Accident Type	Incremental Safety Benefits (Previous Parameters)	Incremental Safety Benefits (Updated Parameters)	
	30-Year Period	30-Year Period	Annual Equivalent
Fatality	70	71	2.4
Serious	318	323	10.8
Minor	3,110	3,154	105.1
Total	**3,498**	**3,548**	**118.3**

Source: TII Project Appraisal Guidelines 2016 and M20 Environmental Impact Assessment



Indecon has also provided an indicative annual savings in monetary terms. This is based on the latest Department of Transport Common Appraisal Framework (CAF) published in 2016. **Our estimates indicate that the savings from collisions avoided from the development of the M20 scheme will amount to approximately €12.4 million per annum,** as outlined in the table below.

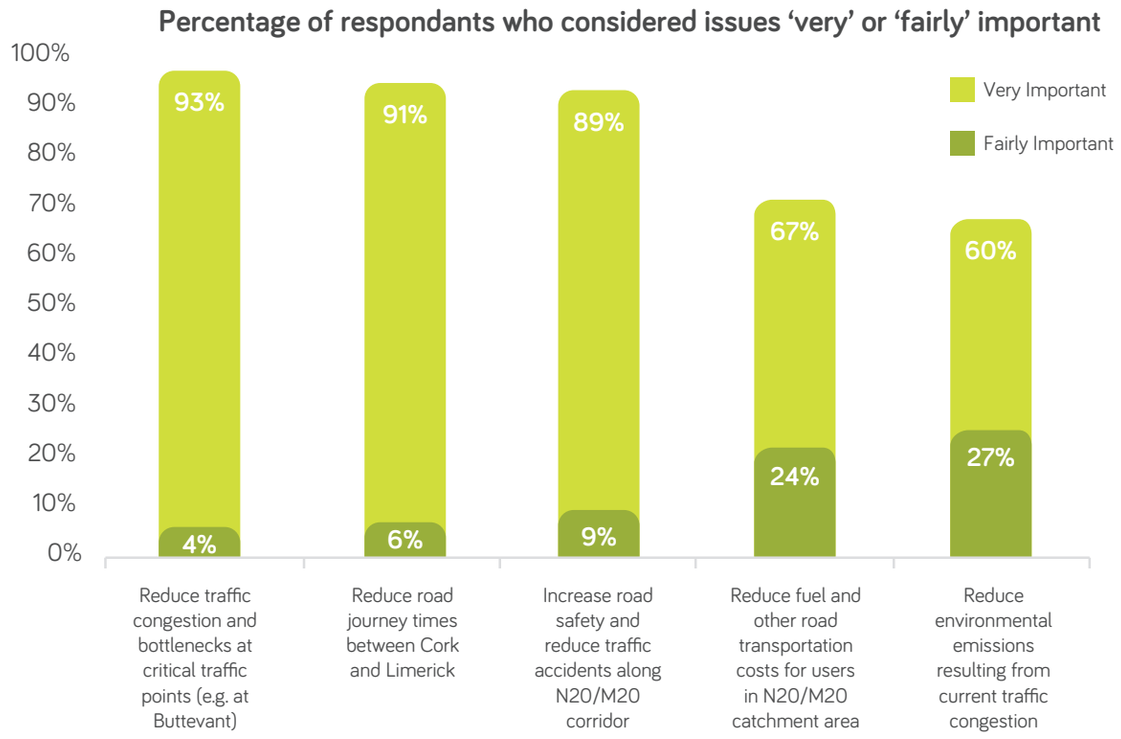
Annual Monetary Savings from Traffic Casualties Avoided Under 2011 Environmental Impact Statement with Revised Traffic Parameters

Accident Type	Annual Equivalent	Monetary Savings
Fatality	2.4	€ 5,545,000
Serious	10.8	€ 3,579,000
Minor	105.1	€ 3,269,000
Annual Savings from Casualties Avoided due to M20 Scheme		€ 12,393,000

Source: TII Project Appraisal Guidelines 2016 and M20 Environmental Impact Assessment

The research conducted by RED C Research also revealed Chamber members' views as to the transport benefits of the scheme. The findings are presented below and show that **97% of respondents considered the scheme's ability to reduce congestion at key bottlenecks (such as Buttevant in Cork) as a 'Very Important' or 'Fairly Important' benefit.** The scheme's impact on journey times and safety were also cited as being 'Very Important' or 'Fairly Important' by a large majority of respondents.

