

Wicklow County Council

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

Option Selection Report
Appendix C11 – Material assets -
non-agriculture

265455-ARP-EGN-SWI-RP-ZZ-0002

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1 Material assets – non-agriculture

1.1 Introduction

This report details the Stage 1 Preliminary Options Assessment of the corridor options with respect to the Material assets non-agricultural constraints identified in **Section 8** (Material assets – non-agriculture) of **Volume B**.

For the corridor assessment, the overall scheme has been split into two sections, i.e. the Northern Section and the Southern Section and the corridor options assessed are those discussed in **Section 6.1.1** of **Volume A**.

There are two zones associated with each corridor option referred to in this assessment:

- The potential road “footprint” which is the potential landtake required to construct or improve the road; and
- The property assessment also considers the numbers of properties⁴ within a 50m band outside of each option footprint. Properties located within this 0-50m band are considered to be at a slight risk of impact in the event of significant design changes, but this risk is considered to be minimal at the time of writing.

Section 1.2 outlines the methodology that was used to carry out the assessment, and **Section 1.3** outlines the assessment criteria which were used. The Stage 1 assessment is presented in **Section 1.4**, the summary in **Section 1.5** and references are listed in **Section 1.6**. The assessment has been carried out in two parts. The first part covers the impacts associated with infrastructure and the second part covers impacts on both residential and commercial properties.

The principal objectives of the assessment are to:

- Assess the significance of the likely direct physical impacts of the proposed scheme on non-agricultural material assets along each corridor option using the footprint zone of each corridor;
- Evaluate and compare the impact on non-agricultural material assets for each corridor option considering interactions with other environmental, engineering and economic criteria;
- Assess each option in line with the TII Project Appraisal Guidelines for National Roads (PAG) Unit 7.0 – Multi Criteria Analysis¹ (herein referred to as the TII PAG); and
- Based on the above assessments, compare and rank the corridor options in order of preference.

¹Transport Infrastructure Ireland Project Appraisal Guidelines for National Roads Unit 7.0 – Multi Criteria Analysis, 2016. Available from: <https://www.tiipublications.ie/library/PE-PAG-02031-01.pdf>

1.2 Methodology

The methodology adopted for this assessment comprised primarily of a desktop study and focused on the constraints identified in **Section 8** (Material assets – non-agriculture) of **Volume B**. Sources of information consulted for the assessment are listed in **Table 8.1** of **Section 8** (Material assets – non-agriculture) of **Volume B**.

These constraints, including transport infrastructure, utilities and non-agricultural land use, were used to identify and describe areas of potential infrastructural value or sensitivity.

For the purposes of assessing direct impacts on properties and infrastructure, the footprint of each route within each corridor option was assessed. This footprint better reflects the potential extents of lands required to construct each corridor option. These footprints allow for the option design and an appropriate buffer width within each corridor, based on engineering judgement, and reflect what is currently considered to be the most likely extents of lands required for each option at the time of writing. This approach allows for a review of all likely direct impacts resulting from the design of each option within its corridor and increases the certainty of the impact assessment.

The TII PAG¹ multi-criteria assessment is based on 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; or

Level of impact

The impact of the route options on Material assets (non-agriculture) is assessed according to the significance criteria detailed in **Table 1.1**. These criteria are included in **Table 3.3** of the EPA Draft Guidelines².

Table 1.1: EPA guidelines Table 3.3² – description of effects

EPA GUIDELINES Table 3.3 – Description of Effects	
<p>Quality of Effects</p> <p>It is important to inform the non-specialist reader whether an effect is</p>	<p>Positive Effects</p> <p>A change which improves the quality of the environment (for example, by increasing species diversity; or the improving reproductive capacity of an ecosystem, or by removing nuisances or improving amenities).</p>

²Environmental Protection Agency (EPA), Guidelines on the Information to be Contained in Environmental Impact Assessment Reports, Draft 2017. Available from: <https://www.epa.ie/publications/monitoring--assessment/assessment/draft-guidelines-on-the-information-to-be-contained-in-environmental-impact-asse.php>

EPA GUIDELINES Table 3.3 – Description of Effects	
positive, negative or neutral	<p>Neutral Effects</p> <p>No effects or effects that are imperceptible, within normal bounds of variation or within the margin of forecasting error.</p>
	<p>Negative/adverse Effects</p> <p>A change which reduces the quality of the environment (for example, lessening species diversity or diminishing the reproductive capacity of an ecosystem; or damaging health or property or by causing nuisance).</p>
<p>Describing the Significance of Effects</p> <p>‘Significance’ is a concept that can have different meanings for different topics – in the absence of specific definitions for different topics the following definitions may be useful (also see Determining Significance below.).</p>	<p>Imperceptible</p> <p>An effect capable of measurement but without significant consequences.</p>
	<p>Not significant</p> <p>An effect which causes noticeable changes in the character of the environment but without significant consequences.</p>
	<p>Slight Effects</p> <p>An effect which causes noticeable changes in the character of the environment without affecting its sensitivities.</p>
	<p>Moderate Effects</p> <p>An effect that alters the character of the environment in a manner that is consistent with existing and emerging baseline trends.</p>
	<p>Significant Effects</p> <p>An effect which, by its character, magnitude, duration or intensity alters a sensitive aspect of the environment.</p>
	<p>Very Significant</p> <p>An effect which, by its character, magnitude, duration or intensity significantly alters most of a sensitive aspect of the environment.</p>
	<p>Profound Effects</p> <p>An effect which obliterates sensitive characteristics</p>
<p>Describing the Extent and Context of Effects</p> <p>Context can affect the perception of significance. It is important to establish if the effect is unique or, perhaps, commonly or increasingly experienced</p>	<p>Extent</p> <p>Describe the size of the area, the number of sites, and the proportion of a population affected by an effect.</p>
	<p>Context</p> <p>Describe whether the extent, duration, or frequency will conform or contrast with established (baseline) conditions (is it the biggest, longest effect ever?)</p>

1.2.1 Infrastructure assessment

1.2.1.1 Utilities

The utilities assessment covers the electricity transmission and distribution networks, gas transmission and distribution networks, telecommunications infrastructure, water and wastewater infrastructure. Renewable energy infrastructure could also be included however no significant renewable energy infrastructure has been identified within the extents of the N11/M11 study area.

Existing utility records were requested and received from the relevant utility service providers and a significant number of crossing points or conflict points for utilities and services have been identified within each corridor option. Extents of impacts range from perpendicular crossings of the option footprints to diversions of kilometres of service ducts and pipelines where longitudinal conflicts have been identified.

At this stage of the assessment of route options, it is difficult to consider all utilities that are impacted by each corridor option as within each utility type there are a wide range of infrastructure types resulting in impacts of differing significance. As a preliminary assessment of the corridor options, the assessment is limited to impacts relating to larger and more significant utilities and services such as trunk mains and major transmission mains.

There are considerable numbers of low voltage ESB lines, along with numerous small diameter foul, combined and surface water sewers, watermains and minor gas connections servicing every home and business in the scheme study area. These services were not assessed as part of this assessment, as they occur across each of the corridor options, are considered to be minor constraints and could be readily diverted where necessary as part of the final design.

The following services are considered to be the major utilities constraints to be assessed for each corridor option:

- ESB High Voltage Overhead (ESB 110kV and 38kV OH)
- ESB High Voltage Underground (ESB 110kV and 38kV UG)
- ESB High Voltage Sub-Station (110kV and 38kV)
- Gas Networks Ireland (Bord Gáis) High Pressure Transmission & Distribution mains
- EIR underground services
- Enet underground services
- Virgin Media underground services
- BT underground services
- Irish Water Trunk and Distribution Mains, Foul Sewer, Pump Stations.

