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N/M20 Cork to Limerick
Road Improvement Scheme

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Phase 1 - Multi Criteria Analysis

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Table of Contents

Table of Figures

Table of Tables

SECTION 1: PHASE 1 MULTI CRITERIA ANALYSIS

1.1 Background to Multi Criteria Analysis

Multi Criteria Analysis (MCA) is a technique identified in the Department of Transport, Tourism and Sport (DTTaS) Common Appraisal Framework (CAF) as being required in establishing preferences between scenarios by reference to an explicit set of objectives. It is particularly suited to larger transport projects where there are a range of potential benefactors and where those benefits can be both quantitative and qualitative. In the MCA process, project objectives are determined at an initial stage in advance of identifying alternative solutions. The analysis is then based on appraising the performance of various scenarios against the objectives so that overall best performing scenarios can be determined.

1.2 Project Objectives

For the N/M20 Cork to Limerick Improvement Scheme the project objectives were established following a review of the problems and opportunities on the transport networks linking Cork and Limerick as well as specific policies and plans for the region. The project objectives were established based around the Common Appraisal Framework criteria, these being:

- Economy
- Safety
- Environment
- Accessibility & Social Inclusion
- Integration
- Physical Activity

The 17 objectives are shown in framework tables on pages 6 – 9 of this report and have been adopted by the project's key stakeholders, Limerick City and County Council, Cork County Council, Cork City Council, Tipperary County Council and Transport Infrastructure Ireland. These objectives were then consulted on with the Department of Transport, Tourism and Sport.

1.3 Scenarios Identified

The work to date has focused on identifying and appraising various road-based scenarios and rail-based scenarios for improving transport connections between Cork and Limerick. The rail-based scenarios involving improved service frequency with either through services at Limerick Junction or alternatively provision of a new direct line between Charleville and Limerick have been identified. The concepts for each road-based and rail-based scenario can be seen in Figures 1-9.

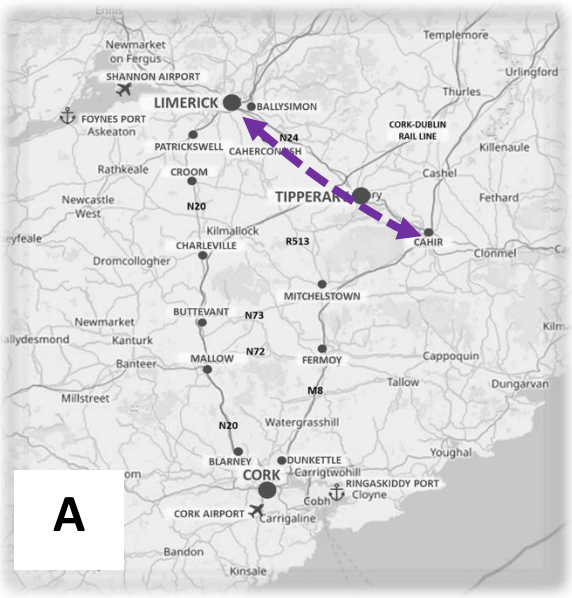

Figure 1: Road-Based Scenario A (new route in N24 corridor from Cahir to Ballysimon)

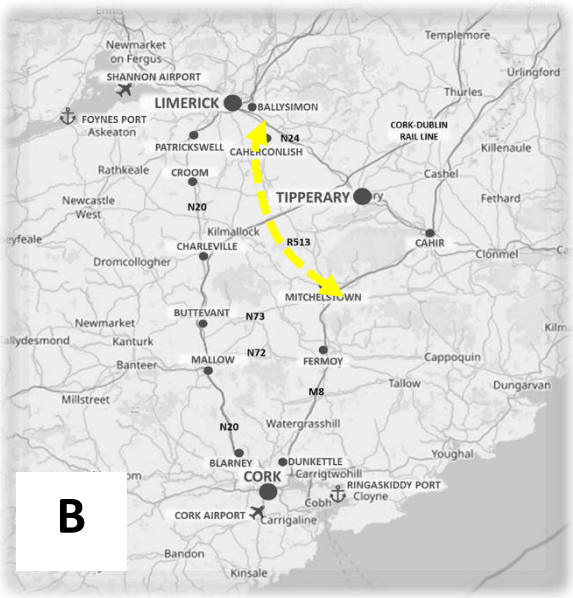

Figure 2: Road-Based Scenario B (new route in R513 corridor from M8 at Mitchelstown to Ballysimon)