Views of Business Community on Transportation-related Benefits of Completion of M20 Scheme – Reduced Congestion, Journey Times, Accidents and Environmental Emissions



Source: RED C Research & Marketing - Survey of Multinational and Indigenous Business Members of Cork and Limerick Chambers

Wider Economic Benefits of Completion of M20 Scheme

This section outlines the wider economic benefits of the scheme. These include access to labour skills, the development of catchment area sites, and improved accessibility to key regional assets.

Labour Skills / Agglomeration Benefits

An important wider economic benefit that would be associated with the completion of a motorway scheme such as the M20 concerns the potential agglomeration benefits of the scheme. Agglomeration benefits arise when firms are located close to each other and close to larger markets for their labour and other inputs. In the case of the M20, these benefits relate to the impact of the scheme in bringing together the labour/skill pools in Cork and Limerick Cities, and within the wider M20 catchment, increasing the critical mass of skills available to employers. It should be noted that in addition to supporting north-south connectivity, a By-Pass for Mallow will also facilitate east-west traffic using the N71 and N73 routes, which will support the development of Kerry. This labour/skills impact would be in addition to the benefits of the M20 in relation to increased productivity for businesses due to lower travel times and associated costs, and in terms of enhanced regional competitiveness.

A key consideration in assessing the potential agglomeration benefits concerns the potential of the M20 to support the development of the catchment area of the route as a 'twin-city' zone. This inter-metropolitan zone would incorporate the combined population and labour/skills supply of the two cities, as well as the corridor and the wider hinterland of the M20.

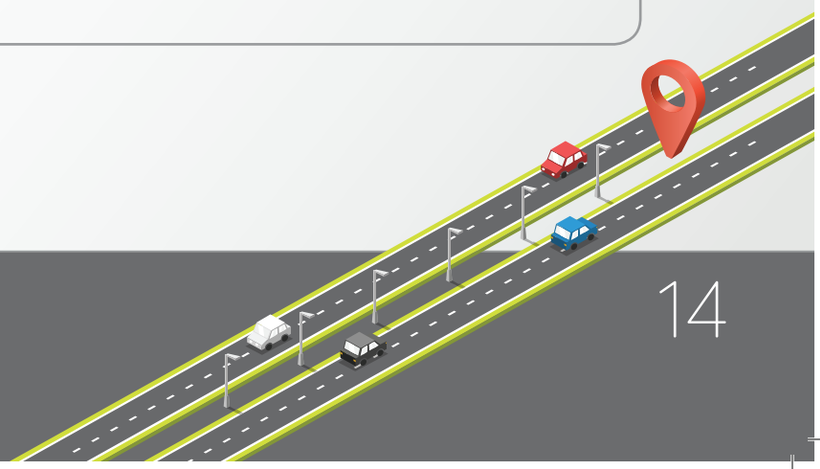
Indecon has assessed two alternative definitions for the combined labour/skills supply that could be supported within a 'twin-city' zone through completion of the M20, as follows:

- A wider definition, based on the accumulation of the labour forces which are resident in the Cork and Limerick City metropolitan areas, in addition to other locations in the wider M20 catchment; and
- A narrower definition, which is based on the accumulation of labour force residing within an indicative 45-minute drive-time of employment locations within the M20 catchment.

