APPENDIX F: EARLY ASSESSMENT AND SIFTING TOOL (EAST) APPRAISAL

INTRODUCTION

In order to determine the better performing packages, in line with the DfT's Transport Appraisal Process guidance, a structured sifting process has been followed. This sifting process was undertaken using the DfT's Early Assessment and Sifting Tool (EAST).

EAST is a tool that has been developed to summarise and present evidence on options in a clear and consistent format in order to support decision making. It also aids comparison of how different interventions or packages perform against a wide range of metrics. The EAST is designed to be consistent with the DfT's five case transport business case structure and considers the impact of the scheme under the following business case headings and associated metrics:

- Strategic Case: Scale of impact, fit with wider transport and government objectives, fit with other objectives, consensus over outcomes.
- Economic Case: Economic growth, carbon emissions, socio-distributional impacts, local environment, well-being and value for money
- Management Case: Implementation timetable, public acceptability, practical feasibility, quality of the evidence, key risks.
- Financial Case: Affordability, capital cost (£m), revenue costs (£m), cost risk.
- Commercial Case: Flexibility, income generation.

Table 1 sets out, in greater detail, the metrics that are considered in the EAST appraisal and the scoring mechanism applied. The full EAST appraisal table is set out in the tables below illustrating how each package scores against each metric.

Table 1 EAST Scoring Metrics

Case	Metric	Description	Scoring Mechanism
Strategic	Identification of the problems and objectives.	A description of the identified problems in the study area and the key scheme objectives.	Qualitative statement.
	Scale of impact.	An overall assessment of the impact of the scheme against the scheme objectives. (This assessment draws on the scores from a number of the EAST metrics to determine how the intervention meets the objectives of the scheme)	'1' (Very small) – '5' (Fully addresses the problem).
	Fit with local and regional objectives.	Assessment of the schemes fit with key local and regional transport, economic and wider objectives. Including: - Transport for the North: The Northern Transport Strategy: One Agenda. One Economy. One North - York, North Yorkshire and East Riding Local Enterprise Partnership: Strategic Economic Plan and Local Growth Deal - North Yorkshire County Council: Local Transport Plan 4, Strategic Transport Prospectus - Harrogate Borough Council: Local Plan, Core Strategy. Corporate Plan, Emerging Local Plan - Nidderdale Area of Outstanding Natural Beauty: Management Plan	'1' (Poor fit) – '5' (Excellent fit).
	Fit with wider transport and government objectives.	Assessment of the schemes fit with key transport and government objectives, including: - Department for Transport (DfT): Creating Growth, Cutting Carbon: Making Sustainable Local Transport Happen - DfT: Low Carbon Transport: A Greener Future - DfT: UK plan for tackling roadside nitrogen dioxide concentrations (consultation draft)	Additional relevant policy objectives to be assessed, not included in previous category.
	Key uncertainties.	Summary of the key uncertainties relating to the strategic objectives and the assumptions that have been made.	Qualitative statement.
	Degree of consensus over outcomes.	Assessment of the level of engagement that has taken place and/or the level of agreement around the impact of the intervention.	'1' (Little/no consultation/High level of disagreement) – '5' (Extensive consultation/High degree of consensus)

Case	Metric	Description	Scoring Mechanism
Economic	Economic growth.	Assessment of the impact of the scheme on: - Connectivity. - Reliability. - Resilience. - Delivery of housing. - Wider economic impacts.	RAG[1] scoring. (‘1’ Red – ‘5’ Green).
	Carbon emissions.	Assessment of the impact of the scheme on: - Activity. - Embedded carbon. - Carbon content. - Efficiency. - Overall effect on carbon emissions.	RAG scoring. (‘1’ Red – ‘5’ Green).
	Social and distributional impacts.	Assessment of the impact of the scheme on: - Social and distributional impacts (Air Quality/Noise). - Economy. - Severance/Accessibility. - Safety.	RAG scoring. (‘1’ Red – ‘5’ Green).
	Local environment.	Assessment of the impact of the scheme on: - Air quality. - Noise. - Natural environment, heritage and landscape. - Streetscape and urban environment.	RAG scoring. (‘1’ Red – ‘5’ Green).
	Wellbeing.	Assessment of the impact of the scheme on: - Physical activity. - Injury or death. - Severance. - Crime. - Access to a range of goods, services, people and places.	RAG scoring. (‘1’ Red – ‘5’ Green).
	Expected VfM category.	Discussion on the potential VfM category for the intervention (i.e. the BCR).	RAG scoring. (‘1’ Red – ‘5’ Green).
Management	Implementation timetable.	Estimate of the timescales for implementation, from inception through to delivery.	‘1’ (5 years+) – ‘5’ (< 2 years).
	Public acceptability.	Assessment of the level of public acceptability associated with the scheme, including the likely issues of importance to the public.	‘1’ (Low) – ‘5’ (High).
	Practical feasibility.	Assessment of the practical feasibility of delivering the option, including consideration of the statutory powers needed, planning implications and the construction/engineering feasibility of delivering the option.	‘1’ (Low) – ‘5’ (High).
	Quality of supporting evidence.	Consideration of the quality/applicability of the information used as part of the scheme development and assessment.	‘1’ (Low) – ‘5’ (High).
	Key risks.	Summary of the key scheme risks to the delivery of the intervention.	Qualitative statement.

[1] *RAG 5 level scoring system: Red, Red/Amber, Amber, Amber/Green, Green*

Case	Metric	Description	Scoring Mechanism
Financial	Affordability.	Assessment of affordability, the estimated scheme cost against the level of funding anticipated.	'1' (Not Affordable) – '5' (Affordable).
	Capital cost.	Consideration of the estimated capital cost for delivery of the intervention.	'1' (£50m+) – '5' (<£10m).
	Revenue cost.	Consideration of the estimated revenue cost for the operation/maintenance of the intervention.	1' (£500k+) – '5' (<£50k) p.a.
	Cost profile.	Qualitative statement regarding the anticipated profile of scheme costs, both capital and revenue.	Qualitative statement.
	Overall cost risk.	Assessment of the key areas of risk associated with assumptions informing the high level cost estimates.	'1' (High Risk) – '5' (Low Risk).
Commercial	Flexibility of option.	Assessment of the extent to which the intervention can be scaled up or down, depending on the level of funding available, or amended to fit with changing circumstances.	'1' (Static) – '5' (Dynamic).
	Where is funding coming from?	Qualitative statement regarding the funding of the investment/operation costs for the intervention and the level of certainty.	Qualitative statement.
	Any income generated?	High level estimate of the level of income generated, if applicable.	'1' <£50k (Low/no income) – '5' £500k+ (High income) per annum.

The identified problems and objectives are the same for each package and are summarised below.

IDENTIFIED PROBLEMS AND ISSUES

The Stage 1 Report identified that the existing network is characterised by high traffic volumes, congestion and resulting delays and unreliable journey times. The main contributors to this congestion have been shown to be trips with either an origin or destination (or both) within the urban areas of Harrogate and Knaresborough. When considering purely internal trips, within Harrogate urban area, there is a high propensity for travel by private car, despite the average length of these trips being no more than 2.6km in any peak period.

The identified problems and objectives are the same for each package and are summarised below.