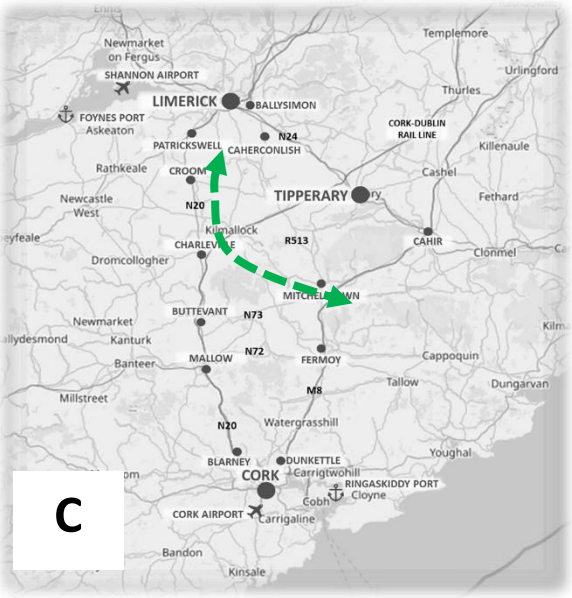

Figure 3: Road-Based Scenario C (new route in R512 and N20 corridors from M8 at Mitchelstown to Patrickswell)

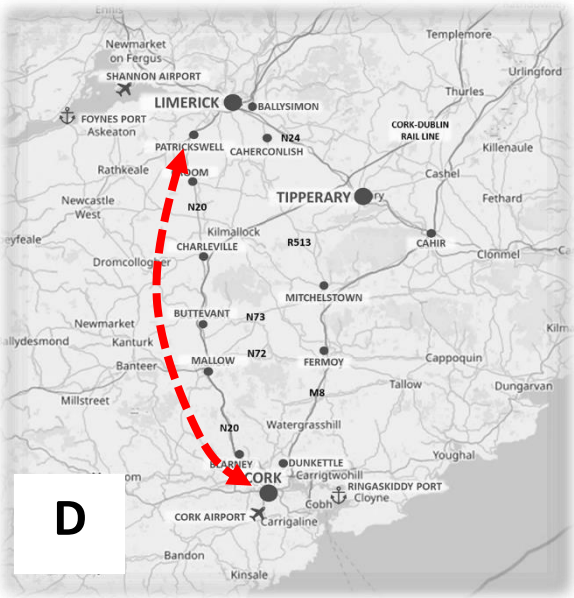

Figure 4: Road-Based Scenario D (new route in N20 corridor from Blarney to Patrickswell)

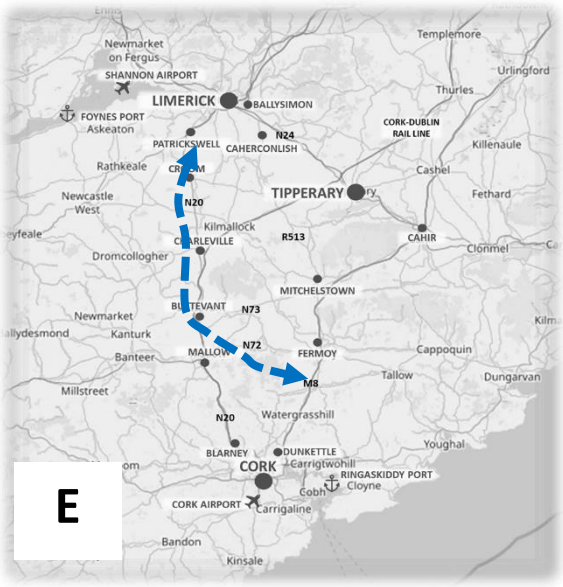

Figure 5: Road-Based Scenario E (new route in N72 and N20 corridors from Fermoy to Patrickswell)

