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Wicklow County Council

N11/M11 Bus Priority Interim Scheme

Phase 2 - Long-list Option Sifting (Sub-Scheme C, Junction 8 to Junction 9)

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1. Introduction

This report details the Long-list Option Sifting Assessment for the N11/M11 Bus Priority Interim Scheme (hereafter the N11/M11 BPIS). As described in Section 8.3 of the Option Selection Report, the long-list assessment represents the first step in the revised Stage 2 Assessment process. It comprises the development of a long list of options aimed at resolving the previously identified deficiencies within Sub-Schemes B and C and the undertaking of a sifting exercise to establish how these options respond to the agreed project objectives. The recommendations of the option sifting exercise inform the list of feasible options to be taken forward for more detailed assessment.

This report specifically focuses on the section of Sub-Scheme C between Junction 8 (Kilmacanogue) and Junction 9 (Glenview), with a view to:

- Identifying feasible options for closing intermediate junctions/accesses
- Identifying feasible options for providing active travel facilities

The overall process for completing the Stage 2 Project Appraisal Matrix is illustrated in Figure 1-1.



Figure 1-1 Stage 2 Project Appraisal Process

2. Option Sifting Methodology

2.1 Overview

A sifting exercise has been undertaken on the long list of options to assess how each option responded to the project objectives and to refine, if possible, the overall number of options taken forward for more detailed appraisal. In accordance with the TII Project Appraisal Guidelines and the Department of Transport Common Appraisal Framework (CAF)[1], objectives have been established under the six headline CAF criteria of:

- Economy
- Safety

[1] Department of Transport Common Appraisal Framework (CAF) for Transport Projects and Programmes (October 2020). It is noted that the Transport Appraisal Framework (TAF) was published by the Department of Transport in June 2023 and replaces the CAF. The requirements of the revised TAF guidance will be applied as the N11/M11 BPIS Project moves to the next phases (i.e. Phase 3 and subsequent phases).

- Environment
- Accessibility and Social Inclusion
- Integration
- Physical Activity

The objectives defined at the outset of the N11/M11 BPIS are presented in Table 2-1 and are intended to allow a focused definition of options which can be examined both quantitatively and qualitatively against a series of required outcomes.

Table 2-1 N11/M11 BPIS Project Objectives

Criteria	Project Specific Objective
Economy	**Economy Objective 1:** • Provide the infrastructure to increase the people carrying capacity of the N11/M11 between Loughlinstown Roundabout and Junction 9 (Glenview) **Economy Objective 2:** • Deliver a practicable interim transport solution capable of delivering benefits required in the short/medium term **Economy Objective 3:** • Generate positive economic benefits to public transport users by: – Reducing bus journey times – Improving bus journey time reliability
Safety	**Safety Objective 1:** • To deliver bus priority measures which are clearly delineated and understood by general road users and bus drivers in the environment of an inter-urban route. **Safety Objective 2:** • Ensure bus priority can be delivered without adversely impacting on the safety of all road users.
Environment	**Environment Objective 1:** • To provide for more sustainable transport solutions on the N11/M11 corridor, supporting a balance of alternative modes and enabling a reduction in private car dependency and reducing the carbon intensity of travel.
Accessibility and Social Inclusion	**Accessibility & Social Inclusion Objective 1:** • To increase bus patronage along the N11/M11 corridor and enable sustainable travel to provide a faster and more reliable choice. **Accessibility & Social Inclusion Objective 2:** • To support improved access to the GDA for all transport users along the N11/M11 corridor.
Integration	**Integration Objective 1:** • To deliver a practicable interim transport solution which does not introduce significant constraint on the subsequent development of the N11/M11 Junction 4 to Junction 14 Improvement scheme. **Integration Objective 2:** • To support integration of road-based transport with other transport modes.

Criteria	Project Specific Objective
	Integration Objective 3: • To complement wider government transport policy.
Physical Activity	**Physical Activity Objective:** • To provide a facility that allows for the delivery of an attractive alternative mode of transport for communities which supports the creation of a healthier urban environment for active travel, through congestion relief.

In addition to the six headline CAF criteria, *Indicative Cost* has been extracted from the Economy criterion and assessed as a separate standalone criterion, resulting in a total of seven assessment criteria. To assess the respective merits of each option, a series of Key Performance Indicators (KPIs) have been defined as a measure for judging the alignment of options with the project objectives. Each option has then been qualitatively assessed, with an impact score determined based on the likely impact against each KPI, using the seven-point scale presented below.

- 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
- 1 – Major or highly negative

2.2 Weighting of Assessment Criteria

In developing the long-list sifting matrix, consideration has been given as to how each of the seven criteria should be weighted, to ensure that the individual impacts of each option have been robustly and appropriately assessed relative to each other.

The seven criteria each have varying numbers of KPIs as listed in Table 2-2. Accordingly, a summation of the impact scores will assign a weighting proportionate to the number of KPIs under each heading.

This approach recognises that, as an on-line scheme assessment, direct environmental impacts are expected to be similar in nature across all options and relatively minor in scale when compared against an off-line (i.e. greenfield) options assessment. By comparison, the safety conditions and cost are expected to vary significantly, so it is considered that these elements should be afforded a higher weighting in the final matrix.

Therefore, the seven criteria have been weighted as follows:

- For each option, the scores against each KPI (ranging from 1 – 7) have been summed to produce a total impact score under each of the seven assessment criteria.
- The total impact score has then been converted to a weighted score under each of the seven assessment criteria.
- The weighted scores are derived as follows:

- Equal weighting has been applied to the Economy, Environment, Accessibility & Social Inclusion, Integration and Physical Activity criteria. In each case, the impact score is converted to a weighted score based on marks out of 100.
- An increased weighting has been applied to Cost and Safety criteria, which are considered to be key differentiators and critical elements to the successful delivery of the bus priority within Sub-Scheme B and Sub-Scheme C. In each case, the impact score is converted to a weighted score based on marks out of 200.

- The weighted scores under each of the seven criteria are summed to produce an overall total score for each option on the long list (expressed as marks out of 900 – i.e. 200 for Cost and Safety, and 100 for each of the remaining five criteria).

Table 2-2 Project Objectives and Key Performance Indicators (KPIs)

Criteria	Project Objective	Key Performance Indicator (KPI)
Economy (Weighted Max. Score = 100)	• To increase the people carrying capacity of the N11/M11 between Loughlinstown Roundabout and Junction 9 (Glenview) • Deliver an interim transport solution capable of delivering value for money • Generate positive economic benefits to public transport users by: – Reducing bus journey times – Improving bus journey time reliability	**Constructability:** • Extent of enabling/corrective works to deliver effective bus priority • Extent of demolition/disruption during construction • Extent of potential realignment of existing N11/M11 mainline **Bus Priority:** • Effectiveness of bus priority measures at key delay points
Indicative Cost (Weighted Max. Score = 200)	N/A (Cost has been assessed as a separate criterion)	Indicative Cost Range
Safety (Weighted Max. Score = 200)	• To deliver bus priority measures which are clearly delineated and understood by general road users and bus drivers in the environment of an inter-urban route. • Ensure bus priority can be delivered without adversely impacting on the safety of all road users.	**Compliance with TII Standard DN-GEO-03087:** • Junction strategy (merge/diverge closed) • Number of minor junctions closed • Requirement for departures • Number of conflict points • Extent of continuous bus priority achieved
Environment (Weighted Max. Score = 100)	• To provide for more sustainable transport solutions on the N11/M11 corridor, supporting a balance of alternative modes and enabling a reduction in private car dependency and reducing the carbon intensity of travel.	Circular Economy impact – degree of re-use of existing asset Impacts to community Impact on environmental constraints
Accessibility & Social Inclusion (Weighted Max. Score = 100)	• To increase bus patronage along the N11/M11 corridor and enable sustainable travel to provide a faster and more reliable choice.	**Bus Priority:** • Effectiveness of bus priority measures at key delay points

Criteria	Project Objective	Key Performance Indicator (KPI)
	• To support improved access to the GDA for public transport users along the N11/M11 corridor.	
Integration (Weighted Max. Score = 100)	• To deliver a practicable interim transport solution which does not introduce significant constraint on the subsequent development of the N11/M11 Junction 4 to Junction 14 Improvement Scheme. • To support the integration of road-based transport with other transport modes. • To complement wider government transport policy.	**Compatibility with N11/M11 Scheme** • Extent that the form of option aligns with the N11/M11 J4-J14 Scheme Phase 2 Preferred Option • Extent of abortive works **Compliance with Government Policy**
Physical Activity (Weighted Max. Score = 100)	• To provide a facility that allows for the delivery of an attractive alternative mode of transport for communities which supports the creation of a healthier urban environment for active travel, through congestion relief.	**Active Travel Facility** • Provision of a safe alternative facility • Conflicts between active travel users and buses

3. Initial List of Options

Numerous options have been considered which seek to remove the conflict points at intermediate junctions and accesses and provide active travel facilities within Sub-Schemes B and C. The development of options has taken guidance from TII Publication DN-GEO-03087[2], which specifically notes the following in respect of minor junctions and accesses:

"In order to reduce conflict points and assist vehicles in navigating junctions, compact grade separated, and left-in left-out junctions should be upgraded to have full merge and diverge layouts. Where space does not permit this, design organisations should carefully consider how the design will minimise the risk of vehicle conflict. Design organisations should review what measures can be implemented to improve the safety of the existing junction and its interaction with the scheme.".

"In line with the guidelines set out in DN-GEO-03060[3], the overriding principle is that direct vehicular access onto national roads should be avoided as far as practicable. Hard shoulder bus priority schemes should not contain direct accesses as per DN-GEO-03060. Where a hard shoulder bus priority measures scheme is being undertaken on a Type 1 Dual Carriageway all existing accesses should be closed. Where it is not possible to remove a direct access, a departure is required as set out in DN-GEO-03060."

[2] Hard Shoulder Bus Priority on Motorways and Type 1 Dual Carriageway, DN-GEO-03087, TII (May 2022). Available from: https://www.tiipublications.ie/library/DN-GEO-03087-01.pdf.

[3] Geometric Design of Junctions (priority junctions, direct accesses, roundabouts, grade separated and compact grade separated junctions), DN-GEO-03060, TII (May 2023). Available from: https://www.tiipublications.ie/library/DN-GEO-03060-03.pdf.

While the primary basis behind options development is to identify ways of closing existing minor junctions and accesses northbound and southbound within Sub-Schemes B and C – as required by TII Standard DN-GEO-03087 – the challenges involved in doing so have meant that the following approach has been taken:

- The closure of many of the legacy accesses along the N11 dual carriageway poses very specific and difficult challenges in terms of engineering feasibility, environmental impact, and cost.
- Although the retention of any minor junction or direct access would require a departure, a pragmatic view has been taken in line with the objectives of the scheme, which does not seek to close each access at all costs or impact. It may, in certain cases, be preferable to retain an access and seek a departure from DN-GEO-03087.
- It is acknowledged that the presence of certain minor junctions/accesses poses a greater impediment to the safe operation of bus priority than others. For example, some accesses are more geometrically sub-standard than others, such that it would not be acceptable to retain the access along the hard shoulder bus priority measure under any circumstance. In other cases, it may be possible to retain an existing access and mitigate or manage any safety implications to an acceptable level.
- Furthermore, the degree to which each minor junction or accesses is likely to impede bus journey time is also variable. Highly trafficked accesses with greater turning movements will result in higher weaving volumes into the hard shoulder, frequently slowing the progress of the bus through the network. Conversely, lightly trafficked accesses may impede bus priority only very occasionally.
- Options have therefore been developed which close all accesses, or only close certain accesses within Sub-Schemes B and C. The aim of the analysis is to determine the optimal junction strategy in consideration of the specific objectives of the scheme.

