

Middlesbrough Council
Stainsby Link Road

Initial Option Assessment Report

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Contents

1	Introduction	1
1.1	The Transport Appraisal Process	1
1.2	Option Assessment Report	2
2	Option Generation	5
3	Option Sifting	7
3.1	Early Assessment and Sifting Tool	7
3.2	Major Road Network Sifting	8
4	Option Assessment Results and Next Steps	10

Figures

Figure 1.1: Detailed Relationship between the Transport Appraisal and Decision-making Processes

Figure 1.2: Steps in the Option Development Process

Figure 2.1: Option Generation Results

Appendices

Appendix A: EAST Appraisal Outputs

Appendix B: Alternative Option Sifting Results

1 Introduction

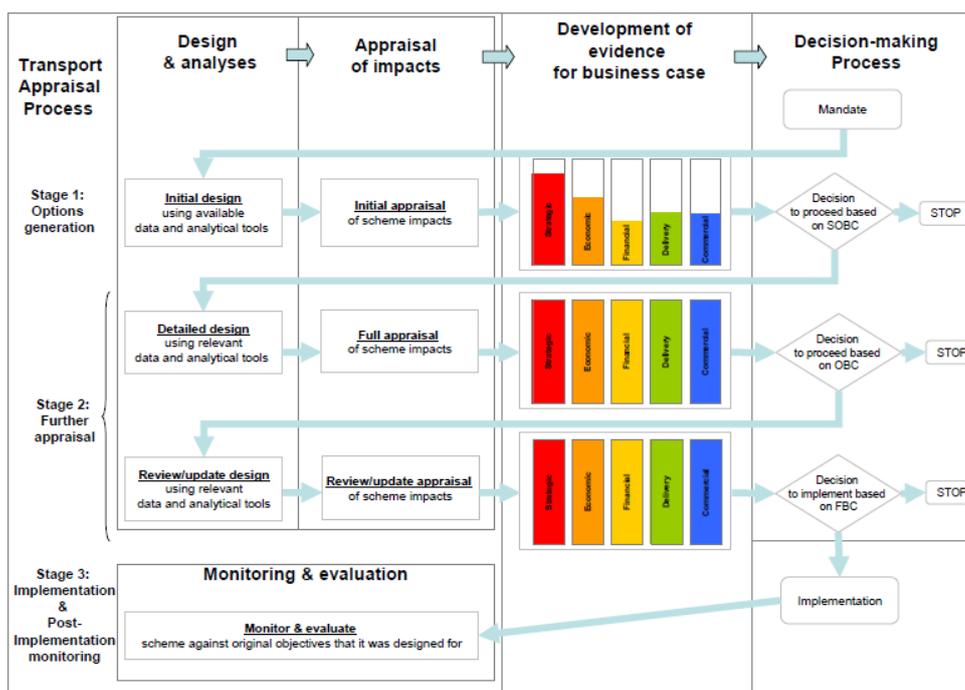
1.1 The Transport Appraisal Process

In developing transport improvements, the process prescribed by the Department for Transport (DfT) is the Transport Appraisal Guidance (TAG) process. This process is divided into three stages as follows:

- Stage 1 - Option development involves identifying the need for intervention and developing options to address a clear set of locally developed objectives which express desired outcomes. These are then sifted for the better performing options to be taken on to further detailed appraisal in Stage 2.
- Stage 2 - Further appraisal of a small number of better performing options in order to obtain sufficient information to enable decision-makers to make a rational and auditable decision about whether or not to proceed with intervention. The focus of analysis is on estimating the likely performance and impact of intervention(s) in sufficient detail.
- Stage 3 - Implementation and post-implementation monitoring.

The relationship between the transport appraisal process and the decision-making process is shown in Figure 1.1.