The nature of impacts within on-line segments of corridor options can be considered to be quite different to those within off-line corridor segments.

The existing N11/M11 contains significant lengths of existing services, however, much of this infrastructure may remain relatively unaffected should an upgrade to the existing N11/M11 be preferred over an off-line option.

However, at the current time the extents of impacts in these on-line corridor segments is difficult to determine as the level of detail required to make this assessment is not yet available. As such, all infrastructure located within the existing N11/M11 is considered as a potential impact within the assessment.

The existing waste facilities within the scheme study area boundary have been identified in **Section 8** (Material assets – non-agriculture) of **Volume B**. The footprint of each option within its corridor was examined against the waste management constraints identified and any waste facility within this footprint was assessed as an impact.

1.2.1.2 Transport infrastructure

Transport infrastructure is assessed in a qualitative manner as part of to this assessment.

1.2.2 Property assessment

The properties assessment focuses on the following criteria:

- Potential to impact on Settlements and Land Zoned for Development or other Purposes;
 - Based on Dún Laoghaire-Rathdown County Development Plan 2016-2021³ and the County Wicklow Development Plan 2016-2022⁴; and
- Potential to Impact Existing Properties (Residential, Commercial, Community Facilities, and Tourism).

1.2.2.1 Settlements and zoning

The assessment of zones and settlements impacted by the corridor options is based on an assessment of zoning maps contained in Dún Laoghaire-Rathdown County Development Plan 2016-2021³ and the County Wicklow Development Plan 2016-2021⁴.

³ Dún Laoghaire-Rathdown County Development Plan 2016-2021. Available from: <https://www.dlrcoco.ie/en/county-development-plan/county-development-plan-2016-2022> [Accessed: 31 March 2020]

⁴ County Wicklow Development Plan 2016-2021. Available from: <https://www.wicklow.ie/Living/Services/Planning/Development-Plans-Strategies/National-Regional-County-Plans/Wicklow-County-Development-Plan/Wicklow-County-Development-Plan-2016-2022> [Accessed: 30 March 2020]

1.2.2.2 Residential and commercial properties

The assessment of both residential and commercial properties is based on an assessment of the numbers of each property type located within the extents of each of the option footprints within each corridor option. These properties are considered to be direct impacts and represent a *significant negative* impact.

The assessment also considers the numbers of properties within a 50m band outside of each option footprint.

Properties located within this 0-50m band are considered to be at a slight risk of impact in the event of significant design changes, but this risk is considered to be minimal at the time of writing. Locations and numbers of properties impacted is based on ‘OS Map building points data’ received from Wicklow County Council on the 20 September 2019⁵. For the purposes of this assessment, properties referred to as both ‘residential’ and ‘commercial residential’ categories, have been considered together to represent the various numbers of residential properties. The assessment also takes account of existing planning permissions⁶ within each option which may be impacted by the proposed road development. The planning permissions referenced are based on a search of the Dún Laoghaire-Rathdown County Council and Wicklow County Council planning applications downloaded from GeoHive open source on the 02.04.2020⁶. Those properties included relate only to those developments which have been granted planning permission but as yet do not appear to have been implemented.

1.2.2.3 Community facilities

The assessment of community facilities, such as schools, churches, amenity grounds such as playing pitches, medical facilities and childcare service providers is based primarily on the quantities of these types of facilities located within or near the corridor options as for the residential and commercial properties assessment. A *minor or slightly negative* rating is applied to options where there are no receptors or a very low number of receptors within an assessment corridor and the receptors identified serve a relatively small number of people that do not comprise particularly sensitive groupings. A *major or highly negative* is assigned where there is potential for direct significant or profound impacts to facilities serving large population numbers (e.g. large hospitals or major recreational facilities) or a large number of locally important facilities or where particularly sensitive groupings are substantially affected. A *moderately negative* scoring is assigned to impacts which lie between these parameters, whereby local facilities are potentially impacted to a significant extent or larger facilities could be impacted but to a lesser extent than a direct significant or profound extent.

⁵ Ordnance Survey Ireland. Licence Number 2020/35/CCMA/Wicklow County Council, OSI Digital Terrain Data (Prime 2) [Received from Wicklow County Council: 20 September 2019]

⁶ Department of House, Planning and Local Government, National Planning Applications. Available from: <https://data.gov.ie/dataset/national-planning-applications> [Accessed: 02 April 2020]

1.2.2.4 Tourism

The tourism assessment is based on the number and nature of known tourism attractions, tourist accommodation and / or amenity facilities that are of benefit to tourists, and which may also be of amenity value to the local resident and working community. A *major or highly negative* impact score is applied where a large-scale or internationally or nationally branded tourist facility is significantly impacted. A *moderately negative* impact score is applied where a regionally important visitor attraction/amenity, or a largescale accommodation facility such as a hotel is potentially impacted to result in a significant or profound impact.

A *minor or slightly negative* impact is assigned where a facility that is of importance to the local tourist economy and serves an amenity function to the local population is potentially impacted.

The assessment does not identify noise impacts, traffic delays / disruption impacts or visual impacts etc. as these topics are dealt with in separate assessments.

1.3 Assessment criteria

The assessment was informed by the TII PAG¹ and the EPA Draft Guidelines on the information to be contained in Environmental Impact Assessment Reports². The criteria that have been used for the assessment of Material assets non-agriculture are provided in **Table 1.2**.

Table 1.2: Environmental factors and associated topics for consideration for Option Selection stage

Environmental Factor	Criterion
Infrastructure	Built Services covering: Electricity Gas Telecommunications Water and wastewater Quarries
	Transport Infrastructure covering: Roads Rail
	Waste Management Infrastructure covering: Waste facilities

Environmental Factor	Criterion
	Forestry
Properties	Settlements and Zoning
	Residential
	Commercial
	Community Facilities
	Tourism

1.4 Stage 1 preliminary options assessment

Material assets can be defined as economic assets of natural and human origin, or cultural assets of a physical and social type. This section identifies the potential impacts of each option on identified infrastructure constraints in relation to Material assets non-agricultural, with particular reference to utilities, transport infrastructure, and non-agricultural land use.

1.4.1 Infrastructure assessment

1.4.1.1 Utilities

Electricity

ESB Networks provide electricity supply connections throughout the scheme study area as shown on **Figures B8.27 to B8.32**.

High voltage overhead and underground cables of 38kV and 110kV are present throughout the study area. Several electrical substations have also been identified within the study area. The nature of clashes and/or impacts between corridor options and electricity cables are both longitudinal and perpendicular. For the purposes of the assessment each of these types of impacts was considered. The number of clashes and extents of impact are included in **Table 1.3** and **Table 1.4**.

Table 1.3: Potential impact score of each option with respect to impact on electricity network – Northern Section.

Utilities		Corridor Option 1 (North)	Corridor Option 2 (North)	Corridor Option 3 (North)	Corridor Option 4 (North)
Electricity	'c'	0	0	0	0

Utilities Electricity		Corridor Option 1 (North)	Corridor Option 2 (North)	Corridor Option 3 (North)	Corridor Option 4 (North)
ESB 110kV OH	‘l’	0	0	0	0
	‘t’	0	0	0	0
ESB 110kV UG	‘c’	0	0	0	0
	‘l’	0	0	0	0
	‘t’	0	0	0	0
ESB 38kV OH	‘c’	1	0	0	0
	‘l’	0	1	1	1
	‘t’	95m	743m	688m	688m
ESB 38kV UG	‘c’	2	2	2	2
	‘l’	0	0	0	0
	‘t’	570m	570m	570m	570m
HV Substation- 110kV		0	0	0	0
HV Substation- 38kV		0	0	0	0
Qualitative Assessment		Not significant or neutral	Minor or slightly negative	Minor or slightly negative	Minor or slightly negative
Score / Impact Level		4	3	3	3
Preference		Preferred	Least Preferred	Least Preferred	Least Preferred
Notes: ‘c’ = number of crossings					

Utilities		Corridor Option 1 (North)	Corridor Option 2 (North)	Corridor Option 3 (North)	Corridor Option 4 (North)
Electricity					
‘l’ = number of longitudinal impacts					
‘t’ = total length of impact					

Table 1.4: Potential impact score of each option with respect to impact on electricity network – Southern Section.