Labour Force Within Current Cork-Limerick 'Twin-City' Region, 2016

Catchment	Estimate 2016	
	Wider Definition	Narrower Definition Under M20 Scheme
Limerick and Cork Wide 'Twin-City' Labour Force	273,240	243,081

Source: Indecon analysis of CSO SAPS data



This shared labour market/skills pool will provide greater employment opportunities for residents, greater employee choice for firms located in both cities, and potential agglomeration and productivity benefits due to the improved accessibility and locality of businesses and labour.

By facilitating the development of Cork and Limerick as a 'twin-city', inter-metropolitan region the goal of achieving a more regionally-balanced Irish economy would also be progressed. The longer-term goal of the development of the Atlantic Corridor in both transportation and economic terms would also be supported.

Existing Skilled Labour Supply

The region's higher education and research institutions provide an important source of skills and will be critical in ensuring the labour demands of future investment are met. As can been seen in the table below, graduates of the region's Universities and Institutes of Technologies amounted to over 17,000 in 2014/15. Crucially, approximately 30% of these entrants were in areas of high-demand including the natural sciences; mathematics and statistics; engineering, manufacturing and construction; and Information & Communication Technologies. High levels of graduate output in these areas will help support continued growth in high-end industry clusters in both regions. For example, the Mid-West has seen significant growth in the life sciences and financial services sectors and ensuring an adequate supply of high-demand graduates is critical to maximising the growth potential of these industries. It should also be noted that 26% of total graduates were at postgraduate level. By facilitating the agglomeration of graduate supply in the Cork-Limerick region, the completion of the M20 scheme will boost the critical mass of available skilled labour to businesses in the region.

Graduate Output in Regional Academic Institutions* by Subject (Undergraduate & Postgraduate), 2014/15

Subject/Area	Universities	Institutes of Technology	Total
Business, administration and law	2,994	1,143	4,137
Health and welfare	2,168	706	2,874
Engineering, manufacturing and construction, Agriculture	741	1,476	2,217
Arts and humanities	1,447	649	2,096
Natural sciences, mathematics and statistics	1,083	407	1,490
Information and Communication Technologies (ICTs)	719	516	1,235
Education	1,016	93	1,109
Social sciences, journalism and information	988	83	1,071
Services	162	622	784
Total	**11,318**	**5,695**	**17,013**

Source: Higher Education Authority.
*Note: UCC, UL, LIT, CIT, IT Tralee are included in the above figures.

Facilitation of Development of Industrial Employment Locations

The transport/accessibility benefits from the completion of the M20 provide a further incentive to foreign and domestic investors in relation to facilitating the development of industrial sites along the catchment area of the scheme. The M20 would play an important role in this context through improving accessibility and marketability of industrial sites and land banks in the scheme corridor to investors. **The region boasts a wide sectoral eco-system including employment in the biopharma, engineering, ICT, life-sciences, energy, tourism, professional/financial services and agri-food sectors. The development of the M20 would improve labour market access to employers in these sectors as well as incentivise future investment in the region.**

In this context, it should be noted that the World Economic Forum recently ranked Ireland's road infrastructure in 32nd place, behind major FDI rivals in Europe. Addressing the deficiencies in relation to the existing N20 would therefore play a role in improving the competitiveness and attractiveness for foreign investment of regions outside Dublin. The wider region has a strong track record in attracting FDI, for example the South-West Region accounted for 29% of the total net FDI jobs gained over the period examined. Nevertheless, various industry stakeholders attending the regional workshop undertaken as part of this assessment considered the current road to not be fit for purpose, and expressed concerns over the negative connotations a prospective investor may infer from the lack of public investment in critical areas such as the transport network between Ireland's second and third largest urban centres.

As an illustration of the potential role which completion of the M20 could play in acting as a catalyst for investment and employment creation, Indecon has identified six potential land bank/development sites along the catchment area of the scheme, which are currently at various stages of development/utilisation. The future economic impacts, in terms of potential employment creation that could be supported by these sites, are subject to uncertainty. If investments were to emerge which utilise the sites, actual job creation potential would be dependent on the nature of the activity and the scale of the investment involved. Indecon has developed indicative estimates of potential employment generation that could be supported on the six industrial sites, based on alternative scenarios for employment density and the proportion of lands developed.