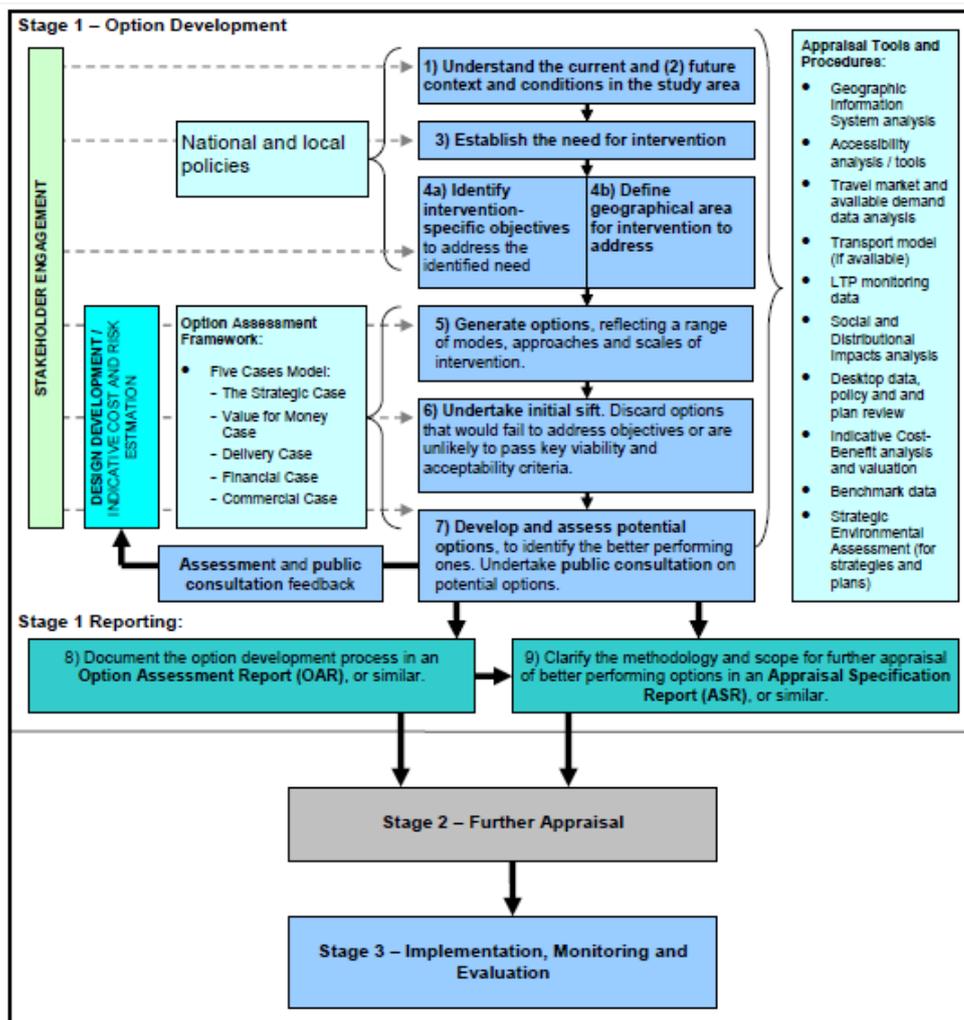
Figure 1.1: Detailed Relationship between the Transport Appraisal and Decision-making Processes



1.2 Option Assessment Report

An Option Assessment Report (OAR) documents the Stage 1 process of identifying the need for intervention and the process of option development and sifting. Stage 1 itself includes a series of eight steps as summarised in Figure 1.2.

Figure 1.2: Steps in the Option Development Process



Steps 1 to 3 in the process relate to defining the need for intervention. In this instance, there is an identified need to consider further highway infrastructure improvements in the Stainsby area of Middlesbrough in order to facilitate housing growth whilst minimising the impact on the Strategic Road Network (SRN), most notably the A19 and the A174.

Policy H21 (Brookfield) of the 2014 Local Plan states that 130 ha of land are allocated at Stainsby Hall Farm and Stainsby Hill Farm for a mixed and balanced residential community. The following uses are considered appropriate:

- Residential - a minimum of 1,670 dwellings (including a minimum of 1,125 to be delivered by 2029);
- Employment (B1 use) - 2ha;
- A local retail centre - to be provided when need arises; and
- A primary school - to be provided when need arises

In addition, the policy requires the creation of a country park, and green corridors to link with other open spaces.

Criterion e) of Policy H21 also requires that the site be accessed from both the B1380 and A1130 creating a link road through the development.

Whilst the requirement for new road infrastructure within the Stainsby site is clearly identified, there is also a need to ensure that the needs of all road users are catered for within the site build-out, particularly active travel and public transport connectivity between the existing and new housing development in South and West Middlesbrough.

It is also clear that any new road infrastructure in this area needs to reflect the needs of other development proposals in the South Middlesbrough area. For example, there is existing congestion at the A19/A174 junction (which benefitted from a significant capacity improvement in 2016), and future capacity issues have been identified at the A19/A1130 junction without further intervention. These constraints could limit the volume of housing that can be provided on the Stainsby site itself and in South Middlesbrough. Congestion on the SRN also leads to adverse impacts on the local road network, particularly Stainton Way and Ladgate Lane, which again may limit the volume of housing that can be accommodated in South Middlesbrough.

At all times, however, the impact of increased traffic on climate change and the local environment needs to be considered and mitigated.

This therefore provides the background to the need for intervention and has led to the identification of a number of objectives for any future transport intervention (Step 4 in the Stage 1 process). These are as follows:

1. To enable the delivery of new housing development as identified in the 2014 Local Plan and to unlock further economic growth and job creation opportunities;
2. To support the efficient operation of the SRN;
3. To reducing existing congestion in the local area;

4. To support all road users accessing the new housing development and moving around within the Stainsby site;
5. To minimise the adverse impacts on the environment and local residents.

Having defined these objectives clearly, the remainder of this Initial OAR covers then steps 5, 6 and 8 in the Stage 1 process, documenting the work undertaken to generate options, sift these options and provide recommendations as to which options the Council should take forward for further assessment in Stage 2, as part of the development of the Stainsby site.

The production of this Initial OAR ensures that decisions made on discarded options are recorded, along with supporting evidence. The initial supporting evidence for feasible options is also summarised. The work also documents how environmental considerations have been taken into account in this process, particularly during the initial sifting stage.

2 Option Generation

A small working group, comprising representatives of Middlesbrough Council, was established to develop a range of potential options to address the need for intervention as identified previously, based on the indicative masterplan set out in the 2014 Local Plan and the desktop work on potential constraints already undertaken.

An initial list of four potential alignments for a new link road was agreed during a workshop session as follows:

- Option 1: Internal Loop - this would be an extension to/from the existing termination point of Jack Simon Way, but would not provide a connection to the A1130 to the north, thereby avoiding the need to cross Blue Bell Beck.
- Option 2: Link Road (Inner) - this is a new link road between the existing termination point of Jack Simon Way and the A1130, broadly following the eastern site boundary, close to the alignment of Blue Bell Beck, and which maximises the developable land available.
- Option 3: Link Road (Outer) - this is a new link road between the existing termination point of Jack Simon Way and the A1130, broadly following the western site boundary, just to the east of the A19, maximising the distance between the new link road and the new and existing housing.
- Option 4: A19 Overpass - this is a new link road between the existing termination point of Jack Simon Way and the A1130, but one which involves crossing the A19 and joining the existing highway network to the west of the junction with the A19.

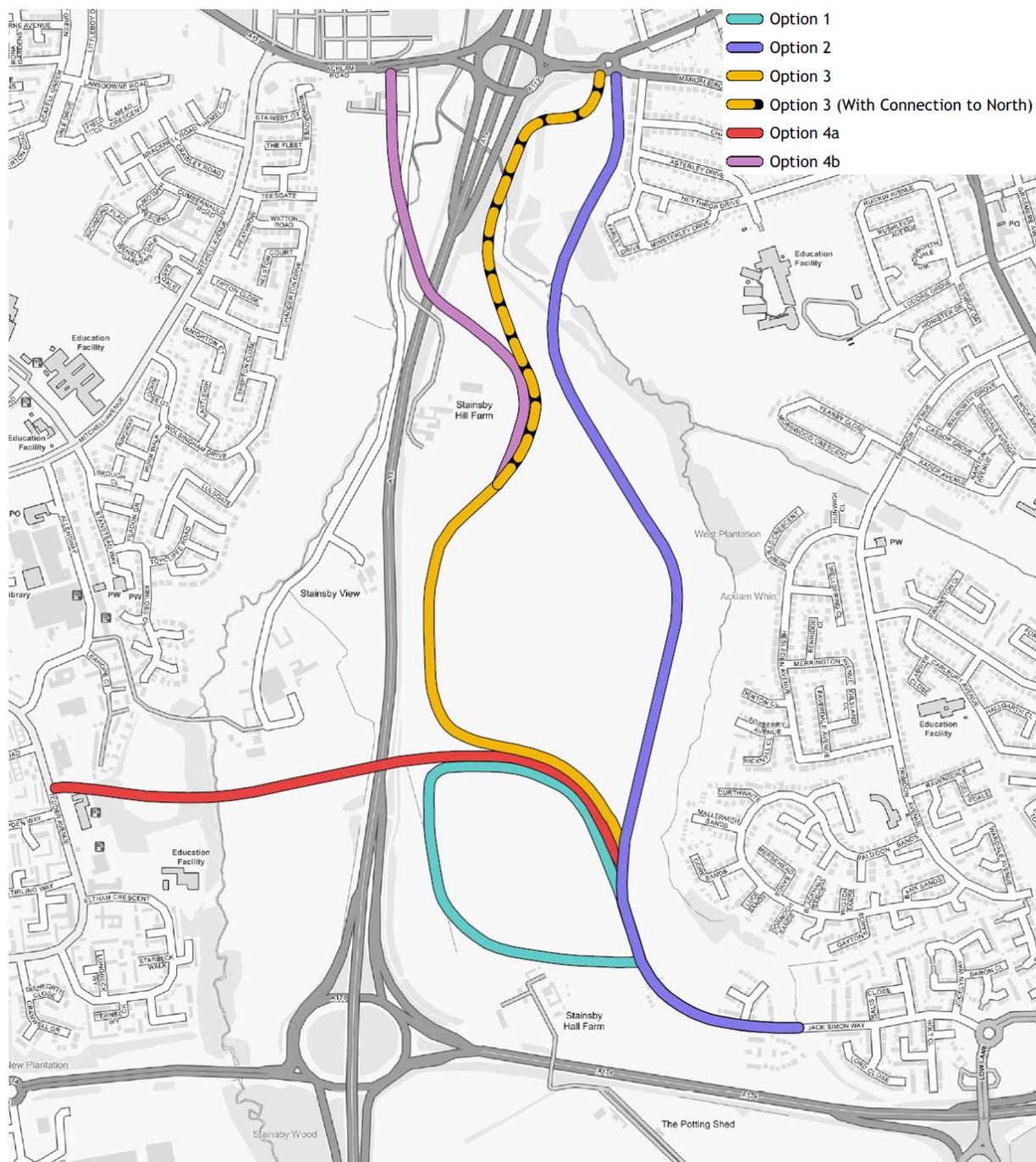
Some consideration was given to a variant of Option 3 whereby the new link road terminated before the crossing of Blue Bell Beck and therefore did not connect into the A1130 - this would be broadly similar in benefits and impacts as Option 1, but would involve a longer route.

Further discussion around Option 4 gave rise to some variations that it was felt useful to consider as part of this Initial OAR. Based on the existing minor road crossing points of the A19 already established two variants of Option 4 were identified:

- Option 4a: Crossing the A19 just to the north of the A19/A174 junction and connecting into Allensway on the western side of the A19.
- Option 4b: Crossing the A19 just to the south of the A19/A1130 junction and broadly following the alignment of the existing farm access to a new junction with the A1130.

All of the options generated for initial sifting are shown on Figure 2.1.

Figure 2.1: Option Generation Results



3 Option Sifting

Following the option generation process, the initial option sifting took place using two separate, but similar, processes.

3.1 Early Assessment and Sifting Tool

The first of these was the use of the DfT's Early Assessment and Sifting Tool (EAST), which is a decision support tool that has been developed to quickly summarise and present evidence on options in a clear and consistent format. It provides decision makers with relevant, high level, information to help them form an early view of how options perform and compare.

EAST is designed so that it can be applied without having to obtain detailed evidence as is usually required to support funding applications. This flexibility allows options to be considered at an early stage of development.

EAST is also designed to be consistent with transport business case principles in that the issues respondents are asked to consider when assessing the economic impact of schemes are the same as those to be addressed in a more detailed way in a full business case.

It is a spreadsheet-based assessment whereby users provide scaled responses across a series of questions for each shortlisted option and then an overall picture is provided of the initial sifting.

The outputs of the EAST appraisal undertaken as part of this Initial OAR are included at Appendix A, mindful that Option 4a and 4b are so similar in terms of the EAST process that they have been considered as a single option.

The EAST appraisal indicates that the key issue with Option 1 is related to the uncertainty over the level of new housing that could be accommodated with simply an internal loop, and the adverse impact on the SRN as a result of the fact that the majority of generated traffic would be directed towards the A19/A174 junction. This is likely to bring forward an objection to the housing proposals from Highways England.

Options 2 and 3 perform similarly, although with Option 3 being further from the existing housing areas of West Middlesbrough and the planned new housing, as well as being adjacent to an existing transport corridor, the social and environmental impacts are considered lower.

Whilst Option 4 also performs similarly to Options 2 and 3, the assessment does draw out the issue (and therefore the risk) of requiring the link road to cross over the A19 and to join the existing highway network outside the Middlesbrough local planning authority area.

In this case, any planning approval for a new link road would involve Stockton-on-Tees Borough Council.

3.2 Major Road Network Sifting

More recently, the Tees Valley Combined Authority (TVCA) has used a variation of the EAST process to undertake a sift of options for schemes to be considered as part of the first tranche of schemes prioritised on the Major Road Network (MRN). The MRN option sifting process used was suggested by TfN so as to provide consistency across the local transport authorities in the North, but is much more bespoke than EAST and provides the opportunity to take more account of local circumstances. Hence, it was felt appropriate to consider the options generated against this alternative approach too.

This alternative option sifting approach consists of a two part process.

First, an initial assessment was undertaken, based on the performance of all options relative to the scheme-specific objectives set out previously, as well as the key objectives of the Tees Valley Strategic Economic Plan (SEP). Second, options were then assessed against the following deliverability criteria:

- **Infrastructure Feasibility:** the degree of engineering challenge associated with delivery of the option;
- **Complexity of Delivery:** the complexity of delivery e.g. planning procedures, interface with delivery partners, stakeholder engagement;
- **Stakeholder Acceptance/Support:** the scheme's likelihood of securing stakeholder acceptance and support.

The results of this alternative option sifting approach (which also considers Options 3a, 4a and 4b separately this time) are presented in Appendix B.

In the first part of the assessment, Option 3 is the only one that does not have any identified negative impacts when considered against the scheme-specific objectives, whereas Options 1 and 3a do not perform well on this basis. These two options also perform less well when viewed against the objectives of the Tees Valley SEP.

In the second part of the assessment, Options 1 and 3a do seem to perform better, but this is expected as there is significantly less infrastructure with either of these options. However, the potential objection of Highways England to these two options should be noted.

Of the other options, again Option 3 seems to perform best, but this time there is a clear advantage of Option 2 over Options 4a and 4b in terms of feasibility and deliverability, with the need to provide a connection over the A19 and the involvement of other planning and highway authorities being particular issues.

All options identified a risk with stakeholder support, although again Option 3 was felt to be the one that would minimise the objections from local residents given the proposed alignment being furthest from the existing and new housing and adjacent to an existing transport corridor. Option 4a would run through a Scheduled Ancient Monument, meaning that it is less desirable than Option 4b should a crossing of the A19 be considered.

4 Option Assessment Results and Next Steps

This Initial OAR documents the process to consider further highway infrastructure improvements in the Stainsby area of West Middlesbrough in order to facilitate housing growth whilst minimising the impact on the SRN.

Based on a two stage option assessment process in line with DfT guidance and recent good practice, it is clear that there are two options worthy of further investigation. These are:

- Option 3: Link Road (Outer) - a new link road between the existing termination point of Jack Simon Way and the A1130, just to the east of the A19;
- Option 2: Link Road (Inner) - a new link road between the existing termination point of Jack Simon Way and the A1130, to the west of the existing housing development.

Of these two options, the EAST analysis indicates that the former has the best balance of benefits and impacts at this stage and clearly has the least impact on local residents. The more bespoke alternative assessment also shows that Option 3 performs best against the scheme-specific objectives developed and would appear to have lower social and environmental impacts.

It is now suggested that these two options be taken forward for further, more detailed, assessment, in line with the next stages of the transport appraisal process set out in Figures 1.1 and 1.2.

Appendix A

EAST Appraisal Outputs

Early Assessment and Sifting Tool (EAST)

Change text size

This tool aims to help you to record and compare data on your options. Below is a summary of all saved options.
 To add a new option: click on the 'Add New Option' button above and complete the assessment sheet.
 To view a saved option: click on its name in the 'Name/No.' column below.
 To delete a saved option: click on the 'Delete' hyperlink to the left of its name below.
 To read further guidance on how to use this tool, please double-click on the 'Tool User Guide' icon above.

 -- To read the user guide to the tool, please double-click on this icon
 User Guide
 4 option(s) have been saved in total. 4 is/are currently visible.

Document

Unique Ref. No.	Overall			Strategic				Economic					Managerial			Financial				Commercial									
	Name/No.	Date	Description	Identified problems and objectives of the option	Scale of impact	Fits with wider transport and government objectives	Fits with other objectives	Key uncertainties	Degree of consensus over 'best' option?	Economic Growth	Carbon emissions	Socio-distributional impacts and the regions	Local environment	Well being	Expected VFM Category	Implementation timetable	Public acceptability	Practical feasibility	What is the quality of the supporting evidence?	Key risks	Attractability	Capital Cost (£m)?	Revenue Costs (£m)?	Cost Profile	Overall cost risk	Other costs	Flexibility of option	Where is funding coming from?	Any income generated? (Y/N)
1	Delete Internal Loop	27/09/2019	A new internal loop extends Existing highway infrastru	1. Small in 2	2		Not clear what level of ne	2	2. Red/Am	1. Red	Green	2. Red/Am	2. Red/Am	5. Poor <1	4. 1-2 vea	2	4	2	Potential negative impact	3	04. 10-25	03. 5-10	Not available	3		3	Tees Valley Investment P	No	
2	Delete Link Road (Inner)	27/09/2019	A new link road extending Existing highway infrastru	4	4	3	New link road needs to c	4	4. Amber/	2. Red/Am	Green	2. Red/Am	3. Amber	2. High 2+ 5.	2-5 vea	2	3	3	Ability to develop an align	3	06. 50-10	04. 10-25	Not available	2		2	Tees Valley Investment P	No	
3	Delete Link Road (Outer)	27/09/2019	A new link road extending Existing highway infrastru	4	4	3	New link road needs to c	4	4. Amber/	2. Red/Am	Green	3. Amber	4. Amber/	2. High 2+ 5.	2-5 vea	2	3	3	Ability to develop an align	3	06. 50-10	04. 10-25	Not available	2		3	Tees Valley Investment P	No	
4	Delete A19 Overpass	27/09/2019	A new link road extending Existing highway infrastru	2	4	2	New link road needs to c	2	3. Amber	3. Amber	Green	2. Red/Am	3. Amber	4. Low 1-1	6. 5-10 ve	2	2	1. Low	Ability to develop an align	2	07. 100-2	05. 25-50	Not available	1.High risk		2	Tees Valley Investment P	No	

Appendix B

Alternative Option Sifting Results

Scoring Scale

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-

Neutral

+

++

+++

Scheme Objectives

1. To enable the delivery of new housing development
2. To support the efficient operation of the SRN
3. To reduce congestion in the local area
4. To support all road users
5. To minimise the adverse impacts on the environment and local residents

Deliverability Criteria

Infrastructure Feasibility: The degree of engineering challenge associated with delivery of the option

Complexity of Delivery: The complexity of delivery e.g. planning procedures, interface with delivery partners, stakeholder engagement

Stakeholder Acceptance/Support: The scheme's likelihood of securing stakeholder acceptance and support

	Option 1	Option 2	Option 3	Option 3a	Option 4a	Option 4b
Alignment with Scheme Objectives						
Support Housing Delivery	Could support some housing, but there will be a restriction based on the A19/A174 junction capacity	Multiple access points will spread the impact of additional traffic and support a greater volume of housing	Multiple access points will spread the impact of additional traffic and support a greater volume of housing	The lack of a through connection to the North will mean the assessment is the same as Option 1	Multiple access points will spread the impact of additional traffic and support a greater volume of housing, but there could be some restriction due to the connection into the existing highway network	Multiple access points will spread the impact of additional traffic and support a greater volume of housing, but there could be some restriction due to the connection into the existing highway network
Score	+	++	++	++	+	+
Support Efficient Operation of the SRN	May actually make the current problems at the A19/a174 junction worse with additional traffic demands	Will improve existing capacity issues at the A19/A174 junction	Will improve existing capacity issues at the A19/A174 junction	As Option 1	Will improve existing capacity issues at the A19/A174 junction	Will improve existing capacity issues at the A19/A174 junction
Score	-	++	++	-	++	++
Reduce Congestion	All additional traffic will be loaded onto Stainton Way/Low Lane, which could create additional congestion on these routes	Multiple access points will spread the impact of additional traffic and help address existing congestion issues	Multiple access points will spread the impact of additional traffic and help address existing congestion issues	All additional traffic will be loaded onto Stainton Way/Low Lane, which could create additional congestion on these routes	Multiple access points will spread the impact of additional traffic, but there is a risk of creating additional congestion on the existing network to the west of the A19	Multiple access points will spread the impact of additional traffic and help address existing congestion issues
Score	-	+	+	-	Neutral	+
Support All Road Users	No Change	Internal connections can help support active travel modes and public transport penetration of the new housing development	Internal connections can help support active travel modes and public transport penetration of the new housing development	No Change	Internal connections can help support active travel modes and public transport penetration of the new housing development	Internal connections can help support active travel modes and public transport penetration of the new housing development
Score	Neutral	++	++	Neutral	++	++
Minimise Impacts on Environment and Local Residents	No Change	New link road is close to existing housing in West Middlesbrough and requires a crossing of Blue Bell Beck	New link road is adjacent to existing highway corridor and removed from existing housing, but requires a crossing of Blue Bell Beck	New link road is adjacent to existing highway corridor and removed from existing housing	New crossing of the A19 will be at a high level, creating additional visual intrusion for housing to the west of the A19	New crossing of the A19 will be at a high level, creating additional visual intrusion for housing to the west of the A19
Score	Neutral	-	Neutral	+	-	-
Alignment with TVCA SEP						
Business Growth	Neutral	+	+	Neutral	+	+
Transport & Infrastructure	Neutral	++	++	Neutral	++	++
Place	Neutral	+	++	Neutral	+	+

	Option 1	Option 2	Option 3	Option 3a	Option 4a	Option 4b
Infrastructure Feasibility	Only a small amount of additional infrastructure over that already provided	Significant new road infrastructure required, but not particularly specialised	Significant new road infrastructure required, but not particularly specialised	New road infrastructure to follow an existing highway corridor	Significant new road infrastructure required, with an additional crossing of the A19	Significant new road infrastructure required, with an additional crossing of the A19
	++	-	-	+	--	--
Complexity of Delivery	Relatively easy to deliver	Low to Moderate complexity - need to cross Blue Bell Beck and take account of undulating topography, but connections at either end already exist	Low to Moderate complexity - need to cross Blue Bell Beck and take account of undulating topography, but connections at either end already exist	Low complexity - alignment can follow existing highway corridor with no crossing of Blue Bell Back required	High complexity - additional crossing of A19 required, together with new connection into existing local network	High complexity - additional crossing of A19 required, together with new connection into existing local network
	+	-	-	--	--	--
Stakeholder Acceptance/Support	Unlikely to be well received by existing housing developers and Highways England may have issues given the adverse impact on the SRN	Moderate stakeholder resistance likely due to proximity to existing housing	Some stakeholder resistance, but alignment is much further from existing housing	As Option 1	Moderate stakeholder resistance likely due to proximity to existing housing and additional crossing of the A19	Moderate stakeholder resistance likely due to proximity to existing housing and additional crossing of the A19
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