

Wicklow County Council

**N11/M11 Junction 4 to Junction 14
Improvement Scheme**

Appendix D14 – Integration

265455-ARP-HGN-SWI-RP-CH-0003

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This report takes into account the particular instructions and requirements of our client.

It is not intended for and should not be relied upon by any third party and no responsibility is undertaken to any third party.

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1 Introduction

This report documents the Stage 2 Project Appraisal Matrix assessment of options under the criterion of Integration.

The integration assessment is undertaken in accordance with TII Project Appraisal Guidelines (PAG) Unit 7: Multi-Criteria Analysis, and focuses on the following key areas:

- Transport Integration;
- Land Use Integration;
- Geographical Integration; and
- Other Government Policy Integration.

The integration appraisal seeks to analyse the degree to which scheme options align with other aspects of Government policy and investment priorities, at local, regional, national and EU level.

The assessment of each option includes both a qualitative and quantitative rating based on the seven-point scale below adopted from TII PAG.

- 7 – Major or highly positive;
- 6 – Moderately positive;
- 5 – Minor or slightly positive;
- 4 – Not significant or neutral;
- 3 – Minor or slightly negative;
- 2 – Moderately negative; or
- 1 – Major or highly negative

Using the impacts scores and professional judgement, a determination has been made as to whether each option is considered ‘Preferred’, ‘Intermediate’ or ‘Least Preferred’.

2 Transport Integration

This element of the assessment focuses on how proposed transport infrastructure and services may address gaps in the existing network and facilitate opportunities for improved interchange between different transport modes. The transport integration appraisal is undertaken in consideration of four sub-criteria, namely:

- Connectivity of the strategic road network;
- Connectivity between transport modes;
- Support for sustainable transport modes; and
- Access to other transport infrastructure (such as ports and airports).

2.1 Corridor Assessment

2.1.1 Connectivity of the strategic road network

Irrespective of the transport scenario adopted, all corridor options will ultimately facilitate the delivery of a scheme which addresses an existing deficiency gap in the national primary network. The corridor options are not very geographically disparate, with off-line elements facilitating short deviations off the existing route only, hence there is no discernible difference between the corridor options in terms of adding value and achieving connectivity of the strategic network. Accordingly, all corridor options in the northern and southern sections are assessed as highly positive.

2.1.2 Connectivity between transport modes

The present-day integration of the N11/M11 highway with other transport modes is highly inadequate. Mode choice is constrained by limited accessibility to the rail corridor and an absence of park and ride capacity. Bus services must also negotiate the heavy congestion and are subject to the same unreliability of journey time – all of which fosters an unsustainable dependency on the private car. Overcoming this segregation of transport modes is a firm objective of the N11/M11 Scheme, however, an evaluation on the merits of each option can be more appreciably made by comparing the specific details of the transport scenarios as distinct from the actual route corridor. Hence, all corridor options in the northern and southern sections are considered neutral under this criterion.

2.1.3 Support for sustainable transport modes

The N11/M11 route is identified within the National Transport Authority's *Transport Strategy for the Greater Dublin Area 2016 – 2035* as one of the core radial bus corridors, as presented in **Figure 1**.