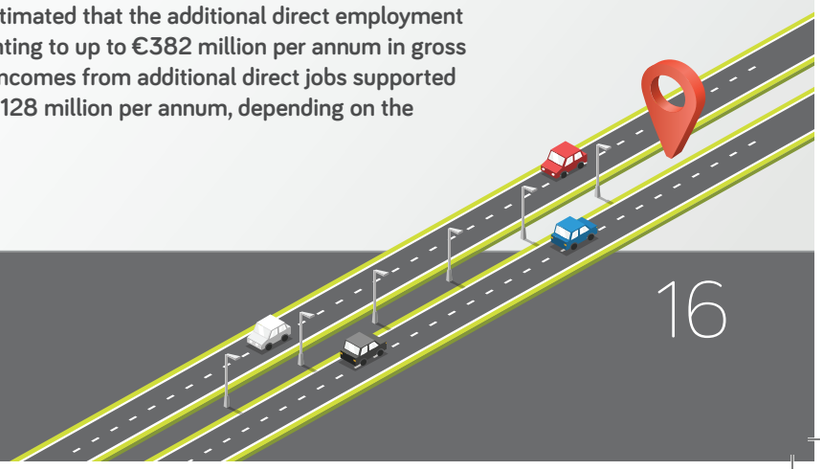
The table below outlines two scenarios for the development of these sites. The more conservative estimate assumes that 75% of the available (i.e. currently unused) land is developed. **These indicative estimates suggest a potential economy-wide employment impact over time of 8,251 direct and indirect jobs.** If these sites are fully developed, potential employment generation could be greater. If a higher proportion of the sites remains undeveloped, or if lower employment intensity projects emerge, this would reduce the estimates.

Indicative Scenarios for Potential Employment Creation in Industrial Sites on M20 Corridor

Estimated Potential Future Direct Employment:	Estimated No. of Additional Direct Potential Employees	Estimated Economy-wide Employment Impacts*
Scenario 1: Assuming 75% of available lands developed	4,047	8,251
Scenario 2: Assuming 100% of available lands developed	5,396	11,001

Source: Indecon modelling based on IDA Ireland data. *Economy-wide impacts based on Indecon Model of Irish Economy.
Sites include IDA Business and Technology Parks (Kilbarry, Mallow), IDA Business Parks (Charleville, Kanturk), Raheen Business Park, and the National Technology Park (Plassey).

Based on the scenarios above, **Indecon has indicatively estimated that the additional direct employment would support direct annual employment incomes amounting to up to €382 million per annum in gross terms if displacement impacts are excluded. The gross incomes from additional direct jobs supported could in turn provide a gross exchequer impact of up to €128 million per annum, depending on the nature of investment attracted.**



Facilitation of External Connectivity and Competitiveness

The development of the M20 scheme will provide greater accessibility for businesses to critical national assets within the region.

This would also be true for firms that are not directly located on the M20, for example the dairy industries in West Cork and Kerry would benefit in terms of improved access to export markets through the M20. **This improved access can also act as a further catalyst for promoting inward investment to the region, as well as ensuring that the region's current asset portfolio is being maximised in terms of value for money.** The major national assets that would be directly supported through completion of the M20 include:

> Shannon Airport > Cork Airport > Shannon Foynes Port > Port of Cork

Both Shannon and Cork Airports offer transatlantic and European connectivity. Both airports are also uncongested, and offer the potential to address the congestion issues in Dublin. In addition, Shannon Airport has been identified as a cargo hub for air freight under the Government's Aviation Policy.,[5,6] A high-quality motorway link connecting the wider South-West and Mid-West Regions to both Cork Airport and Shannon Airport will provide an opportunity to facilitate balanced growth and lessen Ireland's reliance on Dublin Airport to facilitate air travel.