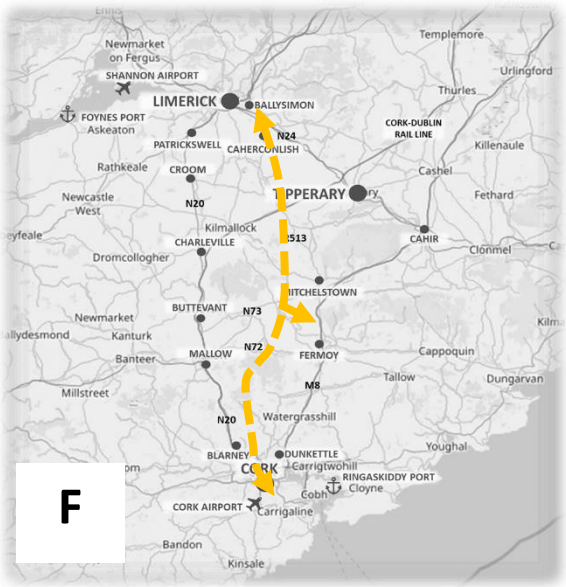

Figure 6: Road-Based Scenario F (new route in N20, R513 and N24 corridors from Blarney to Ballysimon with spur to M8 at Mitchelstown)

Figure 7: Road-Based Scenario G (new route in R513 and N24 corridors from Mitchelstown to Ballysimon)

Figure 8: Rail-Based Scenario 1 (Existing Cork to Limerick Rail Line)

Figure 9: Rail-Based Scenario 2 (New Rail Line Charleville to Limerick)

1.4 Road-Based Scenarios Multi Criteria Analysis

The road-based scenarios have been subject to appraisal using appropriate forecasts together with outputs from the National Transport Model. In addition, qualitative assessments have been undertaken for certain objectives based on the professional judgement of specialists. The road-based scenarios are concepts defined by the connecting points at either end. All appraisal outcomes and overall findings have been subject to challenge and adoption by the key stakeholders. Explanations of the objectives appraisals which appear in the MCA Framework at the end of this technical note are given in Tables 1 to 6 below.

Table 1: Economy Objectives

Objective	Appraisal Method
1.1 To accord with the National Planning Framework objective of enhancing regional road connectivity between Cork and Limerick to achieve average journey speeds of 90 km/h and a competitive inter-urban journey time	Appraisal considers predicted journey times for car-based journeys between the two city centres (Kent Rail Station in Cork and Colbert Rail Station in Limerick). Reported times are an average between the two directions. The 2040 base case journey time (which uses the existing N20) is 99 minutes. For all road-based scenarios the 90km/h average inter-urban speed was achieved.
1.2 To improve journey time reliability for road users travelling between Cork and Limerick	For all road-based scenarios journey time reliability significantly improved by the provision of a 2-lane motorway.
1.3 To provide opportunities to grow the regional economy and improve economic interaction by creating better transport linkage between Cork and Limerick and in the overall Atlantic Economic Corridor	Economic specialists have advised on the scale of opportunity to grow regional economies taking into account NPF growth forecasts for Cork and Limerick as well as connectivity to other key towns. The Atlantic Economic Corridor is defined as a corridor between Kerry / West Cork and Donegal encompassing all major settlements including Limerick, Galway and Sligo.
1.4 To facilitate population growth within Cork and Limerick as envisaged in the National Planning Framework	Economic specialists have advised on the potential of scenarios to facilitate population growth taking into account the NPF growth targets for Cork and Limerick, and the key town status of Mallow identified in the Regional Spatial and Economic Strategy (RSES) for the Southern Region.

Table 2: Safety Objectives

Objective	Appraisal Method
2.1 To address road safety issues by reducing the rate and severity of collisions on the road network, including those associated with the existing N20 route, by provision of an appropriate road standard	The level of traffic reduction predicted for the existing N20 has been used to appraise the potential to significantly reduce rate and severity of collisions on the route. Total collisions saved over the 30 year period following implementation has been determined for the regional network by modelling using COBALT software.
2.2 To support the RSA Road Safety Strategy through the provision of a safe, forgiving and consistent standard of improved route	All road-based scenarios could be developed with modern design standards and therefore would achieve this objective.
2.3 To support the provision of a service area for rest breaks between Cork and Limerick	Reviewed against TII Motorway Service Area policy