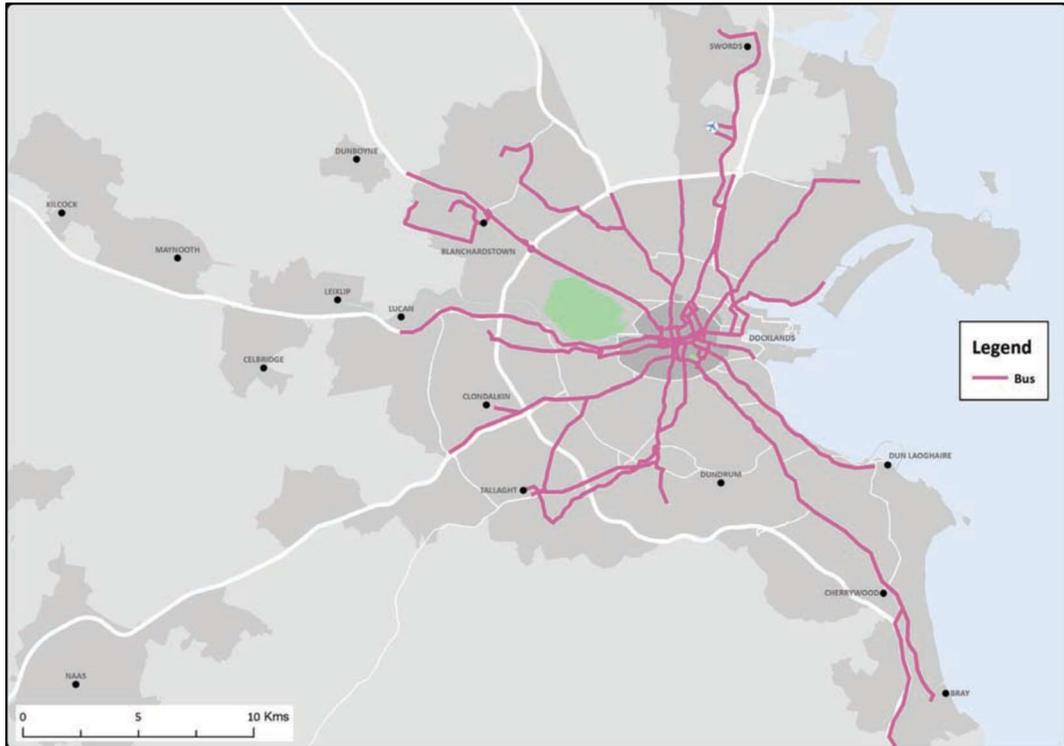


Figure 1 2035 Core Bus Network – Radial Corridors (extracted from GDA Strategy)

The N11/M11 has additionally been identified within the GDA Strategy as one of the six regional bus corridors forming part of the Core Bus Network, serving longer distance buses from Wexford and regional services from Arklow, Wicklow and the N11/M11 corridor.

Congestion and safety issues on the N11/M11 currently stymie the ability of sustainable modes to provide a credible alternative to private transport. To satisfy modern mobility needs against an urban backdrop, the N11/M11 corridor must support accessibility across a variety of transport modes, including public transport and active travel. The performance of scheme options against this metric is again related to the particular components of each as distinct from the geographical corridor – hence all corridor options are considered equal.

2.1.4 Access to other transport infrastructure

From its connection to the M50 motorway, the N11/M11 route forms part of TEN-T Comprehensive Route E01, linking the GDA to Rosslare Europort – which is also listed under Annex 2 of the regulation as part of the comprehensive TEN-T port network. In a post Brexit environment, the strategic importance of the route has been further underscored as the dependency on the corridor for freight distribution has grown significantly¹. Moreover, the N11/M11 equally provides a vital link to the GDA and by extension the national primary network (via the M50

¹ Figures released by Rosslare Europort for the month of January 2021 compared to January 2020 showed an increase in overall freight volumes, including to the UK, of 43% following the ending of the Brexit transition period on 31 December 2020. In the same month, total freight volumes to continental Europe increased by 447% and the number of direct sailings to Europe increased from 3 to 16 each way per week.

motorway) and Dublin Airport. Irrespective of the corridor or transport scenario applied, all scheme options will facilitate strengthening of linkages to other transport infrastructure of economic importance. All corridor options in the northern and southern sections are therefore assessed positively in this regard.

2.2 Scenario Assessment

2.2.1 Connectivity of the strategic road network

Both Transport Scenarios 5A and 5B deliver major improvements to the operational efficiency of the N11/M11 by virtue of improving journey times and journey time reliability, removing existing bottlenecks and addressing existing safety deficiencies. Accordingly, both scenarios are considered as highly positive under this criterion. The delivery of bus service enhancements within Transport Scenario 4 is also assessed as having a positive impact, however, in the absence of improvements to the road network, bus services are likely to encounter similar or greater levels of congestion in the future, such that they remain unreliable and unattractive to many users. Consequently, Transport Scenario 4 is considered to offer only minor positives if road infrastructure is not improved in tandem to enable sustainable modes to provide a more credible alternative.

2.2.2 Connectivity between transport modes

The significant improvements to journey time and to journey time reliability as a result of the road based interventions in Transport Scenarios 5A and 5B will equally be realised by bus services utilising the corridor. The degree to which mode transfer away from the private car is realised, is likely to be dependent on additional factors, such as provision of attractive bus services, pricing and parking controls and other elements of demand management. Notwithstanding, it is considered that the primary objectives of the project vis-à-vis supporting a balance of alternative modes on the N11 can only be achieved if existing road infrastructure is improved to move more people more efficiently. Consequently, both Transport Scenarios 5A and 5B are assigned positive impact scores.