3.1 Existing Junctions and Accesses

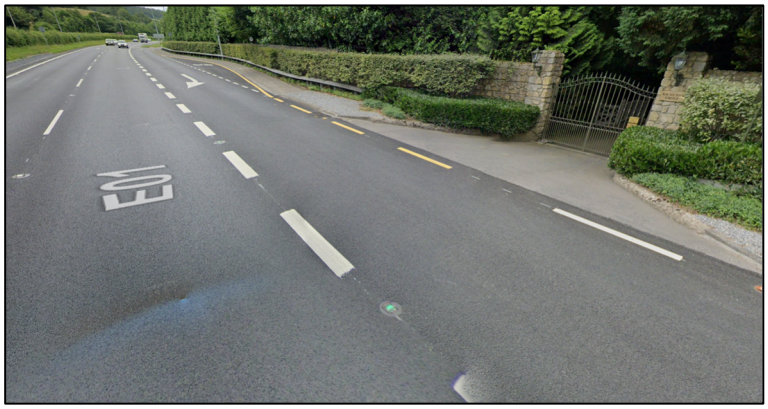
For the purposes of undertaking the assessment, all existing intermediate junctions and direct accesses between Junction 8 (Kilmacanogue) and Junction 9 (Glenview) have been considered. This ensures that the assessment considers the overall impacts on bus priority across the full extent of the N11 route segment in question (i.e. Junction 8 to Junction 9 in this case). Accordingly, the full list of junctions and access points considered within this assessment is presented in Table 3-1 for the southbound direction and Table 3-2 for the northbound direction.

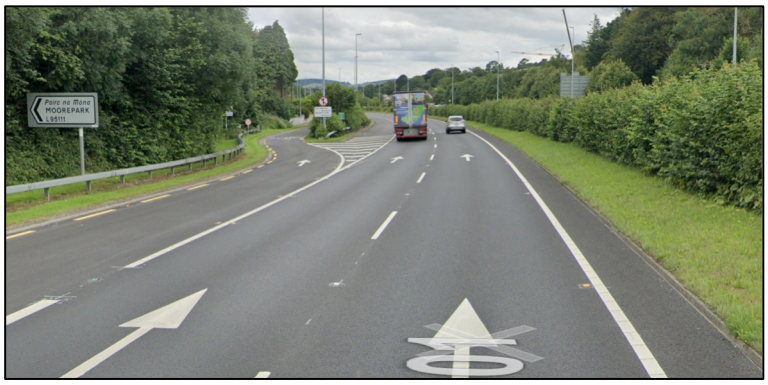
Table 3-1 Existing Junctions / Accesses Southbound

Junction / Access Description	Existing Junction / Access Image
Name: L5530 Kilmurry Cottages* **Location:** Sub-Scheme C Southbound **Type:** Left in – left out junction (*Existing access was closed in 2021)	

Junction / Access Description	Existing Junction / Access Image
Name: Private Field Access **Location:** Sub-Scheme C Southbound **Type:** Direct Access	
Name: Private Field Access **Location:** Sub-Scheme C Southbound **Type:** Direct Access	
Name: Commercial Access **Location:** Sub-Scheme C Southbound **Type:** Direct Access	

Table 3-2 Existing Junctions / Accesses Northbound

Junction / Access Description	Existing Junction / Access Image
Name: L5029 Quill Road Junction **Location:** Sub-Scheme C Northbound **Type:** Left in – left out junction	
Name: Private Access (Residential) **Location:** Sub-Scheme C Northbound **Type:** Direct access	
Name: Private Access (Residential) **Location:** Sub-Scheme C Northbound **Type:** Direct access	

Junction / Access Description	Existing Junction / Access Image
Name: Private Field Access **Location:** Sub-Scheme C Northbound **Type:** Direct access	
Name: L95111 Moorepark (Diverge) **Location:** Sub-Scheme C Northbound **Type:** Segregated Service Road with diverge / merge layout	
Name: L95111 Moorepark (Merge) **Location:** Sub-Scheme C Northbound **Type:** Segregated Service Road with diverge / merge layout	

3.2 Baseline Assumptions

It should be noted that the following baseline assumptions have been applied for the purposes of the long-list sifting exercise:

- The N11/M11 mainline cross-section is assumed to consist of 2 general traffic lanes and a hard shoulder bus priority measure as per the requirements outlined within DN-GEO-03087. For appropriate comparison of options, the sifting exercise has assessed the impacts and cost of the additional infrastructure associated with the option – i.e. the mainline cross-section has not been assessed or costed as part of the scoring and assessment of options.

- High level cost estimates developed for the purposes of the long-list sifting exercise are preliminary in nature and subject to change.
- At the time of undertaking the long list option assessment, microsimulation traffic modelling was not available. Considering this, only qualitative assessments of the options have been prepared for this stage.

For all southbound options:

- A two-way on-line, offroad segregated active travel facility is assumed to be provided on the eastern side of the N11. An eastern side active travel facility was preferred due to improved connectivity with other proposed Wicklow County Council active travel infrastructure, i.e. Kilmacanogue to Southern Cross Greenway Scheme[4].
- Subject to further landowner engagement during Phase 3, it is understood that alternative access is available to all existing intermediate junctions between Junction 8 (Kilmacanogue) and Junction 9 (Glenview) in the southbound direction. Therefore, it is considered feasible to close these junctions to the N11, without providing alternative infrastructure. It is proposed that all southbound accesses as listed in Table 3-1 will be closed, noting that the L5530 Kilmurry Cottages left in – left out junction was previously closed in 2021. In consideration of this, no further assessments have been developed for the southbound direction.

For all northbound options:

- Where the Moorepark merge and diverge remain open, assessments suggest implementation of a Through Junction Running (TJR) treatment compliant with TII Publication DN-GEO-03087 would directly impact on the Kilmacanogue Marsh pNHA – which would constitute a highly negative impact on an ecological constraint of importance at international level. Considering this, it is assumed that options retaining the Moorepark merge and diverge would adopt a modified TJR treatment to avoid impact on Kilmacanogue Marsh pNHA. It is noted however that this arrangement is not fully compliant with TII Publication DN-GEO-03087 and the substandard nature of the arrangement has been factored into the safety assessments.
- Where the Quill Road left in – left out junction remains open, the implementation of a TJR treatment compliant with TII Publication DN-GEO-03087 is not practical or feasible, as this is not a grade separated junction. Therefore, it is assumed that options retaining the Quill Road junction adopt a modified TJR treatment, ensuring priority for buses is provided through the junction. A somewhat similar arrangement is provided on the N7 westbound close to Newland's Cross, whereby the channel island at the left in – left out junction is set back from the carriageway edge a sufficient distance to enable buses priority to continue through the junction (refer Figure 3-1). It is noted however that this arrangement is not fully compliant with TII Publication DN-GEO-03087 and this has been factored into the safety assessments.
- It is assumed the direct accesses to properties at Kilmurray Grove and the field access are to be closed with alternative access to be provided via a link road to Quill Road.

[4] The Kilmacanogue to Southern Cross Greenway Scheme (separately being progressed by Wicklow County Council) is proposing an off-line Active Travel Facility between the Bray Retail Park Roundabout on the R768 Southern Cross Road and the existing Junction 8 (Kilmacanogue) eastern roundabout.



Figure 3-1 Example of Bus Priority Implementation Through Left in – Left out Junction (© Google 2024)

4. Long-list of Options

The long list of options considered within this section of the corridor are presented in Table 4-1 for the southbound direction and

Table 4-2 for the northbound direction. Schematics of the options are presented in Appendix A. Each option covers the full extent of the N11 between Junction 8 and Junction 9 and is defined by the series interventions proposed at each junction/access point.

Table 4-1 Long-list of Options – Sub-Scheme C, Junction 8 to Junction 9 Southbound

Southbound Options	Intervention Proposed at Junction/Access:				Active Travel Provision
	Kilmurry Cottages Left in-Left out junction	Field Access 1	Field Access 2	Horkan's Garden Centre	
Option 1 (Minor Junction Closures)	Existing access was closed in 2021. No further intervention proposed by BPIS	Close Permanently (Alternative Access via L5530)	Close Permanently (Alternative access via Foxborough Lane)	Close Permanently (Alternative access to Foxborough Lane retained)	On-line off-road between Junction 8 (Kilmacanogue) and Junction 9 (Glenview)

Table 4-2 Long-list of Options – Sub-Scheme C, Junction 8 to Junction 9 Northbound

Northbound Options	Intervention Proposed at Junction/Access:				
	Quill Road Left in-Left out junction	Direct Access 1	Direct Access 2	Field Access 1	Moorepark Service Road
Option 1 (Minor Junction Closures)	Close Permanently (Cul de Sac)	Close Permanently (New Access via Quill Road)	Close Permanently (New access via Quill Road)	Close Permanently (Alternative access via Quill Road)	Close Permanently (New Access via new connection to Quill Road)

Northbound Options	Intervention Proposed at Junction/Access:				
	Quill Road Left in-Left out junction	Direct Access 1	Direct Access 2	Field Access 1	Moorepark Service Road
Option 1A (Minor Junction Closures – Variation A)	Retain left in – left out junction and apply TJR (Departure Required)	Close Permanently (New Access via Quill Road)	Close Permanently (New Access via Quill Road	Close Permanently (Alternative Access via Quill Road)	Close Permanently (Alternative access via new connection to Quill Road)
Option 1B (Minor Junction Closures – Variation B)	Retain left in – left out junction and apply TJR (Departure Required)	Close Permanently (New Access via Quill Road)	Close Permanently (New Access via Quill Road	Close Permanently (Alternative Access to Quill Road is available)	Retain Junction and apply TJR (Departure Required)
Option 2 (Junction 9 Connection to Quill Road)	Close Permanently (New Access via Quill Road / J9 Link Road)	Close Permanently (New Access via Quill Road / J9 Link Road)	Close Permanently (New Access via Quill Road / J9 Link Road)	Close Permanently (Alternative Access to Quill Road is available)	Close Permanently (New Access via New Connection to Quill Road)
Option 2A (Junction 9 – Connection to Quill Road – Variation A)	Close Permanently (New Access via Quill Road / J9 Link Road)	Close Permanently (New Access via Quill Road / J9 Link Road)	Close Permanently (New Access via Quill Road / J9 Link Road)	Close Permanently (Alternative Access via Quill Road)	Retain left in – left out junction and apply TJR (Departure Required)
Option 2B (Junction 9 Connection to Quill Road – Variation B)	Close Permanently (New Access via Quill Road / upgraded Donnelly's Lane)	Close Permanently (New Access via Quill Road / Donnelly's Lane)	Close Permanently (New Access via Quill Road / Donnelly's Lane)	Close Permanently (Alternative Access via Quill Road)	Retain left in – left out junction and apply TJR (Departure Required)

5. Assessment of Options

5.1 Long List Sifting Matrix

The Long List Sifting Matrix is presented in Appendix A.