Utilities		Corridor Option 1 (South)	Corridor Option 2 (South)	Corridor Option 3 (South)	Corridor Option 4 (South)	Corridor Option 5 (South)
ESB 110kV OH	‘c’	2	4	2	2	2
	‘l’	1	1	1	1	1
	‘t’	952m	1,955m	952m	952m	952m
ESB 110kV UG	‘c’	0	0	0	0	0
	‘l’	0	0	0	0	0
	‘t’	0	0	0	0	0
ESB 38kV OH	‘c’	0	0	0	0	0
	‘l’	0	0	0	0	0
	‘t’	0	0	0	300m	0
ESB 38kV UG	‘c’	0	0	0	0	0
	‘l’	0	0	0	0	0
	‘t’	0	0	0	209m	0
HV Substation- 110kV		0	0	0	0	0
HV Substation- 38kV		0	0	0	0	0

Utilities		Corridor Option 1 (South)	Corridor Option 2 (South)	Corridor Option 3 (South)	Corridor Option 4 (South)	Corridor Option 5 (South)
Electricity						
Qualitative Assessment		Minor or slightly negative	Major or highly negative	Minor or slightly negative	Minor or slightly negative	Minor or slightly negative
Score / Impact Level		3	1	3	3	3
Preference		Preferred	Least Preferred	Preferred	Intermediate	Preferred
	Notes: ‘c’ = number of crossings ‘l’ = number of longitudinal impacts ‘t’ = total length of impact					

In the Northern Section, similar numbers of impacts have been identified across all four corridors for 38kV overhead and underground electricity cables. A single clash with a 38kV overhead electricity cable has been identified for each of the 4 corridor options, however, the extents of these impacts vary, with Corridor Option 1 (North) having the shortest total length of impact making it slightly preferred to the other options.

In the Southern Section of the scheme, three impacts with a 110kV overhead electricity cable have been identified for Corridor Options 1 (South), 3 (South), 4 (South) and 5 (South). Corridor Option 2 (South) is the most heavily impacted by 110kV overhead cables, with five conflicts of varying length making it the least preferred option. Corridor Option 4 (South) is the only option to clash with 38kV cables identified in the Southern Section making it less preferred than the other options.

Gas

Gas Networks Ireland (Bord Gáis) gas supply lines, both transmission and distribution, are widespread throughout the scheme study area as shown on **Figures B8.9 to B8.14**.

The significant infrastructure considered by this assessment include high pressure transmission and distribution gas lines and the Hollybrook Above Ground Installation (AGI) which represents a valuable facility that would be extremely difficult and costly to relocate.

The number of clashes and extents of impact are included in **Table 1.5** and **Table 1.6**.

Table 1.5: Potential impact score of each option with respect to impact on gas network – Northern Section.

Utilities Gas		Corridor Option 1 (North)	Corridor Option 2 (North)	Corridor Option 3 (North)	Corridor Option 4 (North)
Transmission Main 200mm-ST-70bar / 300mm-ST-40bar	'c'	0	0	3	1
	'l'	1	3	2	1
	't'	3,695m	1,926m	2,203m	2,832m
Distribution Mains (Variable Size & Pressure)	't'	5,756m	2,882m	2,475m	3,076m
Qualitative Assessment		Moderately negative	Minor or slightly negative	Minor or slightly negative	Minor or slightly negative
Score / Impact Level		2	3	3	3
Preference		Least Preferred	Preferred	Intermediate	Intermediate
Notes: 'c' = number of crossings 'l' = number of longitudinal impacts 't' = total length of impact					

Table 1.6: Potential impact score of each option with respect to impact on gas network – Southern Section.

Utilities Gas		Corridor Option 1 (South)	Corridor Option 2 (South)	Corridor Option 3 (South)	Corridor Option 4 (South)	Corridor Option 5 (South)
Transmission Main 200mm-ST-70bar / 300mm-ST-40bar	'c'	5	4	5	5	5
	'l'	1	2	1	1	1
	't'	5,236m	5,182m	4,548m	4,558m	5,236m
Distribution Mains	't'	524m	524m	645m	688m	524m

Utilities		Corridor Option 1 (South)	Corridor Option 2 (South)	Corridor Option 3 (South)	Corridor Option 4 (South)	Corridor Option 5 (South)
Gas						
(Variable Size & Pressure)						
Qualitative Assessment		Moderately negative	Moderately negative	Moderately negative	Moderately negative	Moderately negative
Score / Impact Level		2	2	2	2	2
Preference		Intermediate	Least Preferred	Preferred	Preferred	Intermediate
Notes: 'c' = number of crossings 'l' = number of longitudinal impacts 't' = total length of impact						

In the Northern Section of the scheme, Corridor Option 1(North) has the greatest length of conflict with the existing transmission and distribution mains making it the least preferred option, however, much of the significant transmission main is located within the median of the existing road. Corridor Option 2 (North) has the shortest length of conflict and as a result can be considered slightly preferred. The Hollybrook Above Ground Installation lies within Corridor Option 1 (North), further contributing to its negative assessment.

In the Southern Section of the scheme, the lengths of transmission and distribution mains impacted is broadly similar across all options. Corridor Option 2 (South) is considered to be the least preferred option as the potential impacts of the option are considered to be greater than the potential for impacts on other options. This is because lengths of transmission mains are largely included within the existing median of the existing N11 for the other options. Corridor Options 3 (South) and Corridor Option 4 (South) contain slightly shorter lengths of conflict than other options making them slightly preferred.

Telecommunications

Telecommunications infrastructure is widespread throughout the study area. Impacts on ducting and chambers is likely to be the main form of impact. The number of clashes and extents of impact are included in **Table 1.7** and **Table 1.8**.

Table 1.7: Potential impact score of each option with respect to impact on telecommunications network – Northern Section.

Utilities Telecommunications		Corridor Option 1 (North)	Corridor Option 2 (North)	Corridor Option 3 (North)	Corridor Option 4 (North)
EIR Network Ducts		19,527m	16,480m	13,124m	13,638m
EIR Network Chambers		170	136	85	98
EIR - National Core Fibre	‘c’	3	3	3	3
	‘l’	1	1	0	0
	‘t’	1,350m	1,350m	600m	600m
EIR - Rural Fibre Network	‘c’	4	4	1	1
	‘l’	2	2	0	0
	‘t’	3,400m	3,400m	200m	200m
EIR - Digital Telephone Exchange		1	1	0	0
EIR - Digital Fibre Cabinet Exchange		1	1	0	0
E-Net		0	0	0	0
Virgin Media Ducting		2,391m	1,992m	1,992m	2,012m
Qualitative Assessment		Moderately negative	Minor or slightly negative	Minor or slightly negative	Minor or slightly negative
Score / Impact Level		2	3	3	3
Preference		Least Preferred	Intermediate	Preferred	Intermediate
Notes: ‘c’ = number of crossings ‘l’ = number of longitudinal impacts ‘t’ = total length of impact					

Table 1.8: Potential impact score of each option with respect to impact on telecommunications network – Southern Section.