Transport modelling assessments undertaken during Phase 2 indicate potentially strong demand for improved bus provision along the N11 corridor, targeted to capture trips of high demand both to and from the GDA and between the smaller urban centres along the N11. The provision of bus service enhancements within Scenario 4 is considered to offer a moderately positive impact under this criterion, whilst noting that the ultimate success of bus services is likely to be contingent on the improved reliability of journey time delivered through better road infrastructure and demand management measures to disincentivise car travel.

2.2.3 Support for sustainable modes

As a high-speed motorway/dual carriageway, it may be preferable that provision for active travel modes (i.e. walking and cycling), is accommodated away from the road carriageway, using alternative facilities to limit interaction with high volumes of motorised traffic and to ensure a more comfortable and spacious

environment for vulnerable users. The inclusion of parallel service roads within Scenarios 5A and 5B between Junction 6 (Bray/Fassaroe) and Junction 8 (Kilmacanoge) are expected to contribute to a safer environment for active travel in these areas. On balance, Scenario 5A is considered marginally preferable given the additional inclusion of a new parallel road between Junction 5 (Bray North) and Junction 6 (Bray/Fassaroe), which could provide a safer alternative route for active travel, linking major future residential developments at Fassaroe and Old Conna to Bray.

As with Transport Scenario 5A, Transport Scenario 4 is also considered to offer a moderately positive impact in terms of supporting sustainable transport modes. The provision of an improved bus service network may encourage more people to adopt a more sustainable transport mode, whilst most public transport trips also incorporate a degree of active travel at journey start and end.

2.2.4 Access to other transport infrastructure

As noted in **Section 2.1.4**, all scheme options advanced to Stage 2 are considered to offer significantly improved access to other transport infrastructure of economic importance. Transport Scenarios 5A and 5B have been demonstrated to significantly improve journey time and journey time reliability between the study area and the strategic transport hubs within the GDA to the north and Rosslare Europort to the south. Transport Scenario 4 encompasses improved bus frequencies from the study area to the GDA and specifically Dublin Airport, and is also ranked positively in this regard.

3 Land Use Integration

This criterion examines the compatibility of the scheme options with adopted land use objectives, with specific focus on the following aspects:

- Support for local development plan;
- Strategic connectivity of long-distance trips; and
- Mitigate risks of urban sprawl.

3.1 Corridor Assessment

As with elements of the transport integration assessment, it is not entirely possible to disassociate the transport scenarios from the choice of corridor when appraising options under the criteria above. The nature of the transport intervention, as distinct from the transport route (corridor), provides a more tangible basis for comparing and evaluating option performance. In a general sense, all corridor options in both the northern and southern sections will deliver an improved transport corridor that will encourage and support investment, tourism and employment, and enhance the economic prospects within the study area. These objectives are entirely accordant with the objectives of local planning frameworks, as discussed in more detail in **Section 3.2** below. As such, all corridor options are equally ranked as majorly positive.

The impact of the scheme options on strategic connectivity for long distance trips and mitigating the risks of urban sprawl is best approached through an assessment the transport scenarios. As such, the impact of all corridors in the northern and southern sections has been assessed as neutral under each of these criteria.

3.2 Transport Scenario Assessment

3.2.1 Support for local development plan

The Wicklow County Development Plan sets out a strategic spatial framework for the proper planning and sustainable development of County Wicklow for the period between 2016 and 2022. While the Plan is in place for a six-year period, it is framed having regard to the long-term development objectives of the County beyond 2022.

The Wicklow County Development Plan states in relation to physical infrastructure that it is a strategy of the plan to, inter alia:

“Facilitate the improvement of the existing road network, to remove bottlenecks and increase free flow.”

A number of specific objectives for the N11/M11 are contained within the Plan, the following of which are relevant:

“Upgrading of the N11/M11 between the County boundary and Ashford including road capacity and safety improvements to the main carriageway and all necessary improvements to associated junctions;

Improving the M11 / M50 merge;

To improve the capacity of the N11 / M11 from Rathnew to the County boundary at Bray in a manner capable of facilitating greater free flow of public transport.”