Shannon Foynes Port and the Port of Cork are Ireland's second largest and third largest ports respectively by trade volume, and are Tier 1 ports of national significance under the Government's National Ports Policy. Both ports have also been granted TEN-T status from the European Union, which indicates that they are considered critical in supporting the functioning of the EU Internal Market and the development of an integrated, multimodal and sustainable European transport network. Access between the two ports is currently poor, especially around Shannon Foynes Port. Ensuring appropriate road connectivity to each port is a requirement to maintain their TEN-T status and access EU funding to support their development. The research conducted by RED C Research on behalf of Cork and Limerick Chambers also found that the ability of the M20 scheme to generate economic linkages between Cork, Limerick, and the hinterlands was considered to be important by 99% of businesses responding to the research, while 97% of respondents considered that completion of the M20 would be important in relation to supporting investment and job creation (see figure below).

Importance of Following Benefits of M20 Scheme to Regional Stakeholders

Percentage of responents who considered issues 'very' or 'fairly important

Source: RED C Research & Marketing - Survey of Multinational and Indigenous Business Members of Cork and Limerick Chambers

5 A National Aviation Policy for Ireland – Department of Transport, Tourism and Sport, August 2015.
6 Approximately 16% of all Irish air cargo is handled at Shannon Airport.

Tourism Sector Benefits

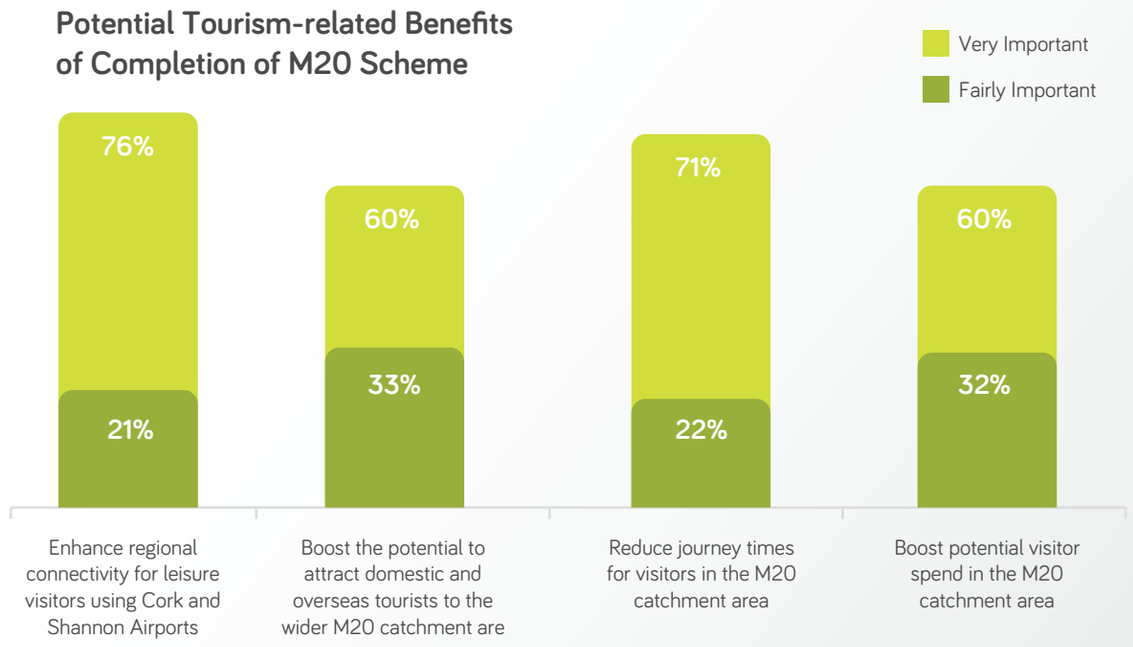
The South-West and Mid-West regions are among Ireland's key destinations for tourism.