Utilities Telecommunications		Corridor Option 1 (South)	Corridor Option 2 (South)	Corridor Option 3 (South)	Corridor Option 4 (South)	Corridor Option 5 (South)
EIR Network Ducts		10,212m	3,262m	6,586m	6,568m	10,212
EIR Network Chambers		111	29	67	67	111
EIR - National Core Fibre	‘c’	1	1	1	1	1
	‘l’	0	0	0	0	0
	‘t’	200m	200m	200m	200m	200m
EIR - Rural Fibre Network	‘c’	4	4	4	4	4
	‘l’	2	2	2	2	2
	‘t’	2,700m	2,700m	2,700m	2,700m	2,700m
EIR - Digital Telephone Exchange		0	0	0	0	0
EIR - Digital Fibre Cabinet Exchange		0	0	0	0	0
E-Net		678m	678m	678m	678m	678m
Virgin Media Ducting		0	0	0	0	0
Qualitative Assessment		Minor or slightly negative	Not significant or neutral	Minor or slightly negative	Minor or slightly negative	Minor or slightly negative
Score / Impact Level		3	4	3	3	3
Preference		Least Preferred	Preferred	Intermediate	Intermediate	Least Preferred
Notes: ‘c’ = number of crossings						

Utilities Telecommunications		Corridor Option 1 (South)	Corridor Option 2 (South)	Corridor Option 3 (South)	Corridor Option 4 (South)	Corridor Option 5 (South)
‘l’ = number of longitudinal impacts ‘t’ = total length of impact						

Corridor Option 1 (North) is considered to be the least preferred option in the northern section, primarily as a result of impacts with significant lengths of telecommunications network ducts, high numbers of network access chambers, impacts on NCF & NRF networks, impacts on EIR’s digital telephone exchange and EIR cabinet exchanges. Both the EIR digital telephone exchange and cabinet exchanges are particularly significant assets. It should be noted that the high degree of impacts for all options are likely due to the telecommunications network following the line of the existing national road corridor. However, the number and extent of impacts being greater for Corridor Option 1 (North), which is fully online, still result in this being the least preferred option. Corridor Option 4 (North) has the fewest and least significant impacts on telecommunications infrastructure and is considered to be the preferred option.

In the Southern Section of the scheme, the number of impacts on corridor options are relatively consistent across all options. Due to a greater level of impact on EIR network ducts and access chambers, Corridor Option 1 (South) and Corridor Option 5 (South) can be considered least preferred.

Water and wastewater

Water and wastewater infrastructure is widespread throughout the study area. Impacts on trunk and distribution mains as well as pump stations are the main form of impact considered. The number of clashes and extents of impact are included in **Table 1.9** and **Table 1.10**.

Table 1.9: Potential impact score of each option with respect to impact on the water and wastewater network – Northern Section.

Utilities Water and Wastewater		Corridor Option 1 (North)	Corridor Option 2 (North)	Corridor Option 3 (North)	Corridor Option 4 (North)
Water Trunk Main	‘c’	0	1	1	1
	‘l’	2	1	1	2
	‘t’	8,586m	6,348m	2,938m	3,687m
Water	‘c’	6	7	7	7
	‘l’	2	1	1	2

Utilities		Corridor Option 1 (North)	Corridor Option 2 (North)	Corridor Option 3 (North)	Corridor Option 4 (North)
Water and Wastewater					
Distribution Main	‘t’	6,047m	4,850m	3,164m	3,173m
Abandoned Main	‘t’	124m	124m	124m	124m
Foul Sewer	‘c’	2	2	2	2
	‘l’	1	1	0	0
	‘t’	5,659m	4,608m	1,563m	1,220m
Water Pump Station		0	0	0	0
Sewer Pump Station		2	1	0	1
Qualitative Assessment		Moderately negative	Moderately negative	Minor or slightly negative	Minor or slightly negative
Score / Impact Level		2	2	3	3
Preference		Least Preferred	Intermediate	Preferred	Intermediate
Notes: ‘c’ = number of crossings ‘l’ = number of longitudinal impacts ‘t’ = total length of impact					

Table 1.10: Potential impact score of each option with respect to impact on the water and wastewater network – Southern Section.

Utilities		Corridor Option 1 (South)	Corridor Option 2 (South)	Corridor Option 3 (South)	Corridor Option 4 (South)	Corridor Option 5 (South)
Water and Wastewater						
Water	‘c’	3	2	3	3	3
Trunk Main	‘l’	2	0	1	1	2

Utilities		Corridor Option 1 (South)	Corridor Option 2 (South)	Corridor Option 3 (South)	Corridor Option 4 (South)	Corridor Option 5 (South)
Water and Wastewater						
	‘t’	10,413m	3,622m	3,186m	3,077m	10,522m
Water	‘c’	6	6	7	7	6
Distribution Main	‘l’	2	1	1	1	2
	‘t’	5,172m	3,374m	3,794m	3,957m	5,229m
Abandoned Main	‘t’	592m	269m	481m	429m	592m
Foul Sewer	‘c’	2	0	2	2	2
	‘l’	0	0	0	0	0
	‘t’	397m	291m	397m	397m	397m
Water Pump Station		1	0	0	0	1
Sewer Pump Station		0	0	0	0	0
Qualitative Assessment		Moderately negative	Minor or slightly negative	Minor or slightly negative	Minor or slightly negative	Moderately negative
Score / Impact Level		2	3	3	3	2
Preference		Least Preferred	Preferred	Intermediate	Intermediate	Least Preferred
Notes: ‘c’ = number of crossings ‘l’ = number of longitudinal impacts ‘t’ = total length of impact						

In the Northern Section of the scheme, Corridor Option 1 (North) is considered the least preferred option as a result of impacting upon greater lengths of water and wastewater trunk and distribution mains, as well as 2 sewer pump stations.

Corridor Option 3 (North) is the preferred options as it results in the least extent of impact on water trunk and distribution infrastructure while being equal in terms of impacts to Corridor Option 4 (North) under sewer related impacts.

In the Southern Section of the scheme, Corridor Option 1 (South) and Corridor Option 5 (South) contain the greatest lengths of water trunk mains, water distribution mains as well as foul sewer infrastructure and are considered to be least preferred. Though Corridor Option 2 (South) contains a greater length of water trunk main than either Corridor Option 3 (South) or Corridor Option 4 (South), it is considered preferred as it contains shorter lengths of distribution mains and foul sewer mains. Furthermore, Corridor Option 3 (South) and Corridor Option 4 (South) cross a trunk main running along Blackberry Lane where a reservoir is located in close proximity to these corridors but outside their extents. The proximity of these corridors to the Blackberry Lane reservoir makes them less preferred than Corridor Option 2 (South).

Utilities Summary

The results of the utilities assessment are presented in **Table 1.11**.

Table 1.11: Summary of utilities infrastructure.