The road improvement measures contained within Transport Scenarios 5A and 5B are strongly supportive of the objectives of the local development planning frameworks and considered to be majorly positive in this regard.

Transport Scenario 4, which includes enhancements to bus services only, aligns with the overall objective of improving public transport capacity on the N11/M11 corridor, however, it is considered to offer only minor positives if road infrastructure is not improved in tandem to enable sustainable modes to provide a more credible alternative.

3.2.2 Strategic connectivity of long-distance trips

From its connection to the M50 motorway, the N11/M11 route forms part of TEN-T Route E01, linking the GDA to Rosslare Europort. A key objective of the scheme is to align with the policy of the TEN-T Comprehensive network by providing a high-quality link which will contribute to enhancing social cohesion within Ireland and across the EU. The impact of each transport scenario in catering for strategic demand is considered to be positive. Although the road based interventions within Transport Scenario 5A do not include the provision of

additional lanes on the N11/M11 mainline, it does achieve better overall journey time improvements and enhances the strategic capacity of the route by segregating local and long-distance trips. As such, Transport Scenario 5A is considered to have a major positive impact on strategic connectivity. Transport Scenario 5B also delivers significant journey time savings, albeit without similar segregation of local traffic and is thus considered moderately positive in comparison. The range of bus service enhancements included in Transport Scenario 4 is aimed at catering for both shorter and longer distance trips, with specific services targeting demand from beyond the immediate study area as far as Wexford, Gorey and Arklow. Transport Scenario 4 is however considered to offer a minor positive impact only, noting that road improvement measures are considered necessary to adequately restore the strategic function of the corridor.

3.2.3 Mitigate risks of urban sprawl

All road-based options are focussed closely around the existing N11/M11 route corridor. As such, it is unlikely that the scheme itself will instigate development beyond that envisaged within existing land use policies and objectives. However, elements of each scenario may be considered as potentially positive or negative in respect of mitigating urban sprawl risk, noting that the scheme sits on the outer fringe of the Dublin metropolitan area. Scenarios 5A and 5B both propose extensive junction closures, particularly those of a sub-standard nature, many of which have contributed to extensive historical low-density ribbon development along the corridor. While this can be viewed as a positive, the improved journey times delivered by the scheme may need to be tempered with demand management measures and supplemented with sustainable transport alternatives to discourage longer distance commuting. A possible negative associated with Transport Scenario 5A is the potential to further extend the development of Bray west of the N11/M11. This is already proposed as part of the Fassaroe masterplan, but the provision of a western parallel road between Junction 5 (Bray North) and Junction 6 (Bray/Fassaroe) could open this land bank to further urbanisation where access is currently limited by the presence of the motorway. Overall, Scenarios 5B and 4 are considered neutral with a minor negative impact assigned to Scenario 5A.

4 Geographical Integration

The assessment under this criterion examines the alignment of the scheme options with respect to achieving better integration with wider geographic communities in the context of the National Planning Framework and EU coherence.

The National Planning Framework (NPF) is the Government’s high-level strategic plan for shaping the future growth and development of the country to the year 2040. It is a framework to guide public and private investment, to create and promote opportunities and to protect and enhance the environment. One of the “*National Strategic Outcomes*” within this framework relates to “*Enhanced Regional Accessibility*”, key objectives of which are:

“Inter-Urban Roads

Maintaining the strategic capacity and safety of the national roads network including planning for future capacity enhancements;

Improving average journey times targeting an average inter-urban speed of 90kph;

Enabling more effective traffic management within and around cities and re-allocation of inner city road-space in favour of bus based public transport services and walking/cycling facilities.”

The NPF also advocates the “*National Road Network*” as one of its Strategic Investment Priorities and lists “*High-Quality International Connectivity*” as a “*National Strategic Outcome*”.

All scheme corridor options and transport scenarios are considered highly positive in terms of realising the goals of the NPF, however, Transport Scenario 4 is considered to offer minor positives in comparison, again in recognition that bus services alone will not fully achieve the strategic objectives of the NPF or that of TEN-T policy (as discussed in **Section 3.2.2** above).

5 Other Government Policy Integration

This element of the assessment focuses on the alignment of the project options in respect of promoting balanced regional development in the context of the National Development Plan and NPF. Moreover, the assessment also considers alignment with other Government planning frameworks, including the Regional Spatial and Economic Strategy (RSES), the Climate Action Plan (CAP) and the Future Land Transport Investment Framework.