Strategic tourism attractions in the wider M20 catchment include the Ring of Kerry, the Wild Atlantic Way, and Blarney Castle and King Johns Castle. Overseas tourists spent approximately €1.2 billion in the South-West and Shannon[7] regions in 2015. This represents a 48% increase over 2012 levels.

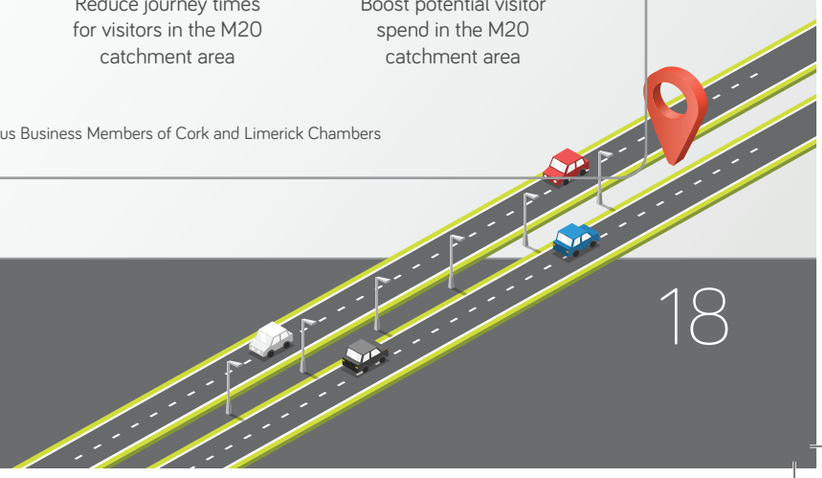
By providing a reliable route between Cork and Limerick, and widening the catchment areas of Cork and Shannon Airports, completion of the M20 would expand the potential area of travel for overseas and domestic visitors and would improve the accessibility of visitor attractions. Both Shannon Airport and Cork Airports offer transatlantic and European connectivity. Both airports have excess capacity, and offer the potential to address the congestion issues in Dublin. In addition, Shannon Airport has been identified as a cargo hub for air freight under the Government's Aviation Policy.,[8,9] A high-quality motorway link connecting the wider South-West and Mid-West Regions to both Cork Airport and Shannon Airport will provide an opportunity to facilitate balanced growth and lessen Ireland's reliance on Dublin Airport to facilitate air travel. Venues such as Thomond Park (home of Munster Rugby) and Páirc Uí Chaoimh (home of Cork GAA) can also attract considerable numbers of domestic tourists. While the determinants of tourism flows include key factors such as the product attractiveness and cost competitiveness, access infrastructure can play a supportive role. The development of the M20 would also promote the 'twin-city' concept in terms of tourism as well as the economic benefits previously outlined.

The research among Chamber members conducted by RED C Research also sought the views of businesses as to the impact of the M20 scheme in relation to tourism benefits. The findings are highlighted in the figure below and indicate that 97% of respondents considered that completion of the M20 scheme would be important in enhancing regional connectivity for visitors using Shannon and Cork Airports. The research also found that a substantial majority of businesses were of the view that completion of the M20 would boost the potential to attract visitors to the wider M20 catchment area, reduce journey times for visitors, and boost potential visitor spend in the region.

Potential Tourism-related Benefits of Completion of M20 Scheme



Source: RED C Research & Marketing - Survey of Multinational and Indigenous Business Members of Cork and Limerick Chambers



Community and Social Benefits

In addition to the wider economic benefits examined above, completion of the M20 scheme would also provide a number of important wider community and social benefits.

These benefits have been highlighted in the research conducted by RED C Research on behalf of the Chambers' among the business community in the catchment area of the scheme.

It is notable in particular that a large majority of multinational and indigenous businesses responding to the RED C Research indicated their view that completion of the M20 scheme would deliver significant community and social benefits in terms of enhancing social interactions through population accessibility/connectivity impacts; reducing stress of regional journeys for motorists; improving work-life balance and quality of life among commuters in M20 catchment area; and making employment opportunities in nearby towns and metropolitan areas more attractive by reducing commute times (see table below).