Utilities Summary	Corridor Option 1 (North)	Corridor Option 2 (North)	Corridor Option 3 (North)	Corridor Option 4 (North)	Corridor Option 1 (South)	Corridor Option 2 (South)	Corridor Option 3 (South)	Corridor Option 4 (South)	Corridor Option 5 (South)
Electricity	4	3	3	3	3	1	3	3	3
	Preferred	Least Preferred	Least Preferred	Least Preferred	Preferred	Least Preferred	Preferred	Intermediate	Preferred
Gas	2	3	3	3	2	2	2	2	2
	Least Preferred	Preferred	Intermediate	Intermediate	Intermediate	Least Preferred	Preferred	Preferred	Intermediate
Telecom	2	3	3	3	3	4	3	3	3
	Least Preferred	Intermediate	Preferred	Intermediate	Least Preferred	Preferred	Intermediate	Intermediate	Least Preferred
Water and Wastewater	2	2	3	3	2	3	3	3	2
	Least Preferred	Intermediate	Preferred	Intermediate	Least Preferred	Preferred	Intermediate	Intermediate	Least Preferred

Utilities Summary	Corridor Option 1 (North)	Corridor Option 2 (North)	Corridor Option 3 (North)	Corridor Option 4 (North)	Corridor Option 1 (South)	Corridor Option 2 (South)	Corridor Option 3 (South)	Corridor Option 4 (South)	Corridor Option 5 (South)
Overall Impact Level Score	3	3	3	3	3	2	3	3	3
Overall Qualitative Assessment	Minor or slightly negative	Minor or slightly negative	Minor or slightly negative	Minor or slightly negative	Minor or slightly negative	Moderately negative	Minor or slightly negative	Minor or slightly negative	Minor or slightly negative
	Least Preferred	Intermediate	Preferred	Preferred	Least Preferred	Least Preferred	Preferred	Intermediate	Least Preferred

The assessment of the utilities infrastructure suggests that impacts on utilities within the corridors in both the northern and southern sections are broadly quite similar. Corridor Option 1 (North) and Corridor Option 1 (South) and 5 (South) contain the greatest lengths and number of utilities impacts overall which results in them being considered the least preferred options.

Corridor Option 3 (North) and Corridor Option 4 (North) are considered to be the preferred options in the Northern Section. The impacts to both electrical and gas infrastructure by Corridor Option 2 (South), are significant enough for this corridor option to be considered least preferred in the Southern Section. Corridor Option 3 (South) although with significant impacts is considered to be marginally preferred to Corridor Option 4 (South) on balance.

1.4.1.2 Transport infrastructure

Road network

This section of the assessment assesses the impact of each of the current options in both the northern and southern sections on the existing road network. The impacts associated with the existing road network are presented in **Table 1.12** and **Table 1.13**.

Table 1.12: Potential impact score of each option with respect to impact on road network – Northern Section.

Transport Road	Corridor Option 1 (North)	Corridor Option 2 (North)	Corridor Option 3 (North)	Corridor Option 4 (North)
Qualitative Assessment	Minor or slightly negative	Moderately negative	Moderately negative	Moderately negative
Score / Impact Level	3	2	2	2
Preference	Preferred	Intermediate	Intermediate	Intermediate

Table 1.13: Potential impact score of each option with respect to impact on road network – Southern Section

Transport Road	Corridor Option 1 (South)	Corridor Option 2 (South)	Corridor Option 3 (South)	Corridor Option 4 (South)	Corridor Option 5 (South)
Qualitative Assessment	Minor or slightly negative	Minor or slightly negative	Moderately negative	Moderately negative	Minor or slightly negative
Score / Impact Level	3	3	2	2	3
Preference	Preferred	Intermediate	Least Preferred	Least Preferred	Preferred

Each of the corridor options will directly impact on the existing national road network and the regional and local road networks which link to it. All northern and southern options must tie in with the existing national road network at their northern and southern extents, however, these tie in points will be consistent across all options. Interactions with regional and local roads will be more varied across all options, however, connectivity with these local roads will need to be maintained for each option and as a result connectivity will not be considered a differentiating factor in the overall assessment.

Corridor Option 1 (North), Corridor Option 1 (South) and Corridor Option 5 (South) will, by the nature of being on-line options, have a greater level of interaction with the existing N11 and its junctions with regional and local roads. All options which include off-line segments will require the construction of new junctions, under/overbridges, road realignments, access provisions in order to provide continued connectivity with local and regional roads, all of which would likely result in more significant negative impacts. The options containing off-line segments are considered to have a greater negative impact overall with regards to achieving the same level of interaction and connectivity with existing road infrastructure as the on-line option segments.

In the Northern Section of the Scheme, Corridor Option 1 (North) is considered to be preferred over the corridor options that include off-line segments. A similar number and scale of interactions between existing rural and local road networks and corridor options containing off-line segments are noted resulting in *minor or slightly negative* impacts. In the Southern Section, Corridor Option 1 (South) and Corridor Option 5 (South) are considered preferred.

Corridor Option 2 (South) is considered to result in less of a negative impact than the other corridor options containing off-line segments as it interacts with fewer existing regional and local roads overall.

In the event that Corridor Options 2 (North), 3 (North) or 4 (North) or Corridor Options 2 (South), 3 (South) or 4 (South) were preferred in the overall Stage 1 Preliminary Options Assessment, it should be noted that in addition to the construction of the required off-line segments and associated junctions and structures that will form these options, it will be necessary to carry out additional works on the remaining on-line segments of the existing N11 that would be bypassed with any of the off-line segments. These works would involve the declassification of the existing N11, its repurposing as a regional or local road type and would likely include the implementation of appropriate design measures to enforce speed reductions through these sections. These additional associated works result in a *minor or slightly negative* impact being assigned to the corridor options containing off-line segments.

Rail Network

None of the N11/M11 corridor options in either the northern or southern sections directly impact on rail infrastructure. Therefore, there is no perceptible difference with regards potential impact of each option on the existing railway infrastructure. The impacts associated with rail considered to be *not significant or neutral* across all options and all options are awarded an impact score of '4'.

1.4.2 Waste Management Infrastructure

None of the waste management infrastructure/facilities identified within the scheme study area are directly impacted by any of the current corridor options. Therefore, there is no perceptible difference with regards potential impact of each option on the existing waste management infrastructure. The impacts associated with waste facilities are considered to be *not significant or neutral* across all options and all options are awarded an impact score of 4.

1.4.3 Forestry

Impacts on commercial forestry have been assessed in the Material assets – agriculture assessment, refer to **Appendix C10** (Material assets – agriculture) of **Volume C**, as forestry is considered to be an agricultural asset.

1.4.4 Quarries

There are no live quarries located within the extents of any of the corridor options and any live quarries located outside of the corridors are considered to have relatively similar proximity to each option, hence, all corridor options are considered to have a *not significant or neutral* impact and are awarded an impact score of 4.

1.4.5 Properties assessment

1.4.5.1 Settlements and zoning

All options will contribute to the Core Strategy objectives of the County Development Plans^{3,4} and in principle will have a positive impact as a result of delivering improved connectivity through the area and region. Given the relative similarities between each of the corridor options, many of the impacts on settlements and zoning arising are consistent across all corridor options.

Within the extents of the Dún-Laoghaire Rathdown County Development Plan³, all options follow the same corridor so the impacts arising within this section of the N11/M11 Scheme will be equal across all options. Within the Wicklow County Development Plan⁴, there are a number of local area plans which may be impacted by the N11/M11 Scheme.

The types and extents of impacts on settlements and zoning is included in **Table 1.14**.