OVERARCHING OBJECTIVES

In order to address the traffic issues experienced in Harrogate and Knaresborough, a set of overarching Strategic Objectives has been devised comprising:

- **SO1**: Support the sustainable growth of Harrogate and Knaresborough in line with national, regional and local policies and plans.
- **SO2**: Improve the quality of life for local communities.
- **SO3**: Support sustainable economic growth.
- **SO4**: Protect and enhance the built and natural environment.
- **SO5**: Improve east-west connectivity.

There is no implied hierarchy between these Strategic Objectives and the numbering system is for ease of reference only. A set of Specific Objectives, which underpin the Strategic Objectives, has also been produced

(see Section 3 of the Options Assessment Report). These Specific Objectives were used as the basis for appraisal of a wide range of potential interventions as part of the initial sift that preceded this EAST appraisal.

EAST APPRAISAL

As set out in **Table** 1, there are various metrics against which each intervention was scored as part of the EAST appraisal. This section sets out how scores were applied against each metric and details of the scoring provided in Table 2 to Table 6.

Given the wide-ranging themes covered in the EAST a multi-discipline team was involved in the scoring of each package against the metrics detailed below, including:

- Transport Planners (including specialists in transport modelling and sustainable transport)
- Environmental Consultants
- Geotechnical Consultants
- Highway Engineers
- Quantity Surveyors

Strategic Case

*Scale of Impact***:** The scale of impact assessment is based upon how each intervention scores against the five Strategic Objectives identified for the scheme, as set out earlier in this note.

*Fit with Wider Transport and Government Objectives and Other Objectives***:** National, regional and local policies and strategies have been reviewed to determine how well each intervention aligns with key objectives, including:

- Economic growth;
- Connectivity;
- Safety;
- Maintaining, protecting, and enhancing environmental quality;
- Accessibility; and
- Resilience.

*Key Uncertainties***:** A qualitative assessment was undertaken considering the key uncertainties associated with development of an intervention. This includes:

- **Scheme Costs**: High level cost estimates.
- **Funding Availability**: If funding is not committed.
- **Ground Conditions**: Potential for unforeseen issues, bedrock and groundwater conditions (dependent upon level of information available).
- **Acceptability**: Stakeholder/public support for interventions if not currently fully understood.

Degree of Consensus Over Outcomes: Determined by level of stakeholder and public consultation previously undertaken.

Economic Case

Economic Growth – This is based on the EAST RAG scoring assessment for the following sub-headings that comprise the economic growth metric:

- **Connectivity:** The strategic traffic model was utilised to establish, at a high-level, the potential impact interventions are forecast to have on reducing journey distances and times (which may also impact costs).

- **Reliability:** High level consideration of the impact interventions will have on journey time reliability and safety i.e. impact on day to day journey time variability and occurrence of incidents that may affect network flow.
- **Wider Economic Impacts:** Other impacts to be considered at later stages of scheme development have been identified but not assessed at this stage, as per WebTAG.
- **Resilience:** Identification of the impact each intervention will have in relation to network operation and resilience e.g. from severe weather events, road closures or the effects of climate change.
- **Delivery of Housing:** The strategic traffic model was used to examine changes in traffic flow and Level of Service (LoS), on various links and at key junctions in the Stage 1 Report. This was taken into account in the high level qualitative assessment as to whether an intervention will facilitate or prevent delivery of housing, impacting the ability of HBC to meet its Local Plan requirements.

Carbon Emissions: Assessment of the potential impact on carbon emissions through consideration of:

- **Changes in Activity** - considering journey lengths change and modal shift.
- **Embedded Carbon** – considers if there is extensive construction involved resulting in extensive carbon emissions.
- **Carbon Content** – considers if the intervention encourages less use of carbon fuel.
- **Efficiency** - considers if the intervention encourages vehicles that use fuel more efficiently or brings about behavioural change.

Social and Distributional Impacts (SDI): Consideration of the impacts on accessibility, affordability, availability and acceptability, particularly for vulnerable groups. The assessment also considers regeneration options and assesses if the intervention has an impact on a targeted regeneration area where poor transport has been identified as a constraint.

Local Environment: Assessment of the suggested interventions' impacts on air quality, noise, natural environment, heritage and landscape, streetscape and urban environment.

Well-being: Consideration of severance, physical activity, injury/death, crime and access to a range of goods, services and people/places.

Value for Money (VfM): At this stage of the study it is not possible to develop an accurate assessment of the Value for Money of a package. Whilst high level indicative scheme cost estimates have been produced, in the absence of a suitable detailed traffic model, it has not been possible to quantify the level of benefits offered by any package. This will be a key area of development as the study progresses.

Management Case

Implementation: High level implementation timeframes were produced in order to assess the feasibility of interventions being delivered in line with indicative funding timescales. This included consideration of preliminary design, detailed design, statutory procedures, construction preparation and construction itself.

Public Acceptability: this looks to consider whether there is likely to be any issues around public acceptability including the following factors:

- Requirement for construction in environmentally sensitive areas (e.g. SSSI, AONB, SAC, SPA).
- Avoidance of disruption during construction.
- Delivery of improved route resilience and journey time reliability.
- Distance from existing properties/structures.
- Likelihood of the need for a Public Inquiry

Practical Feasibility: A wide range of factors were considered in the assessment of the practical feasibility for each intervention, including:

- Type of option tested and proven to be practical and effective.
- Statutory powers and governance/legal protocols in place.

- Planning implications.
- High level assessment of ground conditions.
- Ability for diversion routes to be provided during construction (if required).
- Need for extensive structures.
- Need for departures from standard.

Quality of Supporting Evidence: The quality of supporting evidence informing the analysis was considered for each intervention including:

- Available information regarding road safety, traffic flows, journey times and journey time reliability.
- Mapping and highway related data available for developing conceptual designs (as appropriate for this stage of the study).
- Environmental and geotechnical analysis undertaken e.g. desktop, or ground investigation, walkover surveys etc.

Key Risks: An assessment of the key risks including:

- **Cost/Affordability**: Risk that scheme costs are in excess of any allocated/available funding and will therefore require additional funding to be secured.
- **Acceptability:** Stakeholder/public support is not known at this stage - potential for adverse reaction to construction in the environmentally sensitive areas.
- **Consents/Approvals**: Statutory procedures to be followed and permissions secured, likelihood of Public Inquiry and requirement for business case approval by DfT to secure funding.
- **Ground Conditions**: Unknown/unforeseen ground conditions which could impact delivery.
- **Design**: Uncertainties relating to ground conditions and statutory undertakers impacting design suitability.
- **Construction Programme and Contractual Risks**: Potential risks associated with procurement and timely implementation of the scheme.

Financial Case

- *Capital Cost*: High level capital cost estimate ranges were provided for each intervention considering the requirement for significant structures, works by others and land costs (amongst other metrics).
- *Revenue Costs*: High level consideration of the maintenance, operating and monitoring costs for each intervention were undertaken.
- *Affordability*: Affordability will be based on the level of funding expected to be available, relative to the anticipated capital costs of each intervention.
- *Cost Profile***:** At this stage of the study, no cost profiles have been developed for packages. Whilst high level cost estimates have been developed for each package, further detailed consideration of numerous factors such as ground conditions and construction approach is needed before accurate cost profiles can be developed for all packages.
- *Cost Risks*: Consideration of the degree of risk, from low to high, based on levels of uncertainty in relation to the cost estimates and detail used to inform them.