Table 3: Environment Objectives

Objective	Appraisal Method
3.1 To improve the environment in the context of noise and air quality in settlements along the corridor through the reduction of through traffic	Appraisal considers reduction in daily traffic flows in five key settlements in the Phase 1 study area (population circa >1,000) currently affected by through traffic.
3.2 To ensure consideration of sustainable development principles and measures to minimise effects on the environment	Appraisal based on considering scale of potential works, for road-based scenarios using the assumed length of new build.
3.3 To ensure the scheme will have no adverse impact on integrity of European site conservation objectives	All scenarios have the potential to accord with this objective. An Appropriate Assessment, in the context of the Habitats Directive will be completed once a preferred option is identified.

Table 4: Accessibility & Social Inclusion Objectives

Objective	Appraisal Method
4.1 To improve access for road users, in particular non-motorised users and those in deprived areas to key facilities such as employment, education and healthcare	Appraisal considers journey time savings from identified deprived areas as defined in the 2016 Pobal HP Deprivation Index: – Mallow; Charleville; Tipperary; Patrickswell and Bruff to key services such as major employment centres (Crescent Shopping Centre – Limerick, Blackpool Shopping Centre & Mahon Point Shopping Centre– Cork), educational facilities (University of Limerick, University College Cork) and hospitals (University Hospital Limerick; Mercy University Hospital – Cork). Modelled journey time savings are for the "car" user class travelling in the morning peak period in 2040.
4.2 To facilitate opportunities to improve journey times and reliability for public transport journeys	Appraisal based on considering improvement in existing bus service journey times between major destinations. Also taken into account is predicted bus journey times for any future express inter-city services.

Table 5: Integration Objectives

Objective	Appraisal Method
5.1 To support sustainable development through the provision of appropriate access and adherence to the principles of compact urban growth	All road-based scenarios have the potential to support sustainable development and planning policy using an appropriate junction strategy. Appropriate spatial planning policy can support compact urban growth minimizing the potential risk associated with new road links into urban areas.
5.2 To provide high quality connectivity with airports and ports in the region	Appraisal for airports based on considering increased population within a 60 minute catchment for both Cork and Shannon airports. Population information is based on Census 2016 data. For ports the appraisal identifies improvements in connections to key terminals in the region.
5.3 To facilitate connectivity with public transport interchanges	The appraisal identifies improved connectivity to both existing and planned public transport interchanges adjacent to the scenario.

Table 6: Physical Activity Objectives

Objective	Appraisal Method
6.1 To enable local opportunities for walking and cycling activity in communities with reduced traffic levels from the scheme	Appraisal considers reduction in daily traffic flows in five key settlements in the Phase 1 study area (population circa >1,000) currently affected by through traffic. The reduction in traffic creates an opportunity to promote walking and cycling activity.
6.2 To facilitate the improvement of town and village urban realm	The appraisal recognising the opportunities to improve town and village urban realm. All road-based scenarios can be developed to accord with this objective.

1.5 Multi Criteria Analysis (MCA) Framework for Road-Based Scenarios

The MCA framework is shown overleaf detailing the appraisal results for the road-based scenarios as set out in the methodology above. The framework has been challenged and adopted at stakeholder workshops during which the best-performing road-based scenario was identified for each objective, as shown in green shading.