As previously noted, the long list sifting assessment is presented for the northbound direction only, as the singular option in the southbound direction proposes the closure of all intermediate accesses.

5.2 Economy

5.2.1 Constructability

The objective to deliver a practicable interim scheme has been assessed based on the expected constructability challenges associated with each option. As with the cost estimates, the constructability assessment considers works additional to the provision of the hard shoulder bus priority measures – which is consistent across all options. Options which involve significant enabling works/re-alignment of the mainline and/or demolition and reconstruction of existing infrastructure have been scored negatively, while options which optimise the use of existing infrastructure have been scored positively.

The following is noted in relation to the **Northbound** option assessments:

- Option 1 and Option 1A (Junction Closures and Variation A) involve minimal primarily off-line additional construction works and were therefore considered as a minor or slightly positive with a score of 5.
- The additional works required for Option 1B and Option 2A involve implementing TJR at Moorepark adjacent to the N11 mainline and may require additional temporary traffic management measures. These options were considered minor or slightly negative with a score of 3.
- The works associated with Option 2 are all primarily off-line, with a new link proposed between the properties at Moorepark and Quill Road and between the properties at Kilmurray Grove and Quill Road. A new link between Junction 9 (Glenview) and Quill Road is proposed partially reusing an extent of the existing Donnelly's Lane. This option was considered neutral with a score of 4.
- Option 2B involves the implementation of TJR at the Moorepark merge and diverge. These works, adjacent to the mainline, would require significant traffic management measures. Additionally, the upgrade of the sub-standard Donnelly's Lane cross-section to provide an alternative southern connection from Quill Road to the N11 (via Junction 9) would likely cause substantial disruption to residents with frontages to Donnelly's Lane. This option is moderately negative with a score of 2.

5.2.2 Bus Priority

The objectives to increase people carrying capacity and generate positive economic benefits can be related to the respective bus journey time benefits achieved by options. At this stage, detailed microsimulation modelling is not available to quantify and evaluate journey time performance across the options. Considering this, a qualitative assessment of the options has been undertaken based on the expected effectiveness in addressing delay points for a bus along the corridor. Options which do not address delay points which could otherwise impede bus priority are assigned a lower score, with the assessment also factoring in a higher weighting to more significant delay points along the corridor.

To explain this more clearly:

- For each junction or minor access, a ranking has been assigned to represent the likely degree to which that junction or minor access can be expected to delay or impede bus traffic operating in the hard shoulder. Using a ranking scale of 1-5, a rank of 1 indicates minor delay potential, with a rank of 5 indicating very significant delay potential. In general, higher rankings are assigned to accesses where

turning volumes (and associated weaving movements and/or queuing) are highest, as these movements can be expected to impede bus priority.

- The expected effectiveness considers the relative ability of each junction treatment or intervention to mitigate that delay point. Using a scoring scale of 1-7, a score of 1 indicates that the intervention will have minimal impact in addressing the delay point, whereas a score of 7 indicates that the proposed intervention is fully effective in addressing the likely delay to bus traffic. Interventions which propose to close a minor junction or access are assigned the highest score as the delay point is removed altogether.
- The delay ranking (1-5) and expected effectiveness score (1-7) are multiplied to calculate an overall score for each option, which serves as a metric for quantifying the relative effectiveness of the proposed junction intervention in reducing bus journey time delay and hence maximising bus priority.
- Using the overall score for each option, an impact score is then assigned aligning with the TII PAG scaling system as presented in Section 2.1.

The assessments are presented in Table 5-1 for the northbound direction and the following is noted in relation to the **Northbound** option assessments:

- From a functionality perspective, Option 1 and Option 2 close all intermediate junctions between Junction 8 (Kilmacanogue) and Junction 9 (Glenview). These options are therefore considered to be major or highly positive in the qualitative assessment.
- Option 1A closes direct accesses and the Moorepark merge/diverge, but retains the Quill Road left in-left out junction – which can be expected to cause a minor level of delay to buses. This option is therefore considered to be moderately positive in the qualitative assessment.
- Option 1B closes direct accesses but retains both the Quill Road junction and Moorepark merge/diverge. This can be expected to result in an increased level of delay for buses relative to Option 1A. Therefore, this option is considered to be neutral based on the qualitative assessment.
- Options 2A and 2B close intermediate accesses and the Quill Road junction, but both retain the Moorepark merge/diverge. This can be expected to result in an increased level of delay for buses relative to Option 1A, however a reduced delay relative to Option 1B. Both options are considered to be minor or slightly positive in the qualitative assessment.

Table 5-1 Effectiveness of Northbound options in reducing bus journey time delay

Junction / Access	Delay Potential (D) (1-5)	Option 1		Option 1A		Option 1B		Option 2		Option 2A		Option 2B	
		Expected Effectiveness (E) (1-7)	Score (DxE)	Expected Effectiveness (E) (1-7)	Score (DxE)	Expected Effectiveness (E) (1-7)	Score (DxE)	Expected Effectiveness (E) (1-7)	Score (DxE)	Expected Effectiveness (E) (1-7)	Score (DxE)	Expected Effectiveness (E) (1-7)	Score (DxE)
Quill Road Junction	Moderate (3)	7	21	3	9	3	9	7	21	7	21	7	21
Direct Access 1	Very Minor (1)	7	7	7	7	7	7	7	7	7	7	7	7
Direct Access 2	Very Minor (1)	7	7	7	7	7	7	7	7	7	7	7	7
Field Access 1	Very Minor (1)	7	7	7	7	7	7	7	7	7	7	7	7
Moorepark Northbound Diverge	Minor (2)	7	14	7	14	3	6	7	14	3	6	3	6
Moorepark Northbound Merge	Minor (2)	7	14	7	14	3	6	7	14	3	6	3	6
Overall Score / Maximum Score		**70 / 70**		**58 / 70**		**42 / 70**		**70 / 70**		**54 / 70**		**54 / 70**	
Overall Effectiveness of Option (TII PAG Scale 1-7)		**Major or Highly Positive – 7.0**		**Moderately Positive – 5.8**		**Not Significant or Neutral – 4.2**		**Major or Highly Positive – 7.0**		**Minor or Slightly Positive – 5.4**		**Minor or Slightly Positive – 5.4**	

5.3 Indicative Cost

Indicative Cost has been considered as a separate criterion due to the expected variability across the options. Order of magnitude cost estimates have been prepared based on the feasibility designs prepared for the options and are presented in Table 5-2. The following assumptions are noted:

- The cost estimates are high-level in nature and subject to change with further information available in future stages.
- Commensurate with the high-level nature of the long-list sifting exercise, the impact scores for indicative cost have been determined based on an expected cost range for an option, rather than the absolute cost. This is considered appropriate for the comparison of options at this stage, and the costs will be developed to further detail for options which are progressed to the Stage 2 Project Appraisal Matrix for wider and more detailed assessments.
- The impact score range for the cost assessment considers a relative range of costs for the northbound options.
- Property acquisition costs have been based on valuation information provided by an external land valuer.

Table 5-2 Indicative cost assessment

Option	Indicative Cost	Score	Notes
Northbound Options			
NB-Option 1	Base Cost for SS-C plus €1.25 – 2.5 million	6	Low relative cost due to minor nature of works proposed (primarily off-line access roads)
NB-Option 1A	Base Cost for SS-C plus €1.25 – 2.5 million	6	Low relative cost due to minor nature of works proposed (primarily off-line access roads)
NB-Option 1B	Base Cost for SS-C plus < €1.25 million	7	Lowest relative cost due to minor nature of works proposed.
NB-Option 2	Base Cost for SS-C plus €5.0 – 6.25 million	3	Highest overall cost attributable to cost of Quill Road to Junction 9 connection (including associated land costs)
NB-Option 2A	Base Cost for SS-C plus €3.75 – 5.0 million	4	High overall cost attributable to cost of Quill Road to Junction 9 connection (including associated land costs)
NB Option 2B	Base Cost for SS-C plus €2.5 – 3.75 million	5	High overall cost attributable to cost of Quill Road to Junction 9 connection (including associated land costs). Lower cost relative to 2/2A given proposed re-use of Donnelly's Lane.

5.4 Safety

The N11/M11 BPIS project objectives include specific aims in respect of road safety, to deliver bus priority measures which are clearly delineated and understood by road users, and without adversely impacting on the safety of all road users.

The safety assessment has therefore considered the degree of compliance of the options with TII Publication DN-GEO-03087, including how the options have achieved a reduction in the number of conflict points, with the closure of intermediate junctions and/or major junction merges and diverges, contributing to improvements to safety. In addition, the assessment of options has considered the likely requirement for departures and the level of continuous bus priority achieved.

The following is noted in relation to the **Northbound** option assessments:

- Option 1 closes all intermediate junctions and accesses. No departures are required against DN-GEO-03087 in respect of junction type. The closure of the existing Quill Road junction without provision of a new link to Junction 9 (Glenview) can be expected to increase the volume of traffic using the existing sub-standard Donnelly's Lane and/or taking a significant detour to/from Junction 8 (Kilmacanogue).

  It is noted that the existing Donnelly's Lane currently caters for local traffic only and is substantially narrow and constrained in some sections. An increase in traffic along Donnelly's Lane can be expected to generate safety issues and a potential increased likelihood of collisions, which may offset safety improvements on the N11 mainline to a degree. This option is therefore considered to be minor or slightly positive with a score of 5.

- Option 1A closes all direct accesses between Junction 8 (Kilmacanogue) and Junction 9 (Glenview), however the retention of the Quill Road junction would result in an additional conflict point between buses and general traffic. A departure from standards is required for the retained junction. This option is therefore considered to be neutral with a score of 4.

- Option 1B closes all direct accesses between Junction 8 (Kilmacanogue) and Junction 9 (Glenview), however, the retention of the Quill Road and Moorepark junctions would create conflict points between buses and general traffic. A departure against TII Publication DN-GEO-03087 is required for the retained junctions. Furthermore, minimal spacing between the end of the Quill Road merge auxiliary lane and start of the Moorepark diverge auxiliary lane may result in hazardous weaving manoeuvres and in conjunction with the retention of these junctions, would result in an intermittent provision of bus priority. Option 1B is therefore considered to be moderately negative with a score of 2.

- Option 2 closes all intermediate junctions and accesses between Junction 8 (Kilmacanogue) and Junction 9 (Glenview) and therefore no departures in this regard are required. The construction of a new link road between Junction 9 (Glenview) and Quill Road would also improve safety as traffic would not be diverted north to Junction 8 (Kilmacanogue) and an increase in traffic on Donnelly's Lane should be avoided. Option 2 was therefore considered to be major or highly positive with a score of 7.

- Similar to Option 2, Option 2A proposes the closure of all northbound accesses and minor junctions between Junction 9 (Glenview) and Junction 8 (Kilmacanogue). However, the Moorepark merge and diverge are retained, thus requiring a departure against TII Publication DN-GEO-03087 and creating two conflict points between buses and general traffic. Option 2A also benefits from the same connection between Junction 9 (Glenview) and Quill Road, ensuring a safer connection from Quill Road to the N11 via a primary junction. The option was therefore considered to be moderately positive with a score of 6.