5.1 Corridor Assessment

As discussed in **Section 4**, all corridors are considered highly positive in terms of reaching the ambitions of the NPF.

Regional Policy Objective RPO 8.10 within the Regional Spatial and Economic Strategy (RSES) states:

“The RSES supports appraisal and or delivery of the road projects set out in Table 8.4 subject to the outcome of appropriate environmental assessment and the planning process.”

The N11/M11 Scheme is identified as one such road project in Table 8.4.

Regional Policy Objective RPO 8.16 is also relevant, noting the objective to:

“Support the improvement and protection of the TEN-T network to strengthen access routes to Ireland’s ports, including investment in the ongoing development of the N11/M11 to improve connectivity to Rosslare and improvements to the Dublin-Wexford Rail line.”

All corridor options are equally considered *majorly positive* with respect to integration with the regional policy objectives.

A distinction is however drawn when comparing the corridor options in the southern section against the specific policies outlined in the Future Land Transport Investment Framework and the CAP. The off-line corridor options, i.e. Corridor 2 (South) and Corridor 6 (South) are considered highly negative, owing to the inconsistency with wider government policy – most notably around Ireland’s commitments to ensuring resource efficiency and designing out waste within a circular economy context. These off-line corridors would both generate huge quantities of waste and embedded carbon given their engineering scale and could be considered disproportionate to addressing the problem identified. The off-line elements of Corridors 2 and 6 (South) are furthermore inconsistent with the hierarchy of intervention principle outlined in the Future Land Transport Investment Framework, which strives to make more efficient and sustainable use of the existing network.

5.2 Transport Scenario Assessment

Each transport scenario is considered to respond positively in terms of integrating with wider government policy owing to the same reasons as outlined in the corridor assessment (for NPF and RSES). Again, a distinction is drawn when comparing scenarios against the policies outlined in the Future Land Transport Investment Framework and the CAP. Scenarios 5A and 5B, although considered positive, may require demand management measures to safeguard investment in the road network, manage commuting and/or induced demand and deliver a sustainable outcome. Transport Scenario 5A is marginally preferred owing to a better performance in the operational carbon assessment (refer to **Appendix D6** for details). Transport Scenario 4 is considered highly positive, in view of prioritising public transport.

6 Assessment Summary

The overall outcome of the corridor assessment with respect to integration is presented in **Table 1** and **Table 2** for the northern section and southern section respectively.

Table 1 Stage 2 PAM Corridor Performance Matrix (Integration) – Northern Section

Integration Criteria	Sub-Criteria	Corridor Option 1A (North)	Corridor Option 1B (North)
Transport Integration	Connectivity of the Strategic Road Network	7 – Major or highly Positive	7 – Major or highly Positive
	Connectivity Between Transport Modes	4 – Not significant or neutral	4 – Not significant or neutral

Integration Criteria	Sub-Criteria	Corridor Option 1A (North)	Corridor Option 1B (North)
	Support for sustainable transport modes	4 – Not significant or neutral	4 – Not significant or neutral
	Access to other transport infrastructure	6 – Moderately Positive	6 – Moderately Positive
	Overall Impact Score	5 – Minor or slightly Positive	5 – Minor or slightly Positive
	Preference	Preferred	Preferred
Land Use Integration	Support for Local Development Plan	7 – Major or highly Positive	7 – Major or highly Positive
	Strategic Connectivity for Long Distance Trips	4 – Not significant or neutral	4 – Not significant or neutral
	Mitigate Risks of Urban Sprawl	4 – Not significant or neutral	4 – Not significant or neutral
	Overall Impact Score	5 – Minor or slightly Positive	5 – Minor or slightly Positive
	Preference	Preferred	Preferred
Geographical Integration	N/A	7 – Major or highly Positive	7 – Major or highly Positive
	Preference	Preferred	Preferred
Other Government Policy Integration	NDP/NPF	7 – Major or highly Positive	7 – Major or highly Positive
	RSES	7 – Major or highly Positive	7 – Major or highly Positive
	CAP/ Future Land Transport Investment Framework	7 – Major or highly Positive	7 – Major or highly Positive
	Overall Impact Score	7 – Major or highly Positive	7 – Major or highly Positive

Integration Criteria	Sub-Criteria	Corridor Option 1A (North)	Corridor Option 1B (North)
	Preference	Preferred	Preferred