Objective	Scenario A (new route in N24 corridor from Cahir to Ballysimon)	Scenario B (new route in R513 corridor from M8 at Mitchelstown to Ballysimon)	Scenario C (new route in R512 and N20 corridors from M8 at Mitchelstown to Patrickswell)	Scenario D (new route in N20 corridor from Blarney to Patrickswell)	Scenario E (new route in N72 and N20 corridors from Fermoy to Patrickswell)	Scenario F (new route in N20, R513 and N24 corridors from Blarney to Ballysimon with spur to M8 at Mitchelstown)	Scenario G (new route in R513 and N24 corridors from Mitchelstown to Ballysimon)
1. Economy							
1.1 To accord with the National Planning Framework objective of enhancing regional road connectivity **between Cork and Limerick** to achieve average journey speeds of 90 km/h and **a competitive inter-urban journey time**	City centre to city centre journey time is 88 minutes at an average interurban speed of >90 kph	City centre to city centre journey time is 71 minutes at an average interurban speed of >90 kph	City centre to city centre journey time is 75 minutes at an average interurban speed of >90 kph	City centre to city centre journey time is 64 minutes at an average interurban speed of >90 kph	City centre to city centre journey time is 78 minutes at an average interurban speed of >90 kph	City centre to city centre journey time is 68 minutes at an average interurban speed of >90 kph	City centre to city centre journey time is 73 minutes at an average interurban speed of >90 kph
1.2 To improve **journey time reliability** for road users travelling between Cork and Limerick	For all scenarios reliability is significantly improved by provision of a 2-lane motorway between cities						
1.3 To provide opportunities to **grow the regional economy and improve economic interaction** by creating better transport linkage between Cork and Limerick and in the overall Atlantic Economic Corridor	This Scenario provides a low level of improved connectivity between Cork and Limerick but does not improve connections between Charleville-Limerick or Mallow-Cork.	This Scenario provides improved connectivity between Cork and Limerick and Mitchelstown - Limerick but does not improve connections between Charleville-Limerick or Mallow-Cork.	This Scenario provides improved connectivity between Cork and Limerick; improves connections between Mitchelstown-Limerick; provides some improvement between Mallow-Charleville-Limerick, but not between Charleville-Mallow-Cork.	This Scenario provides a step change in connectivity between Cork and Limerick as well as linking with satellite communities such as Charleville and Mallow. Provides opportunity to grow the Atlantic Economic Corridor, by improving connectivity to the West Cork/Kerry area.	This Scenario provides improved connectivity between Cork and Limerick but provides limited improvement between Mallow-Cork. Improves connectivity between Mallow/Charleville/Fermoy and Limerick. Provides opportunity to grow the Atlantic Economic Corridor, by improving connectivity to the West Cork/Kerry area.	This Scenario provides a step change in connectivity between Cork and Limerick, as well as between Mallow and Mitchelstown to both cities, but provides limited improvement between Charleville-Limerick. Provides opportunity to grow the Atlantic Economic Corridor, by improving connectivity to the west Cork/Kerry area.	Connectivity to NPF settlements targeted for growth – Cork and Limerick. Does not improve connections between Charleville/Cahir-Limerick or Mallow-Cork.
1.4 To **facilitate population growth within Cork and Limerick** as envisaged in the National Planning Framework	Connects intermediate town of Tipperary by motorway with Cork and Limerick, as well as linking Waterford, Cahir, Mitchelstown and Fermoy to Limerick.	Connects intermediate town of Mitchelstown and Fermoy by motorway to Limerick.	Connects intermediate town of Charleville, Mitchelstown and Fermoy by motorway to Limerick.	Connects intermediate towns of Charleville, Mallow and Blarney by motorway with Cork and Limerick. Mallow identified as key town in RSES for Southern Region	Connects intermediate towns of Fermoy and Mallow (current population 12,500 with target population 20,000 by 2040) by motorway with Limerick.	Connects intermediate towns of Mitchelstown, Mallow and Blarney by motorway with Cork and Limerick. Mallow identified as key town in RSES for Southern Region	Connects intermediate town of Mitchelstown and Fermoy by motorway to Limerick.