Table 1.14: Potential impact score of each option with respect to impact on settlements and zoning

Option	Description of Impact	Score / Impact Level	Preference
Corridor Option 1 (North)	Minor or slightly negative impact on lands zoned for Residential and Open Space to the north of Jn 6. Minor or slightly negative impact on lands for Tourism, Local Shops and Services, and Public Utilities between Jn 6 and Jn 7. Minor or slightly negative impact on lands zoned as primary, secondary and tertiary development area in the greater Kilmacanoge area.	3	Least Preferred
Corridor Option 2 (North)	Minor or slightly negative impact on lands zoned for Residential and Open Space to the north of Jn 6. Minor or slightly negative impact on lands for Tourism at Jn 6a. Minor or slightly negative impact on lands zoned as primary, secondary and tertiary development area in the greater Kilmacanoge area.	3	Intermediate
Corridor Option 3 (North)	Minor or slightly negative impact on lands zoned for Residential and Open Space to the north of Jn 6. Minor or slightly negative impact on lands for Tourism at Jn 6a.	3	Preferred
Corridor Option 4 (North)	Minor or slightly negative impact on lands zoned for Residential and Open Space to the north of Jn 6. Minor or slightly negative impact on lands for Tourism, Local Shops and Services, and Public Utilities between Jn 6 and Jn 7.	3	Intermediate
Corridor Option 1 (South)	Minor or slightly negative impact on lands zoned for primary development in the greater Kilmacanoge area. Minor or slightly negative impacts on agriculture and new low density residential zoned lands to the east of Jn 10.	3	Preferred

Option	Description of Impact	Score / Impact Level	Preference
	Minor or slightly negative impacts on industrial zoned lands at Junction 11 (Greystones / Kilpedder / Kilcoole). Minor or slightly negative impacts on lands zoned for agriculture, residential and industrial through Kilpedder and heading further south.		
Corridor Option 2 (South)	Minor or slightly negative impact on lands zoned for primary development in the greater Kilmacanoge area. Moderately negative impacts resulting in severance of lands zoned for agriculture in Newtownmountkennedy Demesne. Minor or slightly negative impact on lands zoned for agriculture, residential and industrial through Kilpedder and heading further south.	2	Intermediate
Corridor Option 3 (South)	Minor or slightly negative impact on lands zoned for primary development in the greater Kilmacanoge area. Minor or slightly negative impact on Residential Special lands associated with Bellevue Demesne to the east of Glen of the Downs. Moderately negative impacts resulting severance of lands zoned for agriculture and new low density residential zoned lands to the east of Junction 10 (Delgany / Drummin). Moderately negative impacts resulting in severance of industrial zoned lands at Junction 11 (Greystones / Kilpedder / Kilcoole). Minor or slightly negative impacts on lands zoned for agriculture, residential and industrial through Kilpedder and heading further south.	2	Least Preferred
Corridor Option 4 (South)	Minor or slightly negative impact on lands zoned for primary development in the greater Kilmacanoge area. Moderately negative impacts resulting severance of lands zoned for agriculture and new low density residential zoned lands to the east of Junction 10 (Delgany / Drummin). Moderately negative impacts resulting in severance of industrial zoned lands at Junction 11 (Greystones / Kilpedder / Kilcoole). Minor or slightly negative impacts on lands zoned for agriculture, residential and industrial through Kilpedder and heading further south.	2	Intermediate
Corridor Option 5 (South)	Minor or slightly negative impact on lands zoned for primary development in the greater Kilmacanoge area. Minor or slightly negative impacts on agriculture and new low density residential zoned lands to the east of Junction 10 (Delgany / Drummin). Minor or slightly negative impacts on industrial zoned lands at Junction 11 (Greystones / Kilpedder / Kilcoole). Minor or slightly negative impacts on lands zoned for agriculture, residential and industrial through Kilpedder and heading further south.	3	Preferred

Northern Section

To the north of Junction 7 (Bray South), the lands impacted by corridor options extents are predominantly lands zoned for OS2 (Open Space) and zoned residential under the Bray Municipal District Local Area Plan 2018-2024.

A parcel of land zoned for tourism is located to the west of the N11 at Junction 6a (Enniskerry) which will be impacted by Corridor Option 2 (North) and Corridor Option 3 (North). A parcel of land associated with Kilbride Church zoned as a 'community area' will fall within Corridor Option 1 (North) and Corridor Option 4 (North). Lands zoned for 'local shops and services' and 'public utilities' are located to the west of Junction 7 (Bray South) and fall within the extents of Corridor Option 1 (North) and Corridor Option 4 (North). In the Kilmacanoge area, in the lands surrounding the existing N11/M11, there are lands zoned for Primary, Secondary and Tertiary Development Areas which will fall within the extents of Corridor Option 1 (North) and Corridor Option 2 (North). Corridor Option 3 (North) and Corridor Option 4 (North) avoid interaction with these lands.

Based on the extents of zoned lands impacted upon, Corridor Option 1 (North) is considered to be least preferred, Corridor Option 3 (North) is considered to be preferred.

Southern Section

To the north of Junction 9 (Glenview), each of the five Southern Section options have a *minor or slightly negative* impact on lands zoned for primary development based on zoning extents in the Bray Municipal District Local Area Plan (LAP). Corridor Option 1 (South) and Corridor Option 5 (South) have *minor or slightly negative* impacts on agriculture and new low density residential zoned lands to the east of Junction 10 (Delgany / Drummin). Further slight impacts on industrial zoned lands at Junction 11 (Greystones / Kilpedder / Kilcoole) are noted. Through Kilpedder and heading further south there are further impacts on lands zoned for agriculture, residential and industrial development – these impacts are shared between all of the Southern Section options. To the south of Newtownmountkennedy the options do not encounter any further zoned lands. The off-line segment of Corridor Option 2 (South) generally avoids zoned lands apart from slight impact with the lands zoned for primary development at its northern extent and some lands zoned for agriculture which would be severed at its southern extent in the Newtownmountkennedy Demesne area. The off-line segments of Corridor Option 3 (South) and Corridor Option 4 (South) encounter similar impacts. Each of these two options sever lands zoned for agriculture, new low density residential and industrial lands. Corridor Option 3 (South) has an additional impact on zoned lands associated with Bellevue Demesne. The severing impacts of these two options results in a *moderately negative* impact on these lands. Corridor Option 3 (South) is considered to be slightly less preferable than Corridor Option 4 (South) in this instance.

Based on the extents of zoned lands impacted upon and the nature of these impacts, Corridor Option 3 (South) is considered to be least preferred, Corridor Option 1 (South) and Corridor Option 5 (South) are considered to be preferred.

1.4.5.2 Residential properties

The assessment of the number of commercial properties impacted by each corridor option is presented in **Table 1.15** and **Table 1.16**.

Table 1.15: Residential properties assessment – Northern Section

Residential Property	Corridor Option 1 (North)	Corridor Option 2 (North)	Corridor Option 3 (North)	Corridor Option 4 (North)
Option Footprint Assessment	28	33	13	17
0-50m Band Outside Option Footprint	524	403	306	366
Live Planning Applications	105*	103*	104*	103*
Qualitative Assessment	Moderately negative	Moderately negative	Minor or slightly negative	Minor or slightly negative
Score / Impact Level	2	2	3	3
Preference	Intermediate	Least Preferred	Preferred	Intermediate
Notes: *Property Count contains a planning application for 96 residential units and another application for 7 residential units. ⁶				

Table 1.16: Residential properties assessment – Southern Section

Residential Property	Corridor Option 1 (South)	Corridor Option 2 (South)	Corridor Option 3 (South)	Corridor Option 4 (South)	Corridor Option 5 (South)
Option Footprint Assessment	11	2	13	10	11
0-50m Band Outside Option Footprint	158	69	114	121	158

Residential Property	Corridor Option 1 (South)	Corridor Option 2 (South)	Corridor Option 3 (South)	Corridor Option 4 (South)	Corridor Option 5 (South)
Live Planning Applications	0	0	1	0	0
Qualitative Assessment	Minor or slightly negative	Minor or slightly negative	Minor or slightly negative	Minor or slightly negative	Minor or slightly negative
Score / Impact Level	3	3	3	3	3
Preference	Intermediate	Preferred	Least Preferred	Intermediate	Intermediate

The urban nature of lands in some areas surrounding the existing N11/M11 is reflected in the relatively high number of direct impacts on residential properties in both the northern and southern sections of the scheme.