Table 2 Stage 2 PAM Corridor Performance Matrix (Integration) – Southern Section

Integration Criteria	Sub-Criteria	Corridor Option 1 (South)	Corridor Option 2 (South)	Corridor Option 5 (South)	Corridor Option 6 (South)
Transport Integration	Connectivity of the Strategic Road Network	7 – Major or highly Positive			
	Connectivity Between Transport Modes	4 – Not significant or neutral			
	Support for sustainable transport modes	4 – Not significant or neutral			
	Access to other transport infrastructure	6 – Moderately Positive			
	Overall Impact Score	5 – Minor or slightly Positive			
	Preference	Preferred	Preferred	Preferred	Preferred
Land Use Integration	Support for Local Development Plan	7 – Major or highly Positive			
	Strategic Connectivity for Long Distance Trips	4 – Not significant or neutral			
	Mitigate Risks of Urban Sprawl	4 – Not significant or neutral			

Integration Criteria	Sub-Criteria	Corridor Option 1 (South)	Corridor Option 2 (South)	Corridor Option 5 (South)	Corridor Option 6 (South)
	Overall Impact Score	5 – Minor or slightly Positive			
	Preference	Preferred	Preferred	Preferred	Preferred
Geographical Integration	N/A	7 – Major or highly Positive			
	Preference	Preferred	Preferred	Preferred	Preferred
Other Government Policy Integration	NDP/NPF	7 – Major or highly Positive			
	RSES	7 – Major or highly Positive			
	CAP/ Future Land Transport Investment Framework	7 – Major or highly Positive	1 – Major or highly negative	7 – Major or highly Positive	1 – Major or highly negative
	Overall Impact Score	7 – Major or highly Positive	3 – Minor or slightly negative	7 – Major or highly Positive	3 – Minor or slightly negative
	Preference	Preferred	Least Preferred	Preferred	Least Preferred

The overall outcome of the transport scenario assessment with respect to integration is presented in **Table 3**.

Table 3 Stage 2 PAM Transport Scenario Performance Matrix (Integration)

Integration Criteria	Sub-Criteria	Transport Scenario 5A	Transport Scenario 5B	Transport Scenario 4
Transport Integration	Connectivity of the Strategic Road Network	7 – Major or highly Positive	7 – Major or highly Positive	5 – Minor or slightly positive
	Connectivity Between Transport Modes	4 – Not significant or neutral	4 – Not significant or neutral	6 – Moderately Positive
	Support for sustainable transport modes	5 – Minor or slightly positive	4 – Not significant or neutral	7 – Major or highly Positive
	Access to other transport infrastructure	6 – Moderately Positive	6 – Moderately Positive	6 – Moderately Positive
	Overall Impact Score	5 – Moderately Positive	5 – Moderately Positive	6 – Moderately Positive
	Preference	Intermediate	Intermediate	Preferred
Land Use Integration	Support for Local Development Plan	7 – Major or highly Positive	7 – Major or highly Positive	5 – Minor or slightly positive
	Strategic Connectivity for Long Distance Trips	7 – Major or highly Positive	6 – Moderately positive	5 – Minor or slightly positive
	Mitigate Risks of Urban Sprawl	3 – Minor or slightly negative	4 – Not significant or neutral	4 – Not significant or neutral
	Overall Impact Score	6 – Moderately Positive	6 – Moderately Positive	5 – Minor or slightly positive
	Preference	Preferred	Preferred	Intermediate

Integration Criteria	Sub-Criteria	Transport Scenario 5A	Transport Scenario 5B	Transport Scenario 4
Geographical Integration	N/A	7 – Major or highly Positive	7 – Major or highly Positive	5 – Minor or slightly positive
	Preference	Preferred	Preferred	Intermediate
Other Government Policy Integration	NDP/NPF	7 – Major or highly Positive	7 – Major or highly Positive	7 – Major or highly Positive
	RSES	7 – Major or highly Positive	7 – Major or highly Positive	7 – Major or highly Positive
	CAP/ Future Land Transport Investment Framework	6 – Moderately Positive	5 – Minor or Slightly Positive	7 – Major or highly Positive
	Overall Impact Score	6 – Moderately Positive	5 – Minor or Slightly Positive	7 – Major or highly Positive
	Preference	Intermediate	Intermediate	Preferred

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