Views of Businesses on Social & Community Benefits from Completion of M20 Scheme

Community Benefits	Very important	Fairly important	Not important
Enhance social interactions through population accessibility/connectivity impacts	53%	33%	12%
Reduce stress of regional journeys for motorists	71%	25%	4%
Improve work-life balance and quality of life among commuters in M20 catchment area	77%	20%	2%
Make employment opportunities in nearby towns and metropolitan areas more attractive by reducing commute times	79%	20%	2%

Source: RED C Research & Marketing - Survey of Multinational and Indigenous Business Members of Cork and Limerick Chambers

The safety benefits that would arise from the M20 represent one aspect of the impacts on road users. Journey time reductions will also offer critical safety benefits in terms of ambulance/emergency response times within the M20 catchment. The completion of the M20 would offer additional safety benefits through the provision of a high-speed transport corridor between major medical/trauma centres in Cork, Limerick, and the wider region. In this context, the Department of Health and Children is progressing a National Trauma Policy to inform best practise for a Trauma Network configuration for Ireland and to ensure the public have access in a timely manner to acute care following a trauma. It is vital that a fast and reliable road network is available between Limerick and Cork to ensure this objective is met.

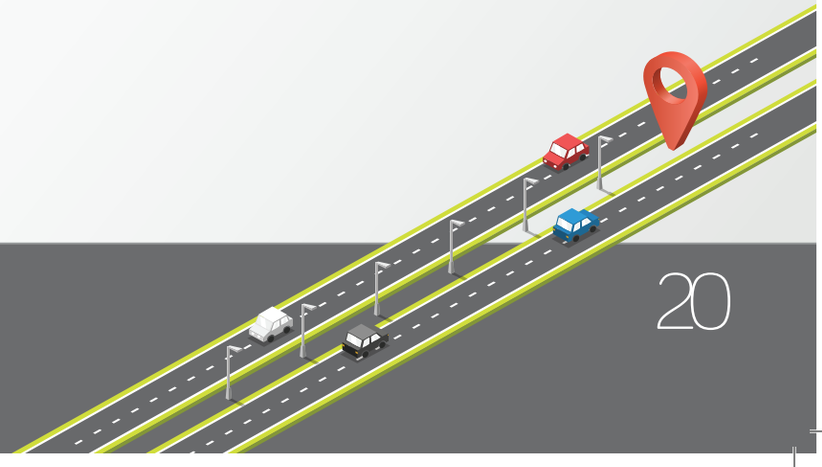
7 Fáilte Ireland define 'Shannon' as Clare, Limerick, Tipperary (North), and Offaly (West). All of the Mid-West Region is included in this definition with the exception of Offaly (West).
8 A National Aviation Policy for Ireland – Department of Transport, Tourism and Sport, August 2015.
9 Approximately 16% of all Irish air cargo is handled at Shannon Airport.

Overall Conclusions

Indecon's detailed assessment in this study re-affirms the economic rationale for supporting investment into completing the M20 Cork to Limerick motorway scheme as an infrastructure project of strategic national as well as regional importance.

The need to prioritise the scheme is intensified, given the fact that the existing N20 is operating above capacity, while poor journey times and high accident rates are being further exacerbated as the economy continues to recover. Benefits of the M20 scheme would also underpin the competitiveness of the South-West and Mid-West Regions through enhancing internal and external connectivity. The scheme would also bring significant community and social benefits.

Also of particular importance in the context of Government policy, including the forthcoming National Planning Framework, concerns how completion of the M20 scheme would address a number of objectives, not least the imperative of achieving more balanced regional development, through facilitating the attainment of a critical mass of population and skills in a Cork-Limerick 'twin-city' inter-metropolitan region. The scheme would also have the potential to enhance the attractiveness of the wider South-West Region (including Kerry) and to support the development of the Atlantic Corridor, providing counterbalance to the existing dominance of the Dublin Region.



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