Commercial Case

Flexibility of Option: The flexibility of each intervention was considered and the degree to which elements of the scheme can be amended or scaled up/down as a result of changing circumstances (such as funding availability).

Funding Source: A qualitative statement relating to the certainty of receiving funding is included. This highlights any opportunities for funding and exact requirements for securing the funding (if known).

Income Generated: refers to whether income can be achieved through provision of the intervention e.g. plans to introduce some form of user charging with the level of income estimated.

Table 2 EAST Results - Package A: Demand Management Package

Package A includes a range of physical and fiscal interventions designed to discourage traffic from the town centre network. Appendix C details the interventions included in Package A.

STRATEGIC CASE								
Scale of Impact		**Fit with Local and Regional Objectives**		**Fit with wider transport and other government objectives**		**Key Uncertainties**	**Degree of Consensus Over Outcomes**	
Score	**Comments**	**Score**	**Comments**	**Score**	**Comments**		**Score**	**Comments**
3.	**Moderate impact expected.** Moderate fit with objectives. Some benefits expected in reducing congestion and improving network resilience and efficiency. Costs are likely to be relatively low. Moderate benefits are expected in terms of safety improvements, changes to level of use of sustainable modes and environmental impacts and economic impacts. Package is likely to be considered acceptable to the public and is relatively flexible/adaptable to change.	**2.**	Economic Growth This package can provide some improvements in efficiency of network through discouraging traffic to travel into the town centre - reducing congestion there which can improve economy through improved reliability of travel, particularly for sustainable modes as well as increased attractiveness of the town. Overall, minimal improvements are expected. East-West Connectivity Connectivity improved for NMUs through reduction of traffic in the town centre but limited E-W connectivity enhancements. Safety Safety improved, particularly for NMUs, through reduction of traffic, and its speed, in the town centre. Environmental Quality Small environmental improvements in town centre due to reduction of traffic in the town centre, benefiting air quality, noise/vibration and townscape. Accessibility Accessibility improved for NMUs through reduction of traffic in the town centre. Delivery of housing/employment Package will not provide any significant improvements to access for new housing/employment development. Improved Health/Physical Activity Some improvements for physical activity due to reduction of traffic in town centre - which can benefit and increase NMUs.	**3.**	Reduce Carbon Emissions Reduced emissions through discouragement of driving into/through the town. Improve Network Efficiency This package can improve efficiency of network through discouraging traffic to travel into the town centre as well as alerting travel of possible issues on the network - reducing congestion and improving reliability of travel. Improve Air Quality Some improvement in air quality in the town centre due to discouragement of driving into/through the town, however overall across the study area impacts likely to be neutral.	Strategic uncertainties include: Cost Only high level cost estimates are available. Funding Currently there is no identified funding for this scheme; Acceptability Stakeholder/public perception or support for scheme is not fully known; Benefits Level of benefits is not fully known, modelling has not been undertaken.	**2.**	Consultation To date there has not been any consultation with the public over any particular package. Some high-level stakeholder engagement has taken place (indicating support of providing improvements in principle).

Economic Case										
Economic Growth		**Carbon Emissions**		**Socio-Distributional Impacts and the Regions**		**Local Environment**		**Well Being**		**Expected VfM Category**
Score	**Comments**	**Score**	**Comments**	**Score**	**Comments**	**Score**	**Comments**	**Score**	**Comments**	
3. Amber	<u>Connectivity</u> Journey times will largely remain unchanged as although traffic is discouraged from the town centre, reducing congestion there, there may be displacement of congestion to other areas. Cost of travel will largely remain the same. <u>Reliability</u> Improved signage, information and other demand management measures enables travel to be adjusted according to prevailing conditions helping reduce congestion and improve journey time reliability. VMS can reduce the impacts of incidents. Likely to be some small improvements in incident numbers due to removal of some traffic from residential and town centre routes. <u>Resilience</u> Unlikely to be significant changes to resilience. <u>Housing</u> Unlikely to be significant impacts to housing delivery. <u>Access to markets/jobs</u> Small improvements based on improved operation/efficiency of the transport network.	**3. Amber**	<u>Construction</u> Minimal construction works involved so limited impact relating to embedded carbon. <u>Vehicle Composition</u> Change in vehicle composition is likely to remain largely the same so no change in emissions as a result of conversion to NMUs. <u>Efficiency</u> May be small reduction in emissions as a result of demand reduction and reduced vehicle kms travelled. Also localised reduced congestion and efficiency of the network for certain modes due to network optimisation.	**3. Amber**	<u>Air Quality/Noise</u> Not expected to create adverse AQ and may have beneficial noise impacts. <u>Severance and Accessibility</u> Reduced impacts of severance in the town centre due to reduction of traffic flows, improving access to facilities in the town, for sustainable modes. Small improvements in accessibility to a range of goods and services in the town centre for NMUs due to reduced traffic/congestion. <u>Safety</u> Safety improved, particularly for NMUs, through reduction of traffic, and its speed, in the town centre. <u>User benefits</u> Journey times and cost of travel will largely remain the same. Some improvements for physical activity due to reduction of traffic in town centre - which can benefit and increase mode share of NMUs.	**3. Amber**	<u>Air Quality</u> Three AQMAs (Bond End, (York Place and Woodlands junction) present within intervention area - unlikely to be adversely impacted. May be positive changes in air quality in town centre as a result of 20mph limit, traffic management/low emission zone and pedestrianisation. Limited impacts elsewhere. <u>Noise</u> Some benefits associated with traffic being discouraged from the town centre, implementation of traffic management/low emission zone and HGV ban at peak times. <u>Natural Environment</u> It is unknown if the demand management measures within this package will have any impact on the natural environment, heritage assets and landscape features within the intervention area, given the location of structures to support this package <u>Townscape/Streetscape</u> It is not anticipated that the package will have any impact on streetscape and the urban environment.	**3. Amber**	<u>Physical Activity</u> Some encouragement in the uptake of NMUs due to reduced vehicular flows in the town centre. <u>Injury or death (safety)</u> Likely to be some small improvements due to removal of some traffic from residential and town centre routes. <u>Severance</u> Reduced impacts of severance in the town due to reduction of traffic flows, improving access to facilities in the town for NMUs. <u>Crime</u> May be some small benefits as a result of improved / increased natural surveillance and increased footfall reducing opportunities for crime. <u>Accessibility</u> Small improvements in accessibility to a range of goods and services in the town centre due to reduced traffic/congestion particularly for sustainable transport modes.	Not Assessed. At this stage of the study it is not possible to develop an accurate assessment of the Value for Money of a package. Whilst high level indicative scheme cost estimates have been produced, in the absence of a suitable traffic model, it has not been possible to quantify the level of benefits offered by any package. This will be a key area of development as the study progresses.