2. Safety							
2.1 To address road safety issues by **reducing the rate and severity of collisions on the road network, including those associated with the existing N20 route**, by provision of an appropriate road standard	No significant reduction in traffic volumes on N20 route therefore no significant change in relation to road safety issues on N20 route Total collisions saved across the network of 440 over 30 year period	Some reduction in traffic volumes on N20 route therefore some improvement in road safety issues on N20 route Total collisions saved across the network of 580 over 30 year period	Traffic volume reductions on part of N20 to the north of Charleville but no significant reduction to traffic volumes on N20 south therefore limited change in relation to road safety issues on N20 route Total collisions saved across the network of 640 over 30 year period	Major reduction in traffic levels on existing N20 route therefore potential for collisions and their severity significantly reduced Total collisions saved across the network of 980 over 30 year period	Traffic volume reductions on part of N20 to the north of Mallow but no significant reduction to traffic volumes on N20 south therefore some change in relation to road safety issues on N20 route Total collisions saved across the network of 610 over 30 year period	A significant reduction in traffic volumes on N20 route therefore significant change in relation to road safety issues on N20 route Total collisions saved across the network of 900 over 30 year period	No significant reduction in traffic volumes on N20 route therefore no significant change in relation to road safety issues on N20 route Total collisions saved across the network of 570 over 30 year period
2.2 To support the RSA Road Safety Strategy through **the provision of a safe, forgiving and consistent standard** of improved route	All scenarios could be developed with modern design standards and therefore would achieve this objective						
2.3 To support **the provision of a service area** for rest breaks between Cork and Limerick	All scenarios have the potential to accord with this objective						
3. Environment							
3.1 To improve the environment in the context of noise and air quality in settlements along the corridor through the **reduction of through traffic**	Traffic reduction due to scenario: Mallow from 18,600 to 18,400 (-200) Buttevant from 16,500 to 16,200 (-300) Charleville from 13,400 to 13,200 (-200) Tipperary from 11,400 to 6,400 (-5,000) Caherconlish from 6,200 to 6,100 (-100)	Traffic reduction due to scenario Mallow from 18,600 to 13,700 (-4,900) Buttevant from 16,500 to 11,300 (-5,200) Charleville from 13,400 to 8,200 (-5,200) Tipperary from 11,400 to 11,100 (-300) Caherconlish from 6,200 to 2,300 (-3,900)	Traffic reduction due to scenario: Mallow from 18,600 to 14,600 (-4,000) Buttevant from 16,500 to 12,400 (-4,100) Charleville from 13,400 to 10,900 (-2,500) Tipperary from 11,400 to 11,200 (-200) Caherconlish from 6,200 to 5,300 (-900)	Traffic reduction due to scenario: Mallow from 18,600 to 9,900 (-8,700) Buttevant from 16,500 to 5,600 (-10,900) Charleville from 13,400 to 5,000 (-8,400) Tipperary from 11,400 to 11,300 (-100) Caherconlish from 6,200 to 5,600 (-600)	Traffic reduction due to scenario: Mallow from 18,600 to 17,600 (-1,000) Buttevant from 16,500 to 15,400 (-1,100) Charleville from 13,400 to 5,000 (-8,400) Tipperary from 11,400 to 11,300 (-100) Caherconlish from 6,200 to 5,700 (-500)	Traffic reductions due to scenario: Mallow from 18,600 to 12,300 (-6,300) Buttevant from 16,500 to 10,400 (-6,100) Charleville from 13,400 to 6,500 (-6,900) Tipperary from 11,400 to 11,200 (-200) Caherconlish from 6,200 to 2,300 (-3,900)	Traffic reductions due to scenario: Mallow from 18,600 to 14,200 (-4,400) Buttevant from 16,500 to 11,900 (-4,600) Charleville from 13,400 to 8,400 (-5,000) Tipperary from 11,400 to 11,300 (-100) Caherconlish from 6,200 to 4,500 (-1,700)
3.2 To ensure consideration of **sustainable development principles** and measures to minimise effects on the environment	Length of new build is 54km	Length of new build is 53km	Length of new build is 57km	Length of new build is 80km	Length of new build is 73km	Length of new build is 92km + 13km (105km)	Length of new build is 58km
3.3 To ensure the scheme will have no adverse impact on integrity of **European site conservation objectives**	All scenarios have the potential to accord with this objective						