The assessment of the existing planning applications indicates that there are planning applications granted for a total of 4 residential property developments located within the extents of the option footprints within each of the corridors in the Northern Section. One of these developments is for 96 residential units, another is for the development of 7 residential units and each of these are impacted upon by all 4 Northern Section options. Corridor Option 1 (North) contains an additional 2 granted planning applications and Corridor Option 3 (North) contains 1 additional granted planning application. A single planning application is noted as being included within the extents of the option footprint of Corridor Option 3 (South).

Corridor Option 2 (North) contains the highest number of direct impacts to residential properties of the northern options with 33 impacts, followed by Corridor Option 1 (North) with 28 direct impacts. These figures reflect the proximity of these corridors to the more major urban settlements. Corridor Option 4 (North) contains 17 direct impacts and Corridor Option 3 (North) contains the fewest direct impacts with 13. Each of these counts reflect the slightly more rural nature of the off-line sections of these corridor options. The numbers of properties located within the 0-50m band outside of the option footprints within the Northern Section corridors are similarly spread, with Corridor Options 1 (North) and 2 (North) containing a greater number of impacts than Corridor Option 3 (North), and as a result the 0-50m band outside of the option footprints are not considered to have a significant effect on the above scoring.

Corridor Option 3 (South) contains the highest number of direct impacts to residential properties of the southern options with 13 impacts, closely followed by Corridor Option 1 (South), Corridor Option 5 (South) and Corridor Option 4 (South) with 11, 11 and 10 direct impacts respectively. Again, these figures reflect the proximity of these corridors to localised urban settlements.

Corridor Option 2 (South) contains only 2 direct impacts to residential properties which is reflective of the more rural nature of the alignment of its off-line segment. The numbers of properties located within the 0-50m band outside of the option footprints within the Southern Section corridors are again spread in a similar proportion to those impacts within the option footprints, and as a result they are not considered to have a significant effect on the above scoring.

1.4.5.3 Commercial properties

The assessment of the number of commercial properties impacted by each corridor option is presented in **Table 1.17** and **Table 1.18**.

Table 1.17: Commercial properties assessment – Northern Section

Commercial Property	Corridor Option 1 (North)	Corridor Option 2 (North)	Corridor Option 3 (North)	Corridor Option 4 (North)
Option Footprint Assessment	28	35	19	22
0-50m Band Outside Option Footprint	255	255	152	155
Live Planning Applications	0	0	0	0
Qualitative Assessment	Moderately negative	Moderately negative	Minor or slightly negative	Minor or slightly negative
Score / Impact Level	2	2	3	3
Preference	Intermediate	Least Preferred	Preferred	Intermediate

Table 1.18: Commercial properties assessment – Southern Section

Commercial Property	Corridor Option 1 (South)	Corridor Option 2 (South)	Corridor Option 3 (South)	Corridor Option 4 (South)	Corridor Option 5 (South)
Option Footprint Assessment	14	8	15	9	15

Commercial Property	Corridor Option 1 (South)	Corridor Option 2 (South)	Corridor Option 3 (South)	Corridor Option 4 (South)	Corridor Option 5 (South)
0-50m Band Outside Option Footprint	127	54	89	93	127
Live Planning Applications	0	0	0	0	0
Qualitative Assessment	Moderately negative	Minor or slightly negative	Moderately negative	Minor or slightly negative	Moderately negative
Score / Impact Level	2	3	2	3	2
Preference	Intermediate	Preferred	Least Preferred	Intermediate	Intermediate

The urban nature of lands in some areas surrounding the existing N11/M11 is again reflected in the relatively high numbers of direct impacts on commercial property in both the northern and southern sections of the scheme.

The assessment of the existing permitted planning applications indicates that there are no planning applications granted for commercial developments located within the extents of the option footprints within each corridor option. There is therefore no impact resulting from planning permissions granted on the overall commercial property counts.

Corridor Option 2 (North) contains the highest number of direct impacts to commercial properties of the northern options with 35 impacts, followed by Corridor Option 1 (North) with 28 direct impacts. These figures reflect the proximity of these corridor options to the more major urban settlements. Corridor Option 4 (North) contains 22 direct impacts and Corridor Option 3 (North) contains the least direct impacts with 19. Each of these counts reflect the slightly more rural nature of the off-line sections of these corridor options. The number of properties located within the 0-50m band outside of the option footprints within each corridor option is similarly proportioned between each option and as a result they are not considered to have a significant effect on the above scoring.

Corridor Option 3 (South) and Corridor Option 5 (South) contain the highest number of direct impacts to commercial properties of the southern options with 15 impacts, closely followed by Corridor Option 1 (South) with 14 direct impacts. Corridor Option 2 (South) contains the fewest number of direct impacts to commercial properties with 8 and Corridor Option 4 (South) contains 9 direct impacts.

The number of properties located within the 0-50m band outside of the option footprints within the Southern Section are again spread in a similar proportion to those impacts within the option footprints and as a result they are not considered to have a significant effect on the above scoring.

1.4.5.4 Community facilities

Community facilities such as schools, hospitals, churches, and community centres are included in this section of the property assessment. Given the proximity of each of the corridor options to urban environments, the risk of impacting on these types of facilities was considered to be relatively high. However, following the assessment of the option footprints within each corridor option, it was noted that no community facilities were present in the property data^{5,6} used in this assessment are actually directly impacted by any of the option footprints within each corridor option in either the northern or southern sections of the N11/M11 Scheme.

The number of community facilities located within the 0-50m band outside of the option footprints within each corridor option are relatively low in the Northern Section of the scheme, ranging from 2 impacts within Corridor Option 4 (North) to 4 impacts within Corridor Option 1 (North) and Corridor Option 3 (North). There are no community facilities noted as being located within the 0-50m band within any of the Southern Section options.

The assessment of the number of community facilities impacted by each corridor option is presented in **Table 1.19** and **Table 1.20**.

Table 1.19: Community facility impacts assessment – Northern Section

Community Facilities	Corridor Option 1 (North)	Corridor Option 2 (North)	Corridor Option 3 (North)	Corridor Option 4 (North)
Option Footprint Assessment	0	0	0	0
0-50m Band Outside Option Footprint	4	3	4	2
Qualitative Assessment	Not significant or neutral	Not significant or neutral	Not significant or neutral	Not significant or neutral
Score / Impact Level	4	4	4	4
Preference	Intermediate	Intermediate	Intermediate	Intermediate

Table 1.20: Community facility impacts assessment – Southern Section

Community Facilities	Corridor Option 1 (South)	Corridor Option 2 (South)	Corridor Option 3 (South)	Corridor Option 4 (South)	Corridor Option 5 (South)
Option Footprint Assessment	0	0	0	0	0
0-50m Band Outside Option Footprint	0	0	0	0	0
Qualitative Assessment	Not significant or neutral	Not significant or neutral	Not significant or neutral	Not significant or neutral	Not significant or neutral
Score / Impact Level	4	4	4	4	4
Preference	Intermediate	Intermediate	Intermediate	Intermediate	Intermediate

The very low number of community facilities across all corridor options in both the northern and southern sections of the scheme result in each option being awarded an impact score of not significant or neutral.

1.4.5.5 Tourism

The property impact assessment in relation to Tourism assets impacted by each corridor option is presented in **Table 1.21**.

Table 1.21: Tourism impacts assessment

Option	Description of Impacts	Score / Impact Level	Preference
Corridor Option 1 (North)	Minor or slightly negative impact on lands zoned for tourism.	3	Preferred
Corridor Option 2 (North)	Direct impact on lands zoned for tourism. Minor or slightly negative impact on walking trails along Dargle River.	3	Intermediate
Corridor Option 3 (North)	Direct impact on lands zoned for tourism. Minor or slightly negative impact on walking trails accessibility on Little Sugarloaf.	3	Intermediate
Corridor Option 4 (North)	Direct impact on proposed Greenway. Minor or slightly negative impact on walking trails accessibility on Little Sugarloaf.	3	Least Preferred
Corridor Option 1 (South)	Potential Minor or slightly negative impact on Cycling Community who rely on the existing N11. Not Significant or neutral impact on access to Glen of the Downs Nature Reserve.	3	Preferred

Option	Description of Impacts	Score / Impact Level	Preference
Corridor Option 2 (South)	Slight impact to walking and cycling trails on Downs Hill. Moderately negative impact to Newtownmountkennedy Demesne.	3	Intermediate
Corridor Option 3 (South)	Slight impact to walking and cycling trails between Glen of the Downs and Bellevue Demesne. Significant impact to Delgany Golf Club.	2	Least Preferred
Corridor Option 4 (South)	Slight impact to walking and cycling trails between Glen of the Downs and Bellevue Demesne. Significant impact to Delgany Golf Club.	2	Least Preferred
Corridor Option 5 (South)	Potential Minor or slightly negative impact on Cycling Community who rely on the existing N11. Not Significant or neutral impact on access to Glen of the Downs Nature Reserve.	3	Preferred

The study area and proposed options form part of the ‘Ireland’s Ancient East’ tourism region. It is considered that the N11/M11 Scheme will have a positive impact on the region overall by providing improved accessibility and reduced journey times to tourist facilities within the region.

Properties such as B&B’s, hotels or hostels may be affected by a loss of passing traffic in some cases and may benefit from a reduction in traffic noise and congestion in others, however, it is not possible to extract the numbers of these property types from the current information, so the impacts are considered to be *minor or slightly negative* across all options.

In the Northern Section of the scheme, a proposed greenway connecting Southern Cross Business Park with Kilmacanoge will be impacted by the off-line segment of Corridor Option 4 (North). This impact will be moderately significant on the development of this greenway. The off-line segments of Corridor Option 2 (North) and Corridor Option 3 (North) will directly impact upon lands zoned for tourism around the Dargle River. There is potential for negative visual impacts arising from any of the off-line options on both the river Dargle and the Little Sugarloaf, both of which areas are popular with walkers. Refer to **Appendix C5** (Landscape and visual) of **Volume C**, for visual impacts. Impacts arising from the on-line option are considered to be minimal, however, there is a potential for a negative impact on the cycling community who rely heavily on the existing N11 for access to the greater Co. Wicklow cycling routes should the on-line option be preferred and potentially upgraded to motorway standard. Corridor Option 2 (North), Corridor Option 3 (North) or Corridor Option 4 (North) would provide a positive impact for the cycling community as these options would reduce existing safety issues associated with heavy traffic on the existing N11 by relocating a high proportion of it to the preferred option.

Corridor Option 1 (South) and Corridor Option 5 (South) will impact upon the access to the Glen of the Downs Nature reserve, however this is likely to be offset by the provision of an improved safer access.

Corridor Option 2 (South) will impact on Downs Hill which is a popular area for walking and mountain biking and contains many paths and trails. Newtownmountkennedy Demesne will also be impacted by this option.

Corridor Option 3 (South) and Corridor Option 4 (South) will impact upon Bellevue Demesne, Delgany Golf Club and many walking trails connecting the Demesne to the Glen of the Downs. Although the impact on Delgany Golf Club as a community amenity can be considered to be a very significant impact, as a tourism property it is not considered to be as significant an impact.

These potential impacts could be considered *minor or slightly negative* in isolation, however, the overall benefits of the provision of an improved N11/M11 corridor will provide a greater benefit to the tourism industry in the surrounding areas overall.

Impacts arising from the on-line options in both the northern and southern sections are considered to be slightly less impactful than the options containing off-line segments. In the Northern Section of the scheme, Corridor Option 1 (North) is considered to be slightly preferred to the options containing off-line segments. Corridor Option 4 (North) is considered to be most impactful as a result of impacts on the proposed greenway and on walking trails on the Little Sugarloaf and is therefore least preferred. In the Southern Section, both Corridor Options 3 (South) and Corridor Option 4 (South) are considered to be equally *Least* preferred as a result of impacts on walking trails, Bellevue Demesne and Delgany Golf Club.

1.5 Summary and conclusions

The overall results of the assessment of Material Assets Non-Agriculture are presented in **Table 1.22**.

Table 1.22: Summary assessment table Northern Section

Attribute		Corridor Option 1 (North)	Corridor Option 2 (North)	Corridor Option 3 (North)	Corridor Option 4 (North)
Infrastructure	Utilities	3	3	3	3
	Transport	3	2	2	2
	Waste Management	4	4	4	4
	Quarries	4	4	4	4
Properties	Settlements & Zoning	3	3	3	3
	Residential	2	2	3	3
	Commercial	2	2	3	3

Attribute		Corridor Option 1 (North)	Corridor Option 2 (North)	Corridor Option 3 (North)	Corridor Option 4 (North)
	Community Facilities	4	4	4	4
	Tourism	3	3	3	3
	Total Impact Score	32	31	34	33
	Overall Impact Score	3	3	3	3
	Overall Impact Description	Minor or slightly negative	Minor or slightly negative	Minor or slightly negative	Minor or slightly negative
	Preference	Least Preferred	Least Preferred	Preferred	Intermediate

In the Northern Section, the assessment of material assets relating to infrastructure reflect a broadly similar level of impact across all options, with much of the infrastructure encountered being located within the existing N11/M11 corridor. The property assessment provides a level of differential impact across the options with Corridor Option 1 (North) and Corridor Option 2 (North) both impacting upon significantly more residential and commercial properties than Corridor Option 3 (North) and Corridor Option 4 (North). Overall, Corridor Option 4 (North) is considered to be the preferred option in the Northern Section in terms of impacts on material assets with Corridor Option 1 (North) and Corridor Option 2 (North) equally least preferred options.

Table 1.23: Summary assessment table Southern Section

Attribute		Corridor Option 1 (South)	Corridor Option 2 (South)	Corridor Option 3 (South)	Corridor Option 4 (South)	Corridor Option 5 (South)
Infrastructure	Utilities	3	2	3	3	3
	Transport	3	3	2	2	3
	Waste Management	4	4	4	4	4
	Quarries	4	4	4	4	4

Attribute		Corridor Option 1 (South)	Corridor Option 2 (South)	Corridor Option 3 (South)	Corridor Option 4 (South)	Corridor Option 5 (South)
Properties	Settlements & Zoning	3	2	2	2	3
	Residential	3	3	3	3	3
	Commercial	2	3	2	3	2
	Community Facilities	4	4	4	4	4
	Tourism	3	3	2	2	3
	Total	33	33	30	31	33
	Overall Impact Score	3	3	2	2	3
	Overall Impact Description	Minor or slightly negative	Minor or slightly negative	Moderately negative	Moderately negative	Minor or slightly negative
	Preference	Preferred	Intermediate	Least Preferred	Intermediate	Preferred

In the Southern Section, the assessment of material assets relating to infrastructure again reflects a broadly similar level of impact across all options.

The most significant, and differentiating, impacts upon utilities infrastructure occurs in Corridor Option 2 (South). The impacts upon settlements and zoning associated with Corridor Option 3 (South) and Corridor Option 4 (South) are significant, as are the impacts on amenities such as Bellevue Demesne and Delgany Golf Club. Overall, Corridor Option 1 (South) and Corridor Option 5 (South) are considered to be the preferred options in terms of impacts on material assets with Corridor Option 3 (South) considered to be least preferred option.

1.6 References

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