MANAGEMENT CASE

Implementation Timetable		Public Acceptability		Practical Feasibility		Quality of the Supporting Evidence		Key Risks
Score	**Comments**	**Score**	**Comments**	**Score**	**Comments**	**Score**	**Comments**	
1. Five years plus	Most interventions in this package could be delivered in two to five 5 years however, the traffic management/low emission zone could extend delivery over 5 years.	**4.**	<u>Natural Environment</u> Unlikely to be concern regarding overall impacts so general support from environmental groups. <u>Built Environment</u> Likely to be acceptable as will have limited adverse impacts and reduction in vehicle trips in the town centre can improve the setting of the built environment. <u>Travel Impacts</u> Acceptable as it improves resilience, journey time reliability for sustainable modes and is not impacting any different residences. Sustainable travel groups likely to support pedestrianisation, reduced speed limits and reduced traffic in the town centre. <u>Business Impacts</u> Should be beneficial through increased footfall in the town centre but some businesses may consider this package unacceptable as there may be concerns the traffic management/low emission zone and changes to parking regime would impact businesses in the town centre. <u>Public Consultation</u> No public consultation undertaken to date - likely to be mixed opinions on traffic management/low emission zone element. <u>Political Support</u> Mixed support as there may be concerns related to business impacts from reduced parking availability.	**4.**	<u>Environmental conditions</u> No significant environmental issues expected. <u>Design</u> Unlikely to require land take for the majority of interventions in the package, with most interventions being provided within existing highways boundary. <u>Legal/Statutory Permissions</u> Generally legal issues / planning issues are unlikely to be an issue for this package, with the exception of the implementation of a traffic management/low emission zone scheme.	**3.**	<u>Environmental</u> Low level of supporting evidence - including desk based studies, GIS mapping and data available from online government sources. Limited specification in relation to modelling and location of structures. <u>Geotechnical data</u> Ground Conditions: Poor quality evidence – limited localised historical GI data on inner routes but generally reliant on geological maps. Qualitative coal mining data from Coal Authority website. Medium to high risk for Inner North route. Evidence of historical bell pits in the area that may be present beneath the proposed route. Risk of instability to the carriageway. <u>Highways</u> Level information derived from generic LiDAR (2m grid) with levels adjusted to represent actual terrain.	<u>Cost/affordability</u> No identified funding so there is a risk funding will not be secured for delivery. Also risk any potential funding is not sufficient and additional funding is likely to be required from other/local sources (LA contribution) - this has not been identified; <u>Acceptability</u> Stakeholder/public support is not known potential concern relating to support for traffic management/low emission zone. <u>Consents/Approvals</u> Statutory procedures required - particularly for the traffic management/low emission zone scheme, business case approval will be required to release DfT funding. <u>Environmental</u> No significant environmental risks associated with this package. <u>Design</u> Uncertainties relating to detail of interventions meaning it is difficult to gauge the level of benefits/disbenefits. No statutory undertakers information No topographical information. <u>Construction and contractual risks</u> Risks associated with procurement and timely implementation of the scheme exist.

FINANCIAL CASE

Affordability		Capital Cost (£m)		Revenue Costs (£m)		Cost Profile	Overall Cost Risk		Other Costs
Score	**Comments**	**Score**	**Comments**	**Score**	**Comments**		**Score**	**Comments**	
4.	No high cost interventions included in this package. At present no funding has been identified. It is anticipated funding will be sought from DfT when the opportunity arises. Given the nature of the scheme, developer/private contributions are unlikely.	**2. £40-50m**	No detailed cost estimates have been provided however, this is likely to be the least expensive of the five.	**4. £50-£200k**	The major maintenance/operation costs for this package will be incurred through use of VMS and monitoring of the congestion zone interventions.	At this stage of the study, no cost profiles have been developed for packages. Whilst high level cost estimates have been developed for each package, further detailed consideration of numerous factors such as ground conditions and construction approach is needed before accurate cost profiles can be developed for all packages.	**1. High Risk**	In terms of cost risk, a high degree of risk exists for all packages. The initial estimates developed for both capital and revenue costs are at high level and there is large uncertainty surrounding the inputs.	At this early stage, no other significant costs items are anticipated.

COMMERCIAL CASE				
Flexibility of Option	**Flexibility of Option - Comments**	**Where is Funding Coming From?**	**Any Income Generated?**	**If Yes, How Much Income Generated (£m)**
4.	Deliverability/Scalability This package is relatively flexible as interventions can be scaled down if too costly or issues of delivery arise. Similarly if greater funding opportunities exist the package can be scaled up. Issues of land ownership are unlikely to be a factor. Construction/Structures Large scale construction/structures are not required. Changing Circumstances The package can be amended to suit changing circumstances and be easily stopped once in operation.	There is currently no identified funding for this. It is anticipated a Business Case will be submitted to the DfT when a funding stream is established. The exact requirements for securing the funding (e.g. business case) are still to be confirmed. It is anticipated that NYCC would need to provide an element of 'match funding' to support delivery. Given the nature of the scheme, developer/private contributions are unlikely.	**5. £500k+**	Income will be generated via traffic management/low emission zone and changes to parking regime.

Table 3 EAST Results - Package B: Demand Management and Behavioural Changes Package

Package B builds on Package A and includes the same range of physical and fiscal measures to discourage traffic from entering the town centre network. Additional physical improvements are included to encourage use of public transport, cycling and walking. These are complemented by "soft" measures to encourage sustainable travel behaviours and improvements to the urban realm. Appendix C details the individual interventions included in Package B.

STRATEGIC CASE								
Scale of Impact		**Fit with Local and Regional Objectives**		**Fit with wider transport and other government objectives**		**Key Uncertainties**	**Degree of Consensus Over Outcomes**	
Score	**Comments**	**Score**	**Comments**	**Score**	**Comments**		**Score**	**Comments**
4.	Significant impact expected Strong fit with objectives and wider government policy. Larger economic benefits expected through improved efficiency of the network, reductions in congestion and public realm enhancements. Large environmental benefits are expected also through enhanced use of sustainable travel modes. Package is likely to be considered more acceptable to the public due to greater level of benefits and reduced environmental impacts. It is also relatively flexible as it can be scaled up/down.	**4.**	Economic Growth This package can improve efficiency of the network through discouraging traffic from travelling through the town centre - reducing congestion and providing economic benefits through improved reliability of travel and travel time savings. This, combined with public realm improvements and improved accessibility for a wider range of modes will significantly improve the attractiveness of the town encouraging inward investment and increased business and tourist trade. East-West Connectivity Connectivity improved for NMUs through reduction of traffic in the town centre as well as improved information on mode choices for trips in the town but limited E-W connectivity enhancements. Safety Safety improved, particularly for NMUs, through reduction of traffic, and its speed, in the town centre. Environmental Quality Environmental improvements in town centre due to reduction of traffic in the town centre as well as encouragement of uptake of NMUs, benefiting air quality, noise/vibration and townscape. Accessibility Significant improvements in accessibility for NMUs through reduction of traffic in the town centre as well as through public realm improvements and NMU infrastructure and incentivisation for use of non-car modes. Delivery of housing/employment Provision of improved NMU infrastructure and incentivisation for use of NMUs can assist in aiding access and capacity for new housing/employment development. Improved Health/Physical Activity Significant improvements for physical activity due to reduction of traffic in town centre and promotion of NMUs encouraging a more active lifestyle.	**4.**	Reduce Carbon Emissions Significant improvements in air quality due to discouragement of driving into/through the town as well as active encouragement in use of more sustainable transport modes. Improve Network Efficiency This package can improve efficiency of network through discouraging traffic to travel into the town centre as well as alerting travel of possible issues on the network - reducing congestion and improving reliability of travel. Improve Air Quality Large improvements in air quality due to discouragement of driving into/through the town as well as active encouragement in use of more sustainable transport modes.	Strategic uncertainties include: Cost Only high level cost estimates are available. Funding Currently there is no identified funding for this scheme. Acceptability Stakeholder/public perception or support for scheme is not fully known. Benefits Level of benefits is not fully known, detailed modelling has not been undertaken.	**2.**	Consultation To date there has not been any consultation with the public over any particular option/corridor. Some high-level stakeholder engagement has taken place (indicating support of a scheme in principle).