Objective	Scenario A (new route in N24 corridor from Cahir to Ballysimon)	Scenario B (new route in R513 corridor from M8 at Mitchelstown to Ballysimon)	Scenario C (new route in R512 and N20 corridors from M8 at Mitchelstown to Patrickswell)	Scenario D (new route in N20 corridor from Blarney to Patrickswell)	Scenario E (new route in N72 and N20 corridors from Fermoy to Patrickswell)	Scenario F (new route in N20, R513 and N24 corridors from Blarney to Ballysimon with spur to M8 at Mitchelstown)	Scenario G (new route in R513 and N24 corridors from Mitchelstown to Ballysimon)
4. Accessibility & Social Inclusion							
4.1 To improve access for road users, in particular NMUs and those in **deprived areas** to key facilities such as employment, education and healthcare	Improved Journey times from deprived areas to key facilities in Limerick and Cork: Tipperary, approx. 10min Charleville, approx. 5min	Improved Journey times from deprived areas to key facilities in Limerick and Cork: Mallow, approx. 5min Bruff, approx. 10min	Improved Journey times from deprived areas to key facilities in Limerick and Cork: Bruff, approx. 10min Charleville, approx. 5min	Improved Journey times from deprived areas to key facilities in Limerick and Cork: Mallow, approx.15min Bruff, approx. 15 min Charleville, approx. 15min	Improved Journey times from deprived areas to key facilities in Limerick and Cork: Mallow, approx. 5min Charleville, approx. 5min	Improved Journey times from deprived areas to key facilities in Limerick and Cork: Mallow, approx. 10min Bruff, approx. 15min	Improved Journey times from deprived areas to key facilities in Limerick and Cork: Bruff, approx. 10min
4.2 To facilitate opportunities to improve journey times and reliability for **public transport** journeys	Reliability significantly improved. Journey times (with new scenario): Existing N20 services 100 min Future express service 99 min also Tipperary – Limerick: Existing to 37 min Future Express services 35 min	Reliability significantly improved. Journey times (with new scenario): Existing N20 services 96 min Future express service 79 min also Tipperary – Limerick: Existing to 39 min	Reliability significantly improved. Journey times (with new scenario): Existing N20 services 97 min Future express services 84 min also Tipperary – Limerick: Existing to 39 min	Reliability significantly improved. Journey times (with new scenario): Existing N20 services 89 min Future express services 76 min also Tipperary – Limerick: Existing to 39 min	Reliability significantly improved. Journey times (with new scenario): Existing N20 services 96 min Future express services 90 min also Tipperary – Limerick: Existing to 39 min	Reliability significantly improved. Journey times (with new scenario): Existing N20 services 92 min Future express services 81 min also Tipperary – Limerick: Existing to 39 min	Reliability significantly improved. Journey times (with new scenario): Existing N20 services 97 min Future express services 82 min also Tipperary – Limerick: Existing to 38 min
5.Integration							
5.1 To support **sustainable development** through the provision of appropriate access and adherence to the principles of **compact urban growth**	All scenarios have the potential to support sustainable development and planning policy using an appropriate junction strategy. Appropriate spatial planning policy can support compact urban growth minimising the potential risk associated with new road links into urban centres.						
5.2 To provide high quality connectivity with **airports and ports** in the region	The 60 minute drive population catchment for Shannon and Cork airports increase from 760,000 to 800,000 Scenario A will provide better connectivity to the Ringaskiddy Container Terminal avoiding the urban centre of Cork. Scenario A improves connectivity for Rosslare and Waterford, however it should be noted that Waterford port primarily deals with agricultural products with minimal traffic to	The 60 minute drive population catchment for Shannon and Cork airports increase from 760,000 to 830,000. Scenario B will provide better connectivity to the Ringaskiddy Container Terminal avoiding the urban centre of Cork.	The 60 minute drive population catchment for Shannon and Cork airports increase from 760,000 to 830,000. Scenario C will provide better connectivity to Foynes and Ringaskiddy Container Terminal avoiding the urban centre of Cork.	The 60 minute drive population catchment for Shannon and Cork airports increase from 760,000 to 960,000 Scenario D will improve the connectivity to both Cork and Shannon Foynes ports. This will be particularly valuable for the transport of containerised goods from Port of Cork, which should reduce costs for businesses in Limerick.	The 60 minute drive population catchment for Shannon and Cork airports increase from 760,000 to 930,000. Scenario E will provide better connectivity to Foynes and Ringaskiddy Container Terminal avoiding the urban centre of Cork.	The 60 minute drive population catchment for Shannon and Cork airports increase from 760,000 to 840,000. Scenario F will provide better connectivity to the Ringaskiddy Container Terminal avoiding the urban centre of Cork.	The 60 minute drive population catchment for Shannon and Cork airports increase from 760,000 to 770,000. Scenario G will provide better connectivity to the Ringaskiddy Container Terminal avoiding the urban centre of Cork.
5.3 To facilitate connectivity with **public transport interchanges**	Interchanges adjacent to scenario: Limerick Junction Station (Future Dunkettle P&R)	Interchanges adjacent to scenario (Future Dunkettle P&R)	Interchanges adjacent to scenario: Charleville Rail Station (Future Dunkettle P&R)	Interchanges adjacent to scenario: Mallow bus and rail stations Charleville Rail Station (Future Blarney P&R)	Interchanges adjacent to Scenario: Charleville Rail Station (Future Dunkettle P&R)	Interchanges adjacent to Scenario: Mallow bus and rail stations (Future Blarney P&R)	Interchanges adjacent to Scenario: Limerick Junction (Future Dunkettle P&R)
6.Physical Activity							
6.1 To enable local opportunities for **walking and cycling activity** in communities with reduced traffic levels from the scheme	Traffic reduction due to scenario: Mallow from 18,600 to 18,400 (-200) Buttevant from 16,500 to 16,200 (-300) Charleville from 13,400 to 13,200 (-200) Tipperary from 11,400 to 6,400 (-5,000) Caherconlish from 6,200 to 6,100 (-100)	Traffic reduction due to scenario Mallow from 18,600 to 13,700 (-4,900) Buttevant from 16,500 to 11,300 (-5,200) Charleville from 13,400 to 8,200 (-5,200) Tipperary from 11,400 to 11,100 (-300) Caherconlish from 6,200 to 2,300 (-3,900)	Traffic reduction due to scenario: Mallow from 18,600 to 14,600 (-4,000) Buttevant from 16,500 to 12,400 (-4,100) Charleville from 13,400 to 10,900 (-2,500) Tipperary from 11,400 to 11,200 (-200) Caherconlish from 6,200 to 5,300 (-900)	Traffic reduction due to scenario: Mallow from 18,600 to 9,900 (-8,700) Buttevant from 16,500 to 5,600 (-10,900) Charleville from 13,400 to 5,000 (-8,400) Tipperary from 11,400 to 11,300 (-100) Caherconlish from 6,200 to 5,600 (-600)	Traffic reduction due to scenario: Mallow from 18,600 to 17,600 (-1,000) Buttevant from 16,500 to 15,400 (-1,100) Charleville from 13,400 to 5,000 (-8,400) Tipperary from 11,400 to 11,300 (-100) Caherconlish from 6,200 to 5,700 (-500)	Traffic reductions due to scenario: Mallow from 18,600 to 12,300 (-6,300) Buttevant from 16,500 to 10,400 (-6,100) Charleville from 13,400 to 6,500 (-6,900) Tipperary from 11,400 to 11,200 (-200) Caherconlish from 6,200 to 2,300 (-3,900)	Traffic reductions due to scenario: Mallow from 18,600 to 14,200 (-4,400) Buttevant from 16,500 to 11,900 (-4,600) Charleville from 13,400 to 8,400 (-5,000) Tipperary from 11,400 to 11,300 (-100) Caherconlish from 6,200 to 4,500 (-1,700)
6.2 To facilitate the improvement of town and village **urban realm**	All scenarios can be developed to accord with this objective						

1.6 Conclusion

The table below summarises the key findings in relation to the 6 criteria by highlighting the best performing scenario, as shown in green shading.

Criteria	Scenario A (new route in N24 corridor from Cahir to Ballysimon)	Scenario B (new route in R513 corridor from M8 at Mitchelstown to Ballysimon)	Scenario C (new route in R512 and N20 corridors from M8 at Mitchelstown to Patrickswell)	Scenario D (new route in N20 corridor from Blarney to Patrickswell)	Scenario E (new route in N72 and N20 corridors from Fermoy to Patrickswell)	Scenario F (new route in N20, R513 and N24 corridors from Blarney to Ballysimon with spur to M8 at Mitchelstown)	Scenario G (new route in R513 and N24 corridors from Mitchelstown to Ballysimon)
1. Economy							
2. Safety							
3. Environment							
4. Accessibility & Social Inclusion							
5. Integration							
6. Physical Activity							

The MCA framework demonstrates that the best performing road-based scenario is ***Scenario D*** when appraised against the 17 project objectives and 6 CAF criteria.

The preferred road-based scenario and the two rail-based scenarios will be carried forward to Phase 2 Option Selection.