- Option 2B is as per Option 2, however an on-line upgrade of the cross section of Donnelly's Lane is proposed as the connection to Junction 9 (Glenview). Along the tightly constrained Donnelly's Lane, it may not be feasible to achieve the design geometric and cross-section standard without significant impacts to frontage properties and other constraints. It is therefore likely that some safety issues will remain on an upgraded Donnelly's Lane, in particular given the presence of a number of residential accesses along the route. Furthermore, the retention of the Moorepark merge and diverge creates two conflict points between buses using the hard shoulder and general traffic merging/diverging with the mainline. Overall, there are a number of negative impacts which may offset the safety improvements to the N11 as a result of access closures. Option 2B is therefore considered to be neutral with a score of 4.

5.5 Environment

5.5.1 Circular Economy Impact

The degree of re-use of existing infrastructure has been considered in the options assessment. The following is noted in relation to the **Northbound** option assessments:

- Options 1, 1A, 1B and 2B all reuse significant amounts of existing pavement at Moorepark and Quill Road. New proposed link roads are relatively short with little new construction of pavement. As such, all four options were considered minor or slightly positive with a score of 5.
- Options 2 and 2A require additional green field space to construct the new link road between Junction 9 and Quill Road. As such, both options were considered neutral with a score of 4.

5.5.2 Impacts to Community

Impacts to community are assessed in consideration of the expected impacts of junction closures on existing businesses and nearby residents.

The following is noted in relation to the **Northbound** option assessments:

- Option 1 proposes new access roads connecting Moorepark and Quill Road and between Kilmurray Grove and Quill Road. These new links will provide a safer access to serve residential communities by removing high-speed and more hazardous accesses directly to the N11 dual carriageway. It is also considered that the provision of these access roads will facilitate enhanced pedestrian connectivity to these communities, where currently the only option for pedestrian access is via the N11. The proposed closure of the Quill Road junction without any alternative connection to Junction 9 may result in adverse impacts on local residents, where traffic accessing the N11 is forced to either divert northwards towards Junction 8 (Kilmacanogue) or southwards to Junction 9 (Glenview) via the privately owned Donnelly's Lane. Overall, this option is considered to be neutral with a score of 4.
- Option 1A is as per Option 1, however with the retention of the Quill Road junction. This would avoid the adverse impacts associated with the closure of the junction, as re-routing of traffic through residential communities along Quill Road and Donnelly's Lane as per Option 1 would not occur. The option is therefore considered to be moderately positive with a score of 6.
- Option 1B is as per Option 1A, however with the retention of Moorepark merge and diverge, there is no proposed access road connecting Moorepark and Quill Road. Consequently, the community of Moorepark would remain somewhat isolated with the N11 dual carriageway providing the sole point of access for vehicles and pedestrians/cyclists alike. This option is therefore considered to be minor or slightly positive with a score of 5.
- Similar to Option 1, Option 2 proposes the closure of all accesses and minor junctions along the northbound carriageway of the N11. Additionally, a new link road is proposed between Junction 9 (Glenview) and Quill Road to facilitate diverted traffic due to the proposed closure of the Quill Road junction. Therefore, the option is considered to be moderately positive with a score of 6.
- Option 2A proposes the retention of the Moorepark merge and diverge. As such, there is no need to construct a new access road between Moorepark and Quill Road. Consequently, the community of Moorepark would remain somewhat isolated with the N11 dual carriageway providing the sole point of access for vehicles and pedestrians/cyclists alike. This option is therefore considered to be minor or slightly positive with a score of 5.
- Option 2B is as per Option 2A with the exception of a proposed on-line upgrade of Donnelly's Lane instead of a new partially off-line link road to Junction 9 (Glenview). This upgrade in cross-section and alignment would cater for additional traffic resulting from the closure of the Quill Road junction. There may however be significant impacts to residents living along the lane including acquisitions of land and/or property to enable the wider cross-section to be provided.

Furthermore, an upgrade of the link to carry additional traffic may negatively impact the residential community along Donnelly's Lane, which currently functions as a private lane. As such, this option is considered minor or slightly positive with a score of 5.

5.5.3 Impacts on Environmental Constraints

Impacts on environmental constraints are assessed in consideration of the extent of widening and/or off-line road construction works required, and the degree to which the options could impact on identified environmental constraints.

The following is noted in relation to the **Northbound** options assessments:

- The proposed access road between Moorepark and Quill Road would likely impact on Kilmacanogue Marsh pNHA – which would constitute a highly negative impact on an ecological constraint of importance at international level. Furthermore, the proposed access road would potentially cross a stream which provides a hydrological connection between the pNHA and Alluvial Woodland (Annex 1) in Kilmacanogue Marsh pNHA. The proposed Moorepark Access Road forms a component of Options 1, 1A and 2, and further assessments in future stages would be necessary to fully capture the potential impacts to the marsh and to identify any mitigation measures which could limit or remove the impact. At this stage however, the three options are considered major or highly negative with a score of 1.
- Option 1B is not expected to have a significant impact on environmental constraints and is therefore considered to be neutral with a score of 4.
- Options 2A and 2B pass adjacent to an ecclesiastical site, comprising a church, graveyard, ecclesiastical enclosure and building (RMP WI008-013001-4). The site is further protected with a Preservation Order and as such is considered to be a site of national significance. Although the exact nature and extent of archaeological remains is unknown, impacts may be significant in nature. Accordingly, both options are considered to be moderately negative with a score of 2.

5.6 Accessibility and Social Inclusion

For the accessibility and social inclusion assessment, it is noted that the options are not geographically distinct, hence the positive impacts of bus priority measures proposed as part of each option will all serve the same geographical area. Considering this, the accessibility and social inclusion assessment and scoring has been based on the qualitative assessment for bus priority as outlined in Section 5.2.2.

5.7 Integration

5.7.1 Integration with N11/M11 J4-J14 Scheme

It is a key objective of the N11/M11 BPIS to deliver a practicable interim transport solution which does not introduce significant constraint on the subsequent development of the N11/M11 Junction 4 to Junction 14 Improvement Scheme (N11/M11 J4-J14 Scheme). The integration assessment has therefore considered the degree to which each option could be readily integrated into the Phase 2 preferred option for the future N11/M11 J4-J14 Scheme.

The following is noted in relation to the **Northbound** option assessments:

- Option 1 proposes the closure of all northbound intermediate junctions and accesses between Junction 8 (Kilmacanogue) and Junction 9 (Glenview). This aligns with the N11/M11 J4-J14 Scheme preferred option and the option is therefore considered to be moderately positive with a score of 6.
- Option 1A proposes to close direct accesses between Junction 8 and Junction 9, however the retention of Quill Road junction does not align with the N11/M11 J4-J14 Scheme preferred option and therefore Option 1A is considered to be minor or slightly positive with a score of 5. It should

be noted however that the retention of the Quill Road junction would not introduce a significant constraint on the subsequent development of the N11/M11 J4-J14 Scheme.

- Option 1B proposes to close direct accesses between Junction 8 and Junction 9, however the retention of both the Moorepark merge and diverge and the Quill Road junction is not aligned with the N11/M11 J4-J14 Scheme preferred option. Option 1B is therefore considered to be neutral with a score of 4.
- Option 2 proposes the closure of all intermediate junctions and accesses as well as a new link road between Junction 9 and Quill Road. This is fully aligned with the N11/M11 J4-J14 Scheme preferred option and thus Option 2 is considered to be major or highly positive with a score of 7.
- Option 2A proposes the closure of all direct accesses between Junction 8 and Junction 9 and the Quill Road junction. A new link road between Junction 9 and Quill Road is also proposed, however the retention of the Moorepark merge and diverge is not aligned with the N11/M11 J4-J14 Scheme and therefore the option is considered to be minor or slightly positive with a score of 5. It should be noted however that the retention of the Quill Road junction would not introduce a significant constraint on the subsequent development of the N11/M11 J4-J14 Scheme.
- Option 2B proposes the closure of all direct accesses between Junction 8 and Junction 9 and Quill Road junction, however an upgrade of the existing Donnelly's Lane is proposed in place of a new link road between Junction 9 and Quill Road. This is not aligned with the N11/M11 J4-J14 Scheme preferred option and may give rise to a level of abortive works if this link road were not to be incorporated in any future N11/M11 J4-J14 Scheme. Overall, this option is considered to be neutral with a score of 4.

5.7.2 Alignment with wider government policy

All options aim to deliver an improved public transport corridor that will encourage and support investment, tourism and employment and support a balance of alternative modes within the study area. While the degree to which each option delivers the corridor may vary, the intention to align with government policy is not seen as a differentiating factor at this stage. Considering this, all options have been considered as a minor or slightly positive with a score of 5.

5.8 Physical Activity

One of the key aspects of the revised design basis for the Stage 2 assessments has been to provide bus priority measures only where they are safe and do not have an adverse impact on any road users. In order to achieve this, Active Travel facilities that are segregated from the mainline (on-line / off-line) have been considered within the option development.

An initial assessment of options was undertaken, which determined that Active Travel provision was better suited on the eastern side of the N11 due to better connectivity with other Wicklow County Council planned facilities, in particular the Kilmacanogue to Southern Cross Greenway Scheme.

Considering this, it has been assumed that the Active Travel facility is provided as part of the southbound option, but as a two-way facility which would serve both northbound and southbound active travel trips. As this is not a differentiator between the options, all northbound options have been considered to be moderately positive with a score of 6.

5.9 Summary

5.9.1 Northbound Options

A summary of the total weighted score for northbound options is provided in Table 5-3.

Table 5-3 Total weighted score and recommendations (northbound options)

Criterion	Option 1	Option 1A	Option 1B	Option 2	Option 2A	Option 2B
Economy (/100)	86	77	51	79	60	53
Cost (/200)	171	171	200	86	114	143
Safety (/200)	143	114	57	200	171	114
Environment (/100)	48	57	67	52	52	57
Accessibility & Social Inclusion (/100)	100	83	60	100	77	77
Integration (/100)	79	71	64	86	71	64
Physical Activity (/100)	86	86	86	86	86	86
Total Weighted Score	**712**	**660**	**585**	**688**	**632**	**594**
Recommendation	**Progressed**	**Progressed**	**Discounted**	**Progressed**	**Progressed**	**Progressed**

The following recommendations are noted in relation to the **northbound** options:

- Option 1 achieved the highest score in the assessment. The benefits of junction closures are expected to result in significant safety improvements and full bus priority between Junction 8 (Kilmacanogue) and Junction 9 (Glenview) and this has been reflected in the assessments. Considering this, it is recommended that Option 1 is progressed to the Stage 2A appraisal.
- Option 1A achieved the third highest score in the assessment. The retention of the Quill Road junction reduces the level of bus priority the option achieves, and adds a conflict point between buses and general road users, thus impacting the safety of the option. Notwithstanding this, the safety impacts of retaining the Quill Road junction are not expected to be as significant as may be the case with other junctions, as sight distance to the junction is currently adequate and traffic volumes using the junction are relatively low. As such, it is proposed to progress the option for further assessment in Stage 2A.
- Option 1B is a clear outlier from a safety perspective and achieved the lowest score in the assessment. This can be attributed to a number of factors including, substantial safety issues and lack of bus priority resulting from the retention of intermediate junctions, and poor integration with the N11/M11 J4-J14 Scheme. The approach of retaining the existing Quill Road junction and Moorepark merge/diverge requires departures against TII Publication DN-GEO-03087 and creates additional conflict points between buses and general traffic.

  Additionally, the retention of these junctions negatively impacts the extent of bus priority which can be provided, which may result in a scheme that provides little benefit in terms of bus journey time savings and offers limited advantages to public transport over private cars.

  Considering the above, it is recommended that Option 1B is discounted.
- Option 2 achieved the second highest overall score in the assessment with the expected additional cost being the primary driver in it scoring less than Option 1. The option closes all intermediate junctions and accesses as well as providing a new link road between Junction 9 (Glenview) and Quill Road. These closures allow the option to achieve full bus priority between Junction 8 (Kilmacanogue) and Junction 9 (Glenview) and significantly enhance the safety of road users by

reducing conflict points. However, Option 2 is expected to be the most expensive option. This is largely due to a new link road between Junction 9 and Quill Road and new access roads between Moorepark and Quill Road and between Kilmurray Grove and Quill Road. Notwithstanding this, it is recommended that Option 1 is progressed to Stage 2A for further detailed assessments.

- Option 2A achieved the third lowest score. The retention of the Moorepark merge and diverge reduces the level of bus priority the option can provide as well as introducing two conflict points between buses and general road users. The retention of the Moorepark merge and diverge however means Option 2A avoids potential impact on the Great Sugar Loaf pNHA and Kilmacanogue Marsh pNHA, as a new access road between Moorepark and Quill Road is not required. As such, it is proposed to take the option forward for further assessment during the Stage 2A.
- Option 2B achieved the second lowest score. The retention of the Moorpark merge and diverge as well as an upgrade of the existing Donnelly's Lane mean that safety issues and conflict points remain in place. Nonetheless, it is proposed to progress the option to Stage 2A to further assess the feasibility of upgrading Donnelly's Lane in place of the provision of a new link road between Junction 9 (Glenview) and Quill Road.

5.10 Outcomes of Sifting

A summary of the initial option/alternative sifting is presented in Table 5-4.

Table 5-4 Summary of long-list sifting outcomes

Option / Alternative	Name	Outcome of Sifting Exercise	
Junction 8-9 Southbound			
Option 1	Minor Junction Closures	Progress option and assess in further detail as part of Stage 2A	✓
Junction 8-9 Northbound			
Option 1	Minor Junction Closures	Progress option and assess in further detail as part of Stage 2A	✓
Option 1A	Minor Junction Closures – Variation A	Progress option and assess in further detail as part of Stage 2A	✓
Option 1B	Minor Junction Closures – Variation B	Option Discounted	×
Option 2	Junction 9 Connection to Quill Road Link Road	Progress option and assess in further detail as part of Stage 2A	✓
Option 2A	Junction 9 Connection to Quill Road Link Road – Variation A	Progress option and assess in further detail as part of Stage 2A	✓
Option 2B	Junction 9 Connection to Quill Road Link Road – Variation B	Progress option and assess in further detail as part of Stage 2A	✓

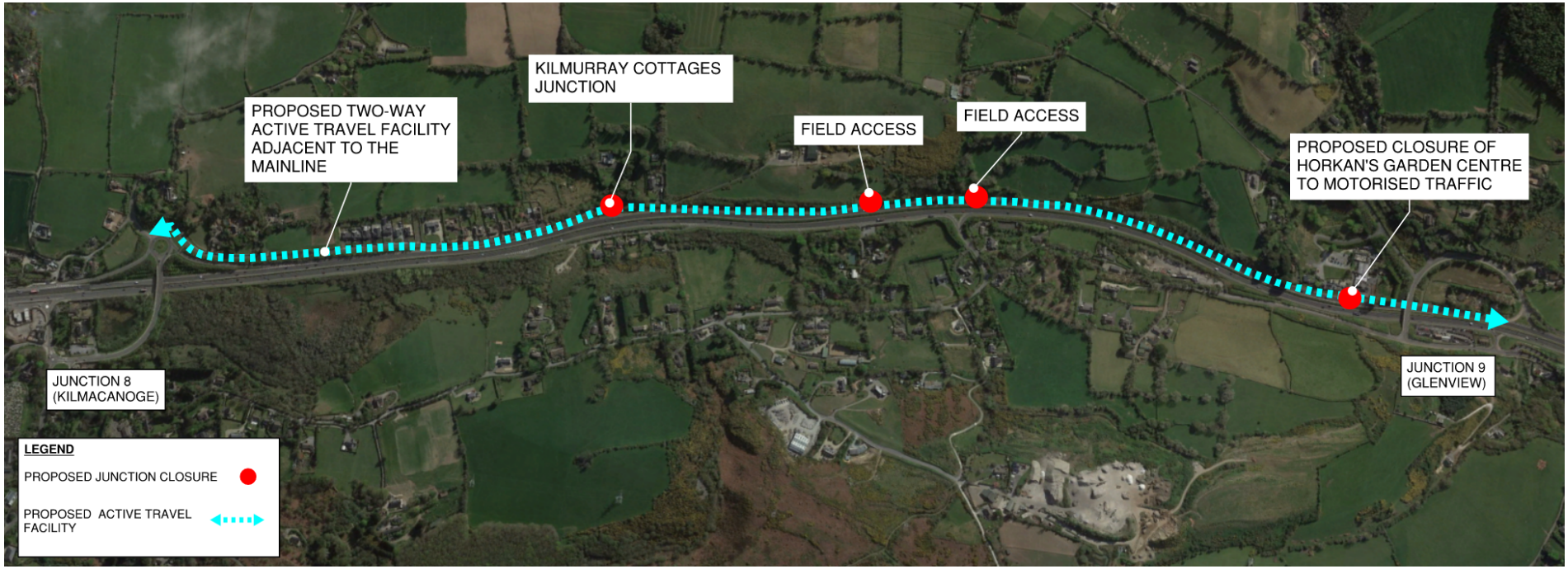
6. Conclusions and Recommendations

From the initial sifting exercise, it is evident that Option 1B failed to respond positively to the project objectives due to the retention of intermediate junctions. All other options have the potential to fulfil some or many objectives and / or require further investigations to be undertaken before this can be determined – these have been progressed to the Stage 2A appraisal.

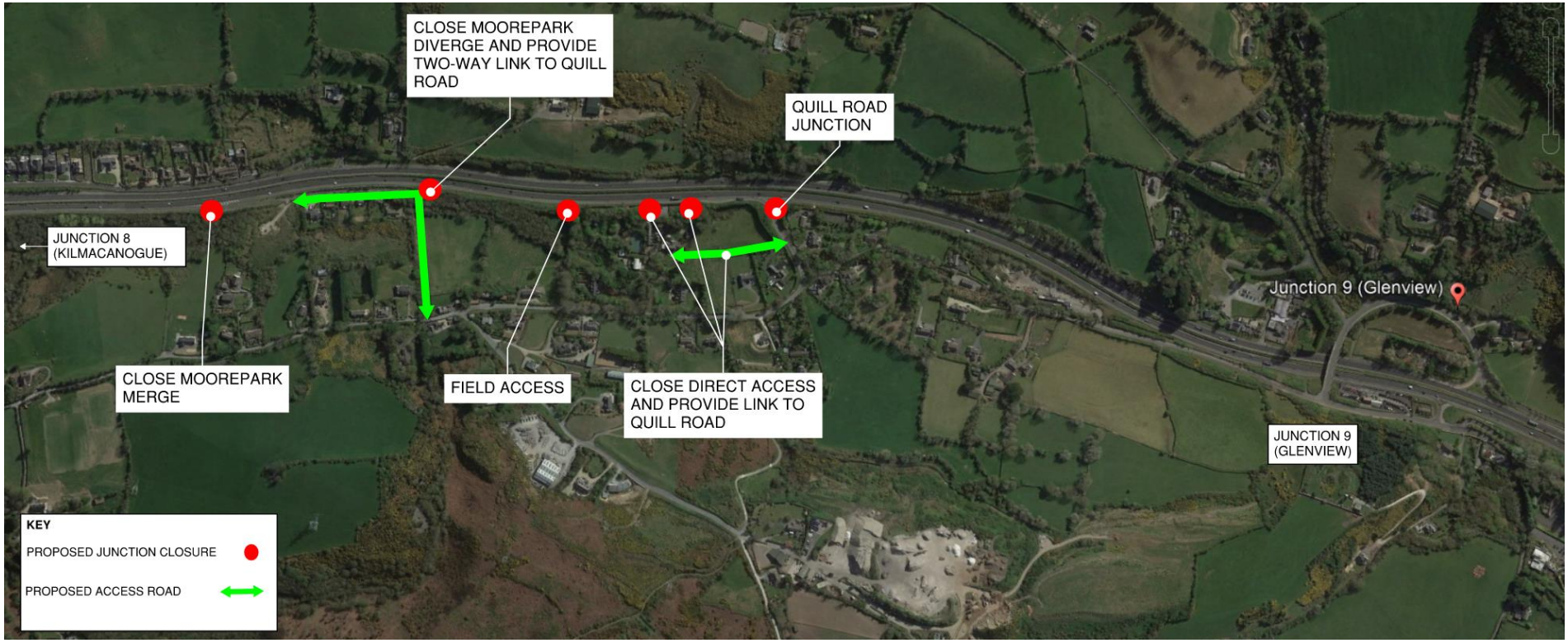
Appendix A

Option Schematics

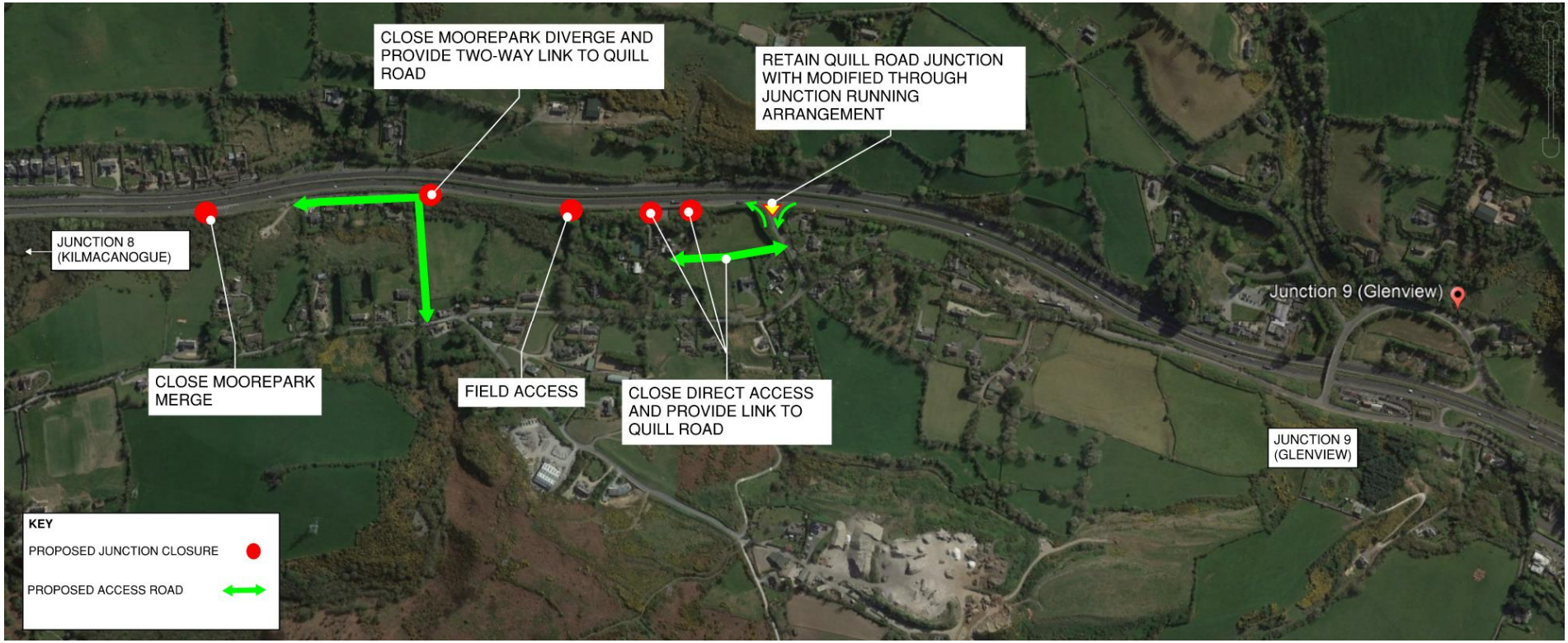
Southbound Options	Intervention Proposed at Junction/Access:				Active Travel Provision
	Kilmurry Cottages Left in-Left out junction	Field Access 1	Field Access 2	Horkan's Garden Centre	
Option 1 (Minor Junction Closures)	Existing access was closed in 2021. No further intervention proposed by BPIS	Close Permanently (Alternative Access via L5530)	Close Permanently (Alternative access via Foxborough Lane)	Close Permanently (Alternative access to Foxborough Lane retained)	On-line off-road between Junction 8 (Kilmacanogue) and Junction 9 (Glenview)
Access Open (✓) / Closed (✖)	✖	✖	✖	✖	N/A



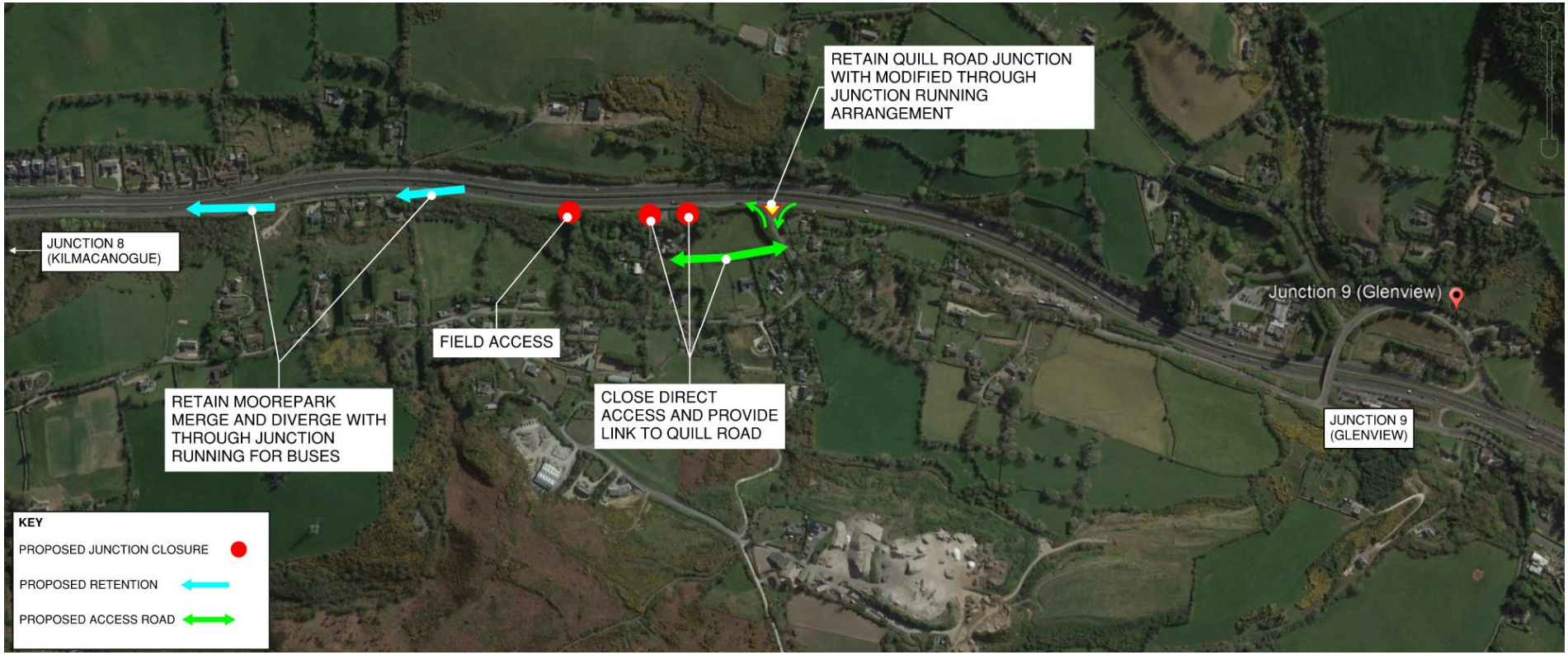
Northbound Options	Intervention Proposed at Junction/Access:				
	Quill Road Left in-Left out junction	Direct Access 1	Direct Access 2	Field Access 1	Moorepark Service Road
Option 1 (Minor Junction Closures)	Close Permanently (Cul de Sac)	Close Permanently (New Access via Quill Road)	Close Permanently (New access via Quill Road)	Close Permanently	Close Permanently (New Access via new connection to Quill Road)
Access Open (✓) / Closed (✖)	✖	✖	✖	✖	✖



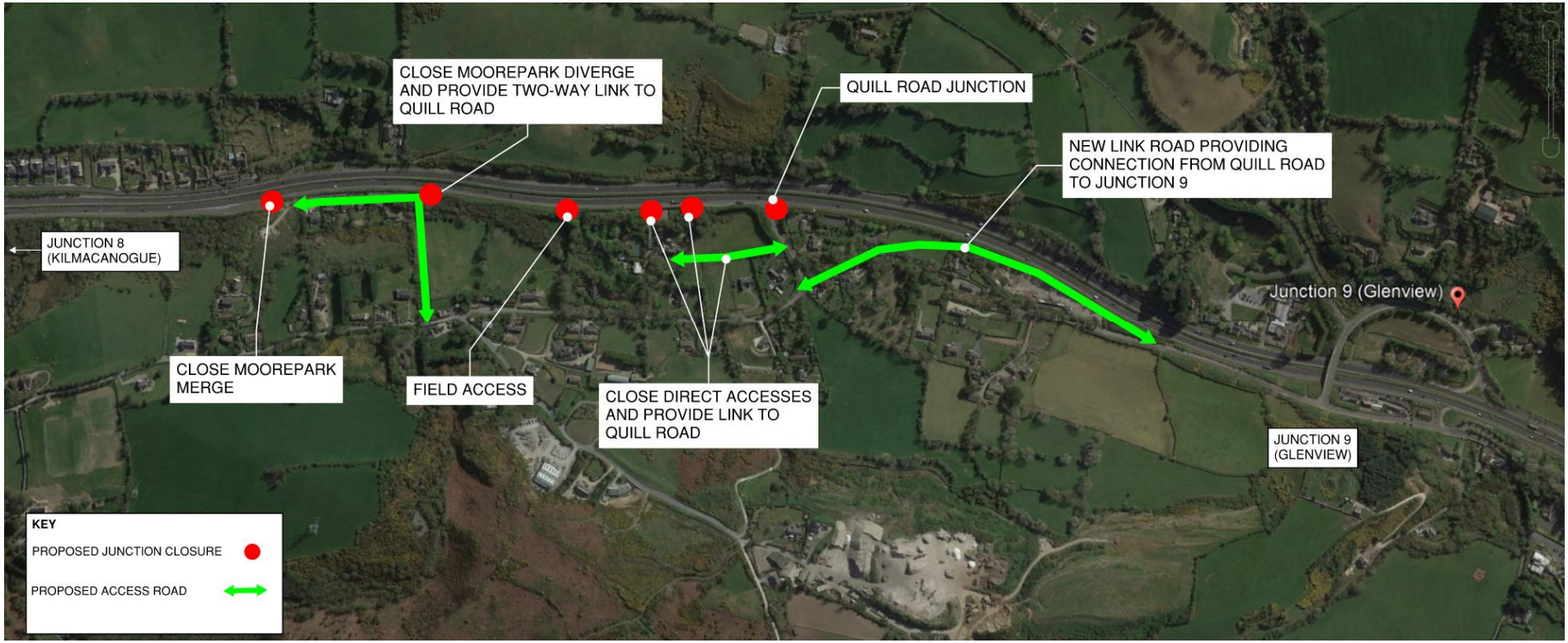
Northbound Options	Intervention Proposed at Junction/Access:				
	Quill Road Left in-Left out junction	Direct Access 1	Direct Access 2	Field Access 1	Moorepark Service Road
Option 1A (Minor Junction Closures – Variation A)	Retain left in – left out junction and apply TJR (Departure required)	Close Permanently (New Access via Quill Road)	Close Permanently (New Access via Quill Road	Close Permanently (Alternative Access via Quill Road)	Close Permanently (Alternative access via new connection to Quill Road)
Access Open (✓) / Closed (✖)	✓	✖	✖	✖	✖



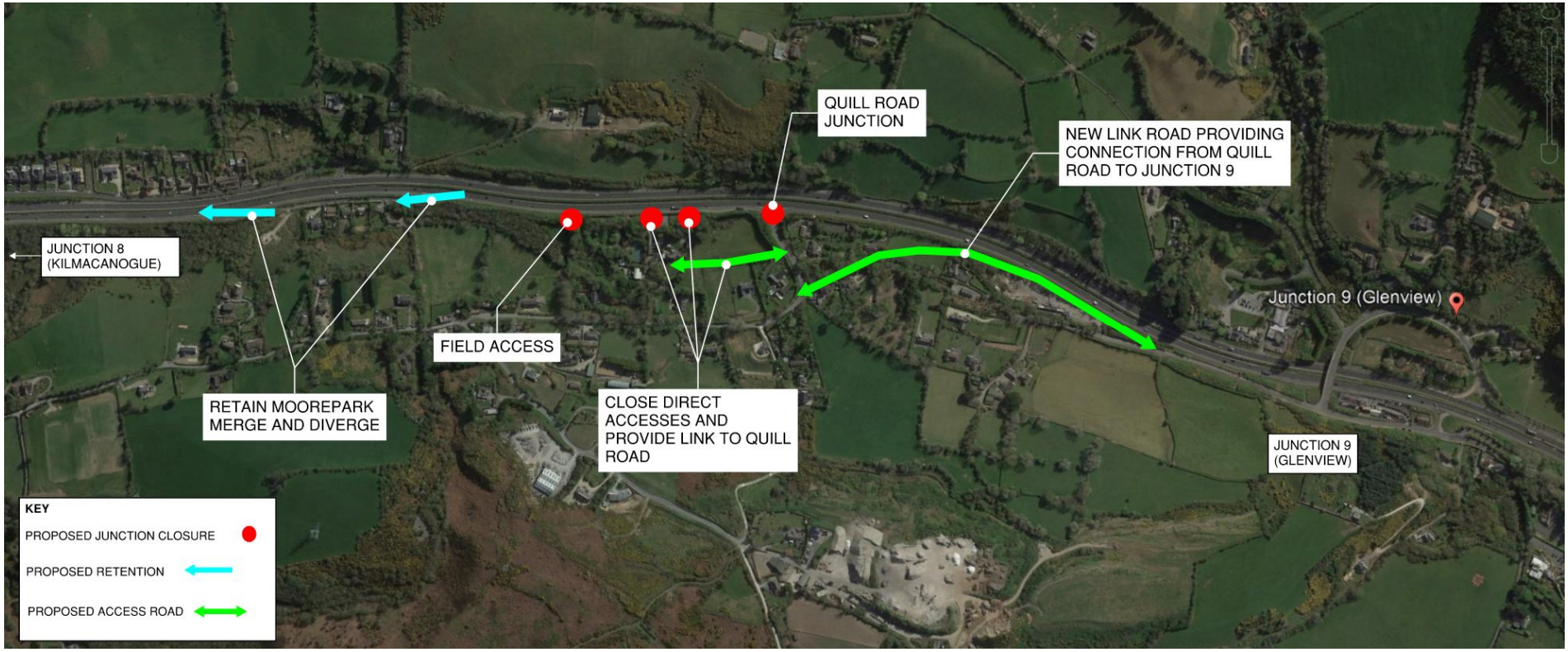
Northbound Options	Intervention Proposed at Junction/Access:				
	Quill Road Left in-Left out junction	Direct Access 1	Direct Access 2	Field Access 1	Moorepark Service Road
Option 1B (Individual Junction Closures – Variation B)	Retain left in – left out junction and apply TJR (Departure required)	Close Permanently (New Access via Quill Road)	Close Permanently (New Access via Quill Road	Close Permanently (Alternative Access to Quill Road is available)	Retain Junction and apply TJR (Departure Required)
Access Open (✓) / Closed (✖)	✓	✖	✖	✖	✓



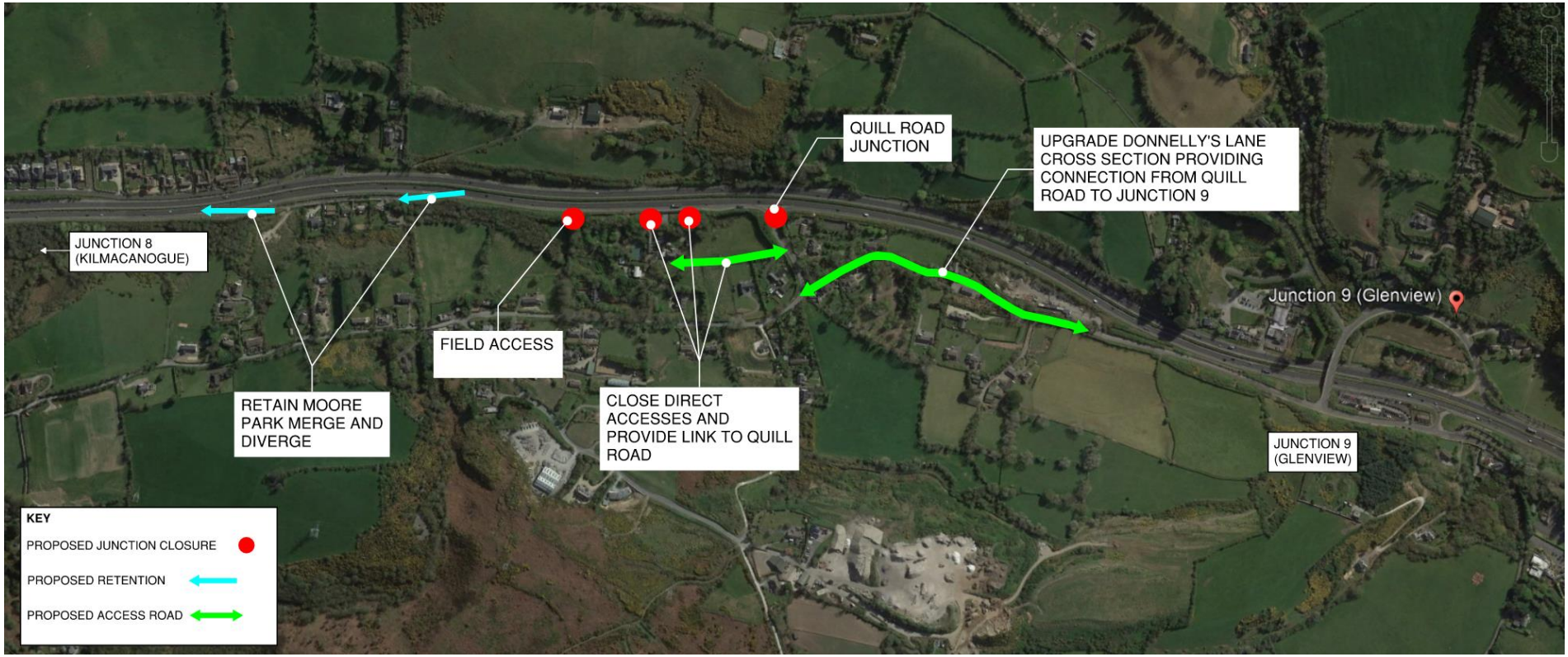
Northbound Options	Intervention Proposed at Junction/Access:				
	Quill Road Left in-Left out junction	Direct Access 1	Direct Access 2	Field Access 1	Moorepark Service Road
Option 2 (Junction 9 Connection to Quill Road)	Close Permanently (New Access via Quill Road / J9 Link Road)	Close Permanently (New Access via Quill Road / J9 link Road)	Close Permanently (New Access via Quill Road / J9 Link Road)	Close Permanently (Alternative Access to Quill Road is available)	Close Permanently (New Access via New Connection to Quill Road)
Access Open (✓) / Closed (✖)	✖	✖	✖	✖	✖



Northbound Options	Intervention Proposed at Junction/Access:				
	Quill Road Left in-Left out junction	Direct Access 1	Direct Access 2	Field Access 1	Moorepark Service Road
Option 2A (Junction 9 Connection to Quill Road – Variation A)	Close Permanently (New Access via Quill Road / J9 Link Road)	Close Permanently (New Access via Quill Road / J9 Link Road)	Close Permanently (New Access via Quill Road / J9 Link Road)	Close Permanently (Alternative Access via Quill Road)	Retain left in – left out junction and apply TJR (Departure required)
Access Open (✓) / Closed (✖)	✖	✖	✖	✖	✓



Northbound Options	Intervention Proposed at Junction/Access:				
	Quill Road Left in-Left out junction	Direct Access 1	Direct Access 2	Field Access 1	Moorepark Service Road
Option 2B (Junction 9 Connection to Quill Road – Variation B	Close Permanently (New Access via Quill Road / upgraded Donnelly's Lane)	Close Permanently (New Access via Quill Road / Donnelly's Lane)	Close Permanently (New Access via Quill Road / Donnelly's Lane)	Close Permanently (Alternative Access via Quill Road)	Retain left in – left out junction and apply TJR (Departure required)
Access Open (✓) / Closed (✖)	✖	✖	✖	✖	✓



Appendix B

Long List Sifting Matrix

Assessment Criteria	Project Objectives	Key Performance Indicators (KPI)	Option 1 (Minor Junction Closures)		Option 1A (Minor Junction Closures – Variation A)		Option 1B (Minor Junction Closures – Variation B)		Option 2 (Junction 9 Connection to Quill Road)		Option 2A (Junction 9 Connection to Quill Road – Variation A)		Option 2B (Junction 9 Connection to Quill Road – Variation B)	
			•All intermediate junctions/accesses closed • New link provided connecting Moorpark to Quill Road • New link provided connecting Kilmurray Grove to Quill Road		• N11 Quill Road Junction retained •All other intermediate junctions/accesses closed • New link provided connecting Moorpark to Quill Road • New link provided connecting Kilmurray Grove to Quill Road		• N11 Quill Road Junction retained • N11 Moorepark Junction retained •All other intermediate junctions/accesses closed • New link provided connecting Kilmurray Grove to Quill Road		•All intermediate junctions/accesses closed • New link provided connecting Moorpark to Quill Road • New link provided connecting Kilmurray Grove to Quill Road • New link provided connecting Quill Road to Junction 9		• N11 Moorepark Junction retained •All other intermediate junctions/accesses closed • New link provided connecting Kilmurray Grove to Quill Road • New link provided connecting Quill Road to Junction 9		• N11 Moorepark Junction retained •All other intermediate junctions/accesses closed • New link provided connecting Kilmurray Grove to Quill Road • New link provided connecting Quill Road to Junction 9 (via Donnelly's Lane)	
			Qualitative Assessment	Score (1-7)	Qualitative Assessment	Score (1-7)	Qualitative Assessment	Score (1-7)	Qualitative Assessment	Score (1-7)	Qualitative Assessment	Score (1-7)	Qualitative Assessment	Score (1-7)
Economy	• Deliver a practicable interim transport solution capable of delivering benefits required in the short/medium term.	**Constructability:** • Extent of enabling/corrective works to deliver effective bus priority • Extent of demolition/disruption during construction • Extent of potential realignment of existing N11/M11 mainline	• Construction limited to offline links between Moorepark - Quill road and between Kilmurray Grove Quill Road. • Minimal additional construction expected from closure of intermediate junctions and accesses • No realignment of mainline expected	5	• Construction limited to offline links between Moorepark - Quill road and between Kilmurray Grove Quill Road. • Minimal additional construction expected from closure of intermediate junctions and accesses • No realignment of mainline expected	5	• Additional construction works for TJR merge and diverge arrangments at Moorepark will be adjacent to mainline and may require additional temporary traffic management measures	3	• New additional construction is all off-line apart from tie in of new link road to existing Donnelly's Lane where temporary traffic management measures likely required.	4	• Additional construction works for TJR merge and diverge arrangments at Moorepark will be adjacent to mainline and may require additional temporary traffic management measures • New tie in of link road to Donnelly's Lane may require some additional temporary traffic management	3	• Upgrade of existing Donnelly's Lane will require additonal and more significant traffic management measures. • Additonal construction works for TJR merge and diverge arrangments at Moorepark will be adjacent to mainline and may require additional temporary traffic management measures	2
	• Provide the infrastructure to increase the people carrying capacity of the N11/M11 between Loughlinstown Roundabout and Junction 9 (Glenview). • Generate positive economic benefits to public transport users by: - Reducing bus journey times; and - Improving bus journey time reliability	**Bus Priority:** • Effectiveness of bus priority at key delay points	• Full bus priority achieved through Sub-Scheme C as a result of closure of all intermediate junctions and accesses	7.0	• Good priority achieved at intermediate junction closures • Reduced priority at Quill Road junction	5.8	• Good priority achieved at intermediate junction closures • Reduced priority at Quill Road and Moorepark junctions	4.2	• Full bus priority achieved through Sub-Scheme C as a result of closure of all intermediate junctions and accesses	7.0	• Good priority achieved at intermediate junction closures • Reduced priority at Moorepark junction	5.4	• Good priority achieved at intermediate junction closures • Reduced priority at Moorepark junction	5.4
	Sum of Impact Scores		**Total**	**12.0**	**Total**	**10.8**	**Total**	**7.2**	**Total**	**11.0**	**Total**	**8.4**	**Total**	**7.4**
	Economy Weighted Score (out of 100)		**Total**	**86**	**Total**	**77**	**Total**	**51**	**Total**	**79**	**Total**	**60**	**Total**	**53**
Cost	• Cost Range NB: < 1.25 million = 7 1.25 - 2.5 million = 6 2.5 - 3.75 million = 5 3.75 - 5 million = 4 5 - 6.25 million = 3 6.25 - 7.5 million = 2 > 7.5 million = 1		• Base Cost for SS-C plus €1.25 – 2.5 million	6	• Base Cost for SS-C plus €1.25 – 2.5 million	6	• Base Cost for SS-C plus < €1.25 million	7	• Base Cost for SS-C plus €5.0 – 6.25 million	3	• Base Cost for SS-C plus €3.75 – 5.0 million	4	• Base Cost for SS-C plus €2.5 – 3.75 million	5
	Sum of Impact Scores		**Total**	**6**	**Total**	**6**	**Total**	**7**	**Total**	**3**	**Total**	**4**	**Total**	**5**
	Cost Weighted Score (out of 200)		**Total**	**171**	**Total**	**171**	**Total**	**200**	**Total**	**86**	**Total**	**114**	**Total**	**143**
Safety	• To deliver bus priority measures which are clearly delineated and understood by general road users and bus drivers in the environment of an inter-urban route • Ensure bus priority can be delivered without adversely impacting on safety of all road users	• Compliance with TII Publication DN-GEO-03087 – - Junction strategy - Requirement for departures (if known), - No. of conflict points retained - Overall continuity of bus facility and junction • Compliance with Draft TII IAN. Provision of safe alternative facility for active travel.	• All intermediate junctions and accesses closed to the N11 mainline • Safety impact due to traffic diverting to unsuitable routes (Quill Road north & Donnelly's Lane). No suitable route for HGVs accessing quarry.	5	• All intermediate junctions and acesses closed to mainline apart from Quill Road which is retained (thus becoming a conflict point between buses and general traffic)	4	• Moorepark merge/diverge and Quill Road junction retained creating additional conflict points between buses and general traffic	2	• New Donnelly's Lane link road to replace existing narrow Donnelly's Lane and provide improved connection to Junction 9 • All intermediate junctions and accesses closed to the mainline	7	• New Donnelly's Lane link road to replace existing narrow Donnelly's Lane and provide improved connection to Junction 9 • Moorepark merge/diverge and Quill Road junction retained creating additional conflict points between buses and general traffic	6	• Moorepark merge/diverge and Quill Road junction retained creating additional conflict points between buses and general traffic • Safety impact due to traffic diverting to unsuitable routes (Quill Road north & Donnelly's Lane).	4
	Sum of Impact Scores		**Total**	**5**	**Total**	**4**	**Total**	**2**	**Total**	**7**	**Total**	**6**	**Total**	**4**
	Safety Weighted Score (out of 200)		**Total**	**143**	**Total**	**114**	**Total**	**57**	**Total**	**200**	**Total**	**171**	**Total**	**114**
Environment	• To provide for more sustainable transport solution, supporting balance of alternative modes and enabling a reduction in private car dependency and reducing carbon intensity of travel	• Assess circular economy impact – degree of re-use of existing asset.	• Tie in to existing Moorepark parallel road reuses existing pavement • New links are relatively short with narrow cross section (4m pavement width)	5	• Tie in to existing Moorepark parallel road reuses existing pavement • New links are relatively short with narrow cross section (4m pavement width)	5	• Tie in to existing Moorepark parallel road reuses existing pavement • New link is relatively short with narrow cross section (4m pavement width) • No need for new pavement between Moorepark and Quill road	5	• Tie in to existing Moorepark parallel road reuses existing pavement • New links are relatively short with narrow cross section (4m pavement width) • Greenfield space needed for construction of new Donnelly's Lane link road	4	• Tie in to existing Moorepark parallel road reuses existing pavement • New links are relatively short with narrow cross section (4m pavement width) • Greenfield space needed for construction of new Donnelly's Lane link road	4	• Reuse of existing Donnelly's Lane pavement space	5
		• Impacts to community	• New link from Moorepark to Quill Road and from Kilmurray grove to Quill Road will result in increased permeability and allow pedestrian travel between residences and surrounding area • Closure of Quill Road junction without an upgrade of Donnelly's Lane will mean: (1) A significant additional volume of traffic using the existing narrow Donnelly's Lane (Max. ~2.6m wide in places); and/or (2) Extensive diversions north to Junction 8 and Kilmacanogue village. Either scenario would have moderate adverse impacts on local residents/businesess	4	• New link from Moorepark to Quill Road and from Kilmurray grove to Quill Road will result in increased permeability and allow pedestrian travel between residences and surrounding area	6	• New link from Kilmurray grove to Quill Road will result in increased permeability and allow pedestrian travel between residences and surrounding area • Moorepark would remain somewhat isolated with the N11 dual providing the sole point of access for vehicles and pedestrians/cyclists alike	5	• New link from Moorepark to Quill Road and from Kilmurray grove to Quill Road will result in increased permeability and allow pedestrian travel between residences and surrounding area	6	• New link from Kilmurray grove to Quill Road will result in increased permeability and allow pedestrian travel between residences and surrounding area • Moorepark would remain somewhat isolated with the N11 dual providing the sole point of access for vehicles and pedestrians/cyclists alike	5	• New link from Kilmurray grove to Quill Road will result in increased permeability and allow pedestrian travel between residences and surrounding area • Moorepark would remain somewhat isolated with the N11 dual providing the sole point of access for vehicles and pedestrians/cyclists alike • Assumed that upgraded Donnellys Lane would facilitate any additional traffic resulting from closure of Quill Road	5
		• Impact on environmental constraints	• Proposed access road between Moorepark and Quill Road would likely impact on Kilmacanogue Marsh pNHA	1	• Proposed access road between Moorepark and Quill Road would likely impact on Kilmacanogue Marsh pNHA	1	• Not expected to have a significant impact on environmental constraints	4	• Proposed access road between Moorepark and Quill Road would likely impact on Kilmacanogue Marsh pNHA	1	• Potential environmental impact to an ecclesiastical site, comprising a church, graveyard, ecclesiastical enclosure and building (RMP WI008-013001-4).	2	• Potential environmental impact to an ecclesiastical site, comprising a church, graveyard, ecclesiastical enclosure and building (RMP WI008-013001-4).	2
	Sum of Impact Scores		**Total**	**10**	**Total**	**12**	**Total**	**14**	**Total**	**11**	**Total**	**11**	**Total**	**12**
	Cost Weighted Score (out of 100)		**Total**	**48**	**Total**	**57**	**Total**	**67**	**Total**	**52**	**Total**	**52**	**Total**	**57**
Accessibility and Social Inclusion	•To increase bus patronage along the N11/M11 corridor and enable sustainable travel to provide a faster and more reliable choice •To support improved access to the GDA for all transport users along the N11/M11 corridor	• Extent of bus priority achieved. Effective provision of bus priority at key delay points on the network	• Full bus priority achieved through Sub-Scheme C as a result of closure of all intermediate junctions and accesses	7.0	• Good priority achieved at intermediate junction closures • Reduced priority at Quill Road junction	5.8	• Good priority achieved at intermediate junction closures • Reduced priority at Quill Road and Moorepark junctions	4.2	• Full bus priority achieved through Sub-Scheme C as a result of closure of all intermediate junctions and accesses	7.0	• Good priority achieved at intermediate junction closures • Reduced priority at Moorepark junction	5.4	• Good priority achieved at intermediate junction closures • Reduced priority at Moorepark junction	5.4
	Sum of Impact Scores		**Total**	**7.0**	**Total**	**5.8**	**Total**	**4.2**	**Total**	**7.0**	**Total**	**5.4**	**Total**	**5.4**
	Cost Weighted Score (out of 100)		**Total**	**100**	**Total**	**83**	**Total**	**60**	**Total**	**100**	**Total**	**77**	**Total**	**77**
Integration	• To deliver a practicable interim transport solution which does not introduce significant constraint on the subsequent development of the N11/M11 Junction 4 to Junction 14 Improvement scheme	• Compatibility with Phase 2 Preferred Option for N11/M11 Scheme. Extent of abortive works.	• Closure of all intermediate junctions and accesses aligns with N11/M11J4-J14 Scheme	6	• Retention of Quill Road junction does not align with the N11/M11 J4-J14 Scheme preferred option. • Closure of all other intermediate junctions and accesses aligned with N11/M11 J4-J14 Scheme preferred option	5	• Retention of Quill Road and Moorepark junctions does not align with the N11/M11 J4-J14 Scheme preferred option • Closure of all other intermediate junctions and accesses aligned with N11/M11 J4-J14 Scheme preferred option	4	• Closure of all intermediate junctions and accesses aligned with N11/M11 J4-J14 Scheme • Construction of Junction 9 to Quill Road link a benefit as also proposed as part of N11/M11 J4-J14 Scheme preferred option	7	• Retention of Moorepark merge/diverge does not align with the N11/M11 J4-J14 Scheme preferred option • Construction of Junction 9 to Quill Road link a benefit as also proposed as part of N11/M11 J4-J14 Scheme preferred option • Closure of Quill Road junction and other accesses does align with N11/M11 J4-J14 Scheme preferred option	5	• Retention of Moorepark merge/diverge does not align with the N11/M11 J4-J14 Scheme preferred option • Closure of Quill Road junction and other accesses does align with N11/M11 J4-J14 Scheme preferred option	4
	• To support integration of road-based transport with other transport modes • To complement wider government transport policy	• Level of compliance with plans and policies.	• Aligned with policy	5	• Aligned with policy	5	• Aligned with policy	5	• Aligned with policy	5	• Aligned with policy	5	• Aligned with policy	5
	Sum of Impact Scores		**Total**	**11**	**Total**	**10**	**Total**	**9**	**Total**	**12**	**Total**	**10**	**Total**	**9**
	Cost Weighted Score (out of 100)		**Total**	**79**	**Total**	**71**	**Total**	**64**	**Total**	**86**	**Total**	**71**	**Total**	**64**
Physical Activity	• To provide a facility that allows for the delivery of an attractive alternative mode of transport for communities which supports the creation of a healthier urban environment for active travel, through congestion relief.	• Provision of safe alternative facility for active travel (buses not in conflict with active travel users).	• Safe alternative AT facility provided	6	• Safe alternative AT facility provided	6	• Safe alternative AT facility provided	6	• Safe alternative AT facility provided	6	• Safe alternative AT facility provided	6	• Safe alternative AT facility provided	6
	Sum of Impact Scores		**Total**	**6**	**Total**	**6**	**Total**	**6**	**Total**	**6**	**Total**	**6**	**Total**	**6**
	Cost Weighted Score (out of 100)		**Total**	**86**	**Total**	**86**	**Total**	**86**	**Total**	**86**	**Total**	**86**	**Total**	**86**
Total Weighted Score (out of 900)			**712**		**660**		**585**		**688**		**632**		**594**	