ECONOMIC CASE										
Economic Growth		**Carbon Emissions**		**Socio-Distributional Impacts and the Regions**		**Local Environment**		**Well Being**		**Expected VfM Category**
Score	**Comments**	**Score**	**Comments**	**Score**	**Comments**	**Score**	**Comments**	**Score**	**Comments**	
4. Amber / Green	<u>Connectivity</u> Journey times will improve as traffic is discouraged from the town centre and there will be greater use of sustainable travel modes. Cost of travel will reduce through greater use of NMUs/sustainable modes and improved network efficiency. <u>Reliability</u> Improved signage, information, other demand management measures and improved access to alternative sustainable travel modes enables travel to be adjusted according to prevailing conditions helping reduce congestion and improve journey time reliability. Likely to be some improvements due to removal of some traffic from residential and town centre routes and improved routes for NMUs. VMS can reduce the impacts of incidents. <u>Resilience</u> Unlikely to be significant changes to resilience. <u>Housing</u> Some improvement in opportunities for housing delivery through increased capacity on the network but unlikely to be significant impacts. <u>Access to markets/jobs</u> Larger improvements as improved accessibility will be provided for all modes.	**4. Amber / Green**	<u>Construction</u> Minimal construction works involved so limited impact relating to embedded carbon. <u>Vehicle Composition</u> Change in vehicle composition is likely to result due to promotion of sustainable transport use and conversion of trips from private car to NMUs. <u>Efficiency</u> Reduced emissions as a result of reduced vehicle kms travelled, improved fuel efficiency as the package will facilitate smoother travel, reduced congestion due to network optimisation and promotion of sustainable modes including electric vehicles.	**4. Amber/ Green**	<u>Air Quality/Noise</u> Expected to have benefits in relation to AQ and noise impacts. <u>Severance and Accessibility</u> Reduced impacts of severance in the town centre due to reduction of traffic flows and promotion of non-car mode uses improving access to facilities in the town. Greater access to a variety of locations through greater awareness of travel options and improvements in infrastructure. <u>Safety</u> Safety improved, particularly for NMUs, through reduction of traffic, and its speed, in the town centre. <u>User Benefits</u> Journey times will significantly improve as traffic is discouraged from the town centre and there will be greater use of sustainable travel modes. Cost of travel will reduce through greater use of NMUs/sustainable modes and improved network efficiency. Benefits of increased physical activity	**4. Amber / Green**	<u>Air Quality</u> Three AQMAs (Bond End, (York Place and Woodlands junction) present within intervention area - unlikely to be adversely impacted. Positive changes in air quality in town centre as a result of 20mph limit, traffic management/low emission zone, parking measures and pedestrianisation. Also additional benefits from promotion of sustainable travel across the study area including electric vehicles, walking, cycling etc. creating mode shift from private car. <u>Noise</u> Some benefits associated with traffic being discouraged from the town centre, implementation of traffic management/low emission zone and HGV ban at peak times. <u>Natural Environment</u> Some negative impact expected in relation to siting for a bus/rail station interchange, area wide cycling and public realm strategies. Some of the measures in this suite of package may be constrained given the presence of three Sites of Special Scientific Interest, three Local Nature Reserves, 11 Sites of Importance for Nature Conservation, nine Priority Habitats, nine Conservation Areas, 571 heritage assets, the Nidderdale Area of Outstanding Natural Beauty, the Nidderdale Greenway and the presence of Flood Zones 2 and 3 within the intervention area. Some of the measures within this package would potentially form part of a new visual distractor in the landscape. <u>Townscape/Streetscape</u> Some positive impacts anticipated with improvements as a result of the area wide public realm strategy, depending on where these improvements take place and any direct or indirect impact on the sensitive receptors taken into account.	**5. Green**	<u>Physical Activity</u> Significant increase in use of NMUs due to enhanced provision and awareness for their use as well as reduced vehicular flows in the town centre. <u>Injury or death (safety)</u> Likely to be greater improvements due to removal of some traffic from residential and town centre routes and provision of improvements / infrastructure to enhance travel for vulnerable road users. <u>Severance</u> Reduced impacts of severance in the town centre due to reduction of traffic flows and promotion of non-car mode uses improving access to facilities in the town. <u>Crime</u> Greater benefits expected due to greater footfall in and around the town providing improved / increased natural surveillance reducing opportunities for crime. <u>Accessibility</u> Greater access to a variety of locations through greater awareness of travel options and improvements in infrastructure. This will also reduce costs associated with travel and journey times and their variability.	Not Assessed. At this stage of the study it is not possible to develop an accurate assessment of the Value for Money of a package. Whilst high level indicative scheme cost estimates have been produced, in the absence of a suitable traffic model, it has not been possible to quantify the level of benefits offered by any package. This will be a key area of development as the study progresses.

MANAGEMENT CASE								
Implementation Timetable		**Public Acceptability**		**Practical Feasibility**		**Quality of the Supporting Evidence**		**Key Risks**
Score	**Comments**	**Score**	**Comments**	**Score**	**Comments**	**Score**	**Comments**	
1. Five years plus	Implementation of the majority of interventions would be less than five years however, the large package of schemes combined would likely take a long time to implement, in particular schemes such as the traffic management/low emission zone and bus/rail interchange would involve an implementation over five years.	**4.**	No public consultation undertaken to date. Natural Environment Unlikely to be concern regarding overall impacts so general support from environmental groups expected, particularly given benefits for NMUs and sustainable travel modes. Built Environment Likely to be acceptable as will have limited adverse impacts on built environment and reduction in vehicle trips in the town can improve the setting of the built environment. Travel Impacts Acceptable as it improves resilience, journey time reliability and is not impacting any different residences. Sustainable travel groups likely to support improvements for walking and cycling, reduced speed limits and reduced traffic in the town centre. Business Impacts Should be beneficial through increased footfall in the town centre but some businesses may consider this package unacceptable as there may be concerns the traffic management/low emission zone and changes to parking regime would impact businesses in the town centre. Public Consultation No public consultation undertaken to date - likely to be mixed opinions on traffic management/low emission zone element. Political Support Mixed support as there may be concerns related to business impacts.	**4.**	Environmental conditions No significant environmental issues expected. Design Unlikely to require land take for the majority of interventions in the package, with most interventions being provided within existing highways boundary. Legal/Statutory Permissions Generally legal issues / planning issues are unlikely to be an issue for this package, with the exception of the implementation of a traffic management/low emission zone scheme.	**3.**	Environmental Low level of supporting evidence - including desk based studies, GIS mapping and data available from online government sources. Limited specification in relation to modelling and location of structures. Geotechnical data Ground Conditions: Poor quality evidence – limited localised historical GI data on inner routes but generally reliant on geological maps. Qualitative coal mining data from Coal Authority website. Medium to high risk for Inner North route. Evidence of historical bell pits in the area that may be present beneath the proposed route. Risk of instability to the carriageway. Highways Level information derived from generic LiDAR (2m grid) with levels adjusted to represent actual terrain.	Cost/affordability No identified funding so there is a risk funding will not be secured for delivery. Also risk any potential funding is not sufficient and additional funding is likely to be required from other/local sources (LA contribution) - this has not been identified; Acceptability Stakeholder/public support is not known potential concern relating to support for traffic management/low emission zone. Consents/Approvals Statutory procedures required - particularly for the traffic management/low emission zone scheme, business case approval will be required to release DfT funding. Environmental No significant environmental risks associated with this package. Design Uncertainties relating to detail of interventions meaning it is difficult to gauge the level of benefits/disbenefits, issues such as statutory undertakers can impact design. Construction and contractual risks Risks associated with procurement and timely implementation of the scheme exist.

FINANCIAL CASE

Affordability		Capital Cost (£m)		Revenue Costs (£m)		Cost Profile	Overall Cost Risk		Other Costs
Score	Comments	Score	Comments	Score	Comments		Score	Comments	
3.	High cost scheme (Bus/rail station interchange development and public realm improvements) included, impacting affordability. At present no funding has been identified. It is anticipated funding will be sought from DfT when the opportunity arises. Given the nature of the scheme, developer/private contributions are unlikely.	**1. £50m+**	Due to large number of interventions in this package scheme costs are likely to be high, in particular implementation of the traffic management/low emission zone intervention.	**3. £200-350k**	The major maintenance/operation costs for this package will be incurred through use of VMS and monitoring of the congestion zone interventions. In addition revenue costs will be incurred through the setting up and running of the "softer" measures in this package such as operation of publicity campaigns, journey planners etc.	At this stage of the study, no cost profiles have been developed for packages. Whilst high level cost estimates have been developed for each package, further detailed consideration of numerous factors such as ground conditions and construction approach is needed before accurate cost profiles can be developed for all packages.	**1. High Risk**	In terms of cost risk, a high degree of risk exists for all packages. The initial estimates developed for both capital and revenue costs are at high level and there is large uncertainty surrounding the inputs.	At this early stage, no other significant costs items are anticipated.

COMMERCIAL CASE

Flexibility of Option	Flexibility of Option - Comments	Where is Funding Coming From?	Any Income Generated?	If Yes, How Much Income Generated (£m)
4.	<u>Deliverability/Scalability</u> This package is relatively flexible as interventions can be scaled down if too costly or issues of delivery arise. Similarly if greater funding opportunities exist the package can be scaled up. Issues of land ownership are unlikely to be a factor. <u>Construction/Structures</u> Large scale construction/structures are not required. <u>Changing Circumstances</u> The package can be amended to suit changing circumstances and be easily stopped once in operation.	There is currently no identified funding for this. It is anticipated a Business Case will be submitted to the DfT when a funding stream is established. The exact requirements for securing the funding (e.g. business case) are still to be confirmed. It is anticipated that NYCC would need to provide an element of 'match funding' to support delivery. Given the nature of the scheme, developer/private contributions are unlikely.	**5. £500k+**	Income will be generated via traffic management/low emission zone and changes to parking regime.

Table 4 EAST Results - Package C: Relief Road Package

This package is essentially a single scheme comprising the existing network with an indicative relief road alignment (a corridor) and suitable junctions added allowing traffic to choose its own routes as appropriate.

STRATEGIC CASE								
Scale of Impact		**Fit with Local and Regional Objectives**		**Fit with wider transport and other government objectives**		**Key Uncertainties**	**Degree of Consensus Over Outcomes**	
Score	**Comments**	**Score**	**Comments**	**Score**	**Comments**		**Score**	**Comments**
2.	Minor impact expected The relief road can provide economic benefits by reducing congestion, improving efficiency and reliability of travel along key routes, however, on its own it is not expected to provide large benefits to the town centre. Costs will be relatively high. There are environmental concerns with this package on its own. Any benefits that can be provided through reduction of traffic and congestion on key routes will be largely offset by impacts elsewhere. Limited benefits to NMUs. Likely to be public opposition to this package.	**3.**	Economic Growth Relief road can provide benefit by reducing congestion, improving efficiency and reliability of travel along key routes providing economic benefits. This combined with the improved accessibility it affords can also help stimulate housing and employment growth. East-West Connectivity Connectivity improved by providing a new route to connect across the area, avoiding travel through the Harrogate and Knaresborough urban areas. In addition there will be some benefits for NMUs through removal of through traffic on key routes. Safety Some safety improvements, particularly for NMUs, through reduction in traffic along certain routes. Environmental Quality Overall, adverse as benefits achieved in reductions in travel in AQMAs will be offset by provision of new road in greenbelt. Accessibility Significant improvements in accessibility for all modes as new road will provide additional route across the area and NMUs benefit from removal of through traffic in the town. Delivery of housing/employment Provision of new infrastructure will facilitate growth in surrounding and neighbouring areas (NYCC, Harrogate, Craven, Leeds and Bradford). Provision of new road can open up access for new housing and employment land. Improved Health/Physical Activity Limited increase in use of sustainable transport modes (active modes) through reduction in traffic in the urban areas.	**2.**	Reduce Carbon Emissions Significant improvements in air quality due to discouragement of driving into/through the town as well as active encouragement in use of more sustainable transport modes. Improve Network Efficiency This package can improve efficiency of network through removal of through traffic from key routes reducing congestion and improving reliability of travel. Improve Air Quality Overall, slight adverse impact as no net benefit in air quality from relief road. Potential for new impacts without additional measures to ameliorate the impacts of transference of traffic to other receptors within the intervention area.	Strategic uncertainties include: Cost Only high level cost estimates are available; Funding Currently there is no identified funding for this scheme; Ground Conditions In-depth ground investigation has not been undertaken so there may be unforeseen issues, including uncertain depth of soft soil, ground instability, contamination, location of previous mine workings, bedrock conditions and groundwater conditions. Acceptability Stakeholder/public perception or support for scheme is not fully known. Environmental Acceptability of construction in environmentally sensitive land is uncertain. Benefits Level of benefits is not fully known, modelling has been undertaken on relief road provision only.	**2.**	Consultation To date there has not been any consultation with the public over any particular package. Some high-level stakeholder engagement has taken place (indicating support of providing improvements in principle). Likely that environmental organisations will not support construction in the SSSI and other environmentally sensitive locations/designations.

ECONOMIC CASE										
Economic Growth		**Carbon Emissions**		**Socio-Distributional Impacts and the Regions**		**Local Environment**		**Well Being**		**Expected VfM Category**
Score	**Comments**	**Score**	**Comments**	**Score**	**Comments**	**Score**	**Comments**	**Score**	**Comments**	
4. Amber / Green	Connectivity Journey times will improve as through traffic can avoid travelling through the town helping reduce congestion. However, there may be displacement of congestion to other areas. Small improvements in cost of travel due to resulting improved network efficiency. Reliability Improved reliability due to reduction in congestion on key routes. Reduction in incidents on key routes in the town due to reduced traffic flows. Overall improvements are restricted by small improvements to benefit uptake of other transport modes. Resilience Positive impacts in relation to resilience as relief road provides an alternative route option if other routes are impacted e.g. by severe weather events. Housing The new road can increase capacity of the transport network and accessibility to housing sites aiding housing delivery. Access to markets/jobs The relief road will aid e-w connectivity helping improve access to markets/jobs at a more strategic level.	**2. Red/ Amber**	Construction Construction of a relief road represents significant construction work. Increase in carbon emissions due to construction activities Vehicle Composition No change in vehicle composition is likely to result. Efficiency Relief road provides more direct routing and reductions in rat running which can reduce vehicle kms travelled and therefore reduce overall emissions. Overall, no real change. In the long term, the package will potentially result in an increase in non-traded carbon emissions due to no measures for NMUs.	**2. Red/ Amber**	Air Quality/Noise Slight adverse impacts on AQ and adverse impacts relating to noise. Severance and Accessibility Reduced impacts of severance in the town due to reduction of traffic flows, improving access to facilities in the town. Small improvements in accessibility to a range of goods and services in the urban areas of Harrogate and Knaresborough due to reduced traffic/congestion. Safety Small improvements due to removal of some traffic from key routes. User Benefits Journey times will improve as through traffic can avoid travelling through the urban areas helping reduce congestion. However, there may be displacement of congestion to other areas. Small improvements in cost of travel due to resulting improved network efficiency.	**1. Red**	Air Quality Potential for change in speed limit and traffic given the introduction of a new route alignment and consequently potential changes in air quality impacts within the intervention area. Positive benefits to the AQMAs due to reduction of traffic, however, traffic is moved elsewhere so adverse impacts will be experienced in a different location. Overall, adverse impact as no additional measures to ameliorate the impacts of transference of traffic to other receptors within the intervention area. Noise Package may move traffic away from some sensitive receptors but transfer the traffic and associated disturbance closer to other sensitive receptors including the nine Defra Noise Important Areas within the intervention area. Natural Environment Some negative impact expected in relation to development of a relief road. This package may be constrained given the presence of three Sites of Special Scientific Interest, three Local Nature Reserves, 11 Sites of Importance for Nature Conservation, nine Priority Habitats, nine Conservation Areas, 571 heritage assets, the Nidderdale Area of Outstanding Natural Beauty, the Nidderdale Greenway and the presence of Flood Zones 2 and 3 within the intervention area. The relief road will become a new visual distractor in the landscape. Townscape/Streetscape Some negative impacts anticipated with the introduction of a relief road which traverses urban and rural areas.	**3. Amber**	Physical Activity Small improvements due to reduced through traffic on key routes encouraging increase in NMUs. Injury or death (safety) Small improvements due to removal of some traffic from routes through the urban area. Severance Improvements due to reduction of traffic flows along key routes in the town. Crime No real change expected. Accessibility Small improvements in accessibility to a range of goods and services in the town centre and improvements to journey times, costs and variability due to reduced traffic/congestion.	Not Assessed. At this stage of the study it is not possible to develop an accurate assessment of the Value for Money of a package. Whilst high level indicative scheme cost estimates have been produced, in the absence of a suitable traffic model, it has not been possible to quantify the level of benefits offered by any package. This will be a key area of development as the study progresses.

MANAGEMENT CASE								
Implementation Timetable		**Public Acceptability**		**Practical Feasibility**		**Quality of the Supporting Evidence**		**Key Risks**
Score	**Comments**	**Score**	**Comments**	**Score**	**Comments**	**Score**	**Comments**	
1. Five years plus	Implementation of a relief road will extend delivery over 5 years.	**3.**	<u>Natural Environment</u> Likely to be concern regarding overall impacts of a new road in green belt which will create adverse impacts in new locations - this will likely be considered unacceptable by those affected and environmental groups. <u>Built Environment</u> Likely to be acceptable as it will have limited adverse impacts on built environment and reduction in vehicle trips in the urban areas can improve the setting of the built environment. <u>Travel Impacts</u> Acceptable as it improves resilience, journey time reliability. Sustainable travel groups may support reduction in through traffic but not the limited benefits for sustainable modes. <u>Business Impacts</u> Likely to be considered acceptable as through traffic can avoid the town reducing adverse impacts of congestion and provide journey time reliability improvements. <u>Public Consultation</u> No recent public consultation undertaken but it is expected there would be large scale consultation and a Public Inquiry involved in implementing this package. <u>Political Support</u> Local support as a relief road is included in local policy documentation	**3.**	<u>Environmental conditions</u> Relief Road - Ground conditions including areas of peat and former mine workings may impact relief road route/construction. Slope instability issues adjacent to River Nidd can affect alignments in that location. <u>Design</u> Relief Road - topography constraints and possible cutting issues relating to drainage. Expected design can be developed in in accordance with DMRB standards. Large structures, (bridges) over watercourses are required. <u>Legal/Statutory Permissions</u> Planning permission, EIA, Public Inquiry and land acquisition likely to be required for implementation.	**3.**	<u>Environmental</u> Low level of supporting evidence including desk based studies, GIS mapping and data available from online government sources. Limited specification in relation to modelling and location of structures. <u>Geotechnical data</u> Ground Conditions: Poor quality evidence – limited localised historical GI data on inner routes but generally reliant on geological maps. Qualitative coal mining data from Coal Authority website. Medium to high risk for Inner North route. Evidence of historical bell pits in the area that may be present beneath the proposed route. Risk of instability to the carriageway. <u>Highways</u> Level information derived from generic LiDAR (2m grid) with levels adjusted to represent actual terrain.	<u>Cost/affordability</u> No identified funding so there is a risk funding will not be secured for delivery. Also risk any potential funding is not sufficient and additional funding is likely to be required from other/local sources (LA contribution) - this has not been identified; <u>Acceptability</u> Stakeholder/public support is not known - previous consultations has revealed some opposition to a relief road. <u>Consents/Approvals</u> Statutory procedures required - likely to require a Public Inquiry, business case approval will be required to release DfT funding; <u>Environmental</u> Risk associated with appropriateness of proposal as the scheme passes through environmentally sensitive areas. Location of the relief road alignment within the flood plain. Risk of location of structures to support some measures within the package within and around environmental sensitivities such AQMAs, NIAs, Conservation Areas, Nature Conservation sites, and the AONB. Lack of detailed environmental surveys. Unforeseen ground conditions – High risk due to lack of ground investigation data Risk of recorded and unrecorded coal workings to the east of the Inner North Route. Increased earthworks construction costs – Medium risk for relief road routes due to lack of ground investigation data Increased cost of structural foundations – Medium to High risk for all routes due to lack of ground investigation data. As there is a potential for variable thickness of superficials over bedrock and lack of data on bedrock condition foundations may need to be wide or use of deep piled foundations. Risk of solution features in the Limestone that may cause instability of the carriageway. High risk for Inner routes due to lack of ground investigation data. Risk of slope instability for the Inner North route in southern area close to River Nidd. <u>Design</u> Uncertainties relating to ground conditions and statutory undertakers can impact design. Construction and contractual risks. Risks associated with procurement and timely implementation of the scheme exist.

FINANCIAL CASE									
Affordability		**Capital Cost (£m)**		**Revenue Costs (£m)**		**Cost Profile**	**Overall Cost Risk**		**Other Costs**
Score	**Comments**	**Score**	**Comments**	**Score**	**Comments**		**Score**	**Comments**	
3.	At present no funding has been identified. It is anticipated funding will be sought from DfT when the opportunity arises. Given the nature of the scheme, developer/private contributions are unlikely.	**1. £50m+**	Relief Road is high cost intervention around £200m for Inner North and Killinghall sections and £160m for Inner south and Killinghall sections	**1. £500k+**	Ongoing operation, maintenance and monitoring costs will be incurred for the new road alignments.	At this stage of the study, no cost profiles have been developed for packages. Whilst high level cost estimates have been developed for each package, further detailed consideration of numerous factors such as ground conditions and construction approach is needed before accurate cost profiles can be developed for all packages.	**1. High Risk**	In terms of cost risk, a high degree of risk exists for all packages. The initial estimates developed for both capital and revenue costs are at high level and there is large uncertainty surrounding the inputs.	At this early stage, no other significant costs items are anticipated.

COMMERCIAL CASE				
Flexibility of Option	**Flexibility of Option - Comments**	**Where is Funding Coming From?**	**Any Income Generated?**	**If Yes, How Much Income Generated (£m)**
1. Static	Deliverability/Scalability This package is relatively inflexible as a particular corridor will need to be provided to offer appropriate benefits. Issues of land ownership are likely to be a factor as will issues relating to impacts on the environment. Construction/Structures Large scale construction project with relatively large structures involved. Changing Circumstances Scheme cannot be easily stopped or amended once started.	There is currently no identified funding for this. It is anticipated a Business Case will be submitted to the DfT when a funding stream is established. The exact requirements for securing the funding (e.g. business case) are still to be confirmed. It is anticipated that NYCC would need to provide an element of 'match funding' to support delivery. Given the nature of the scheme, developer/private contributions are unlikely.	**1. <£50k**	No direct income generated

Table 5 EAST Results - Package D: Relief Road and Highway Operational Improvement Measures Package

This package will comprise a relief road corridor (as per Package C) plus physical changes to the existing network and amendments to traffic signage to influence driver behaviour, specifically route choice. The network optimisation and signal strategy interventions would essentially be combined in this package with a view to adjusting the traffic management arrangements, including signals, in order to discourage traffic from using the town centre network and encouraging the use of the relief road. This could also favour pedestrians, cyclists and buses through appropriate signal detection and settings.

STRATEGIC CASE								
Scale of Impact		**Fit with Local and Regional Objectives**		**Fit with wider transport and other government objectives**		**Key Uncertainties**	**Degree of Consensus Over Outcomes**	
Score	**Comments**	**Score**	**Comments**	**Score**	**Comments**		**Score**	**Comments**
3.	<u>Moderate impact expected.</u> Moderate fit with objectives. Larger benefits expected in reducing congestion and improving network resilience and efficiency. Helping boost the economy. Costs will be relatively high. Moderate benefits are expected in terms of safety improvements and changes to level of use of sustainable modes. Some adverse environmental impacts are expected but additional elements to this package will help mitigate these. Likely to be some public opposition to this package.	**4.**	<u>Economic Growth</u> Relief road and network efficiency improvements can provide benefit by reducing congestion, improving efficiency and reliability of travel providing economic benefits. This combined with the improved accessibility it affords can also help stimulate housing and employment growth. <u>East-West Connectivity</u> Connectivity improved by providing a new route to connect across the area avoiding travel through the towns, additionally benefits for NMUs through removal of some traffic in the Harrogate and Knaresborough urban areas. <u>Safety</u> Safety improved, particularly for NMUs, through operational improvements and reduction in traffic in the Harrogate and Knaresborough urban areas. <u>Environmental Quality</u> Slight adverse as benefits achieved in reductions in AQMAs will be offset by provision of new road in greenbelt. <u>Accessibility</u> Significant improvements in accessibility for all modes as new road will provide additional route across the area and NMUs benefit from removal of some traffic in the urban areas. <u>Delivery of housing/employment</u> Provision of new infrastructure will facilitate growth in surrounding and neighbouring areas (NYCC, Harrogate, Craven, Leeds and Bradford). Provision of new road can open up access for new housing and employment land. <u>Improved Health/Physical Activity</u> Active mode use encouraged through reduction of traffic in the urban areas.	**2.**	<u>Reduce Carbon Emissions</u> Reduced emissions in the town as traffic redistributed onto the relief road and also network efficiency improvements. <u>Improve Network Efficiency</u> This package can improve efficiency of network on key routes and through discouraging traffic travelling into the main urban areas as well as alerting travel of possible issues on the network - reducing congestion and improving reliability of travel. <u>Improve Air Quality</u> Localised air quality improvements in the town centre as network efficiency improvements are incorporated and HGV ban at times but overall, across the study area impacts likely to be moderate as benefits in AQMAs from relief road will be offset by new impacts elsewhere.	Strategic uncertainties include: <u>Cost</u> Only high level cost estimates are available. <u>Funding</u> Currently there is no identified funding for this scheme. <u>Ground Conditions</u> In-depth ground investigation has not been undertaken so there may be unforeseen issues, including uncertain depth of soft soil, ground instability, contamination, location of previous mine workings, bedrock conditions and groundwater conditions. <u>Acceptability</u> Stakeholder/public perception or support for scheme is not fully known. <u>Environmental</u> Acceptability of construction in environmentally sensitive land is uncertain. <u>Benefits</u> Level of benefits is not fully known, modelling has been undertaken on relief road provision only.	**2.**	<u>Consultation</u> To date there has not been any consultation with the public over any particular package. Some high-level stakeholder engagement has taken place (indicating support of providing improvements in principle). Likely that environmental organisations will not support construction in the SSSI and other environmentally sensitive locations / designations.

ECONOMIC CASE										
Economic Growth		**Carbon Emissions**		**Socio-Distributional Impacts and the Regions**		**Local Environment**		**Well Being**		**Expected VfM Category**
Score	**Comments**	**Score**	**Comments**	**Score**	**Comments**	**Score**	**Comments**	**Score**	**Comments**	
4. Amber / Green	<u>Connectivity</u> Journey times will improve as through traffic can avoid travelling through the Harrogate and Knaresborough urban areas helping reduce congestion. Greater improvements in cost of travel due to resulting improved network efficiency. <u>Reliability</u> Larger improvements to reliability due to reduction in congestion on key routes. Reduction in incidents on key routes in the town due to reduced traffic flows but restricted by small improvements to the use of other transport modes. <u>Resilience</u> Positive impacts in relation to resilience as relief road provides an alternative route option if other routes are impacted e.g. by severe weather events. <u>Housing</u> The new road can increase capacity of the transport network and accessibility to housing sites aiding housing delivery. <u>Access to markets/jobs</u> The relief road plus operational measures will aid e-w connectivity helping improve access to markets/jobs at a more strategic level as well as local access by improved efficiency of the network.	**2. Red/ Amber**	<u>Construction</u> Construction of a relief road represents significant construction work. Increase in carbon emissions due to construction activities. <u>Vehicle Composition</u> No change in vehicle composition is likely to result. <u>Efficiency</u> Relief road provides more direct routing and reductions in rat running which can reduce vehicle kms travelled and therefore reduce overall emissions. Overall no real change. However, traffic flow should be more efficient due to network optimisation and improved signage. In the long term, the package will potentially result in an increase in non-traded carbon emissions.	**4. Amber / Green**	<u>Air Quality/Noise</u> Neutral impacts on AQ and adverse noise impacts. <u>Severance and Accessibility</u> Medium level improvements due to larger reduction of traffic flows and promotion of non-car mode use in the towns. Medium / large improvements in accessibility to a range of goods and services in the town centre due to reduced traffic/congestion and benefits in journey times, costs, variability etc. due to reduced congestion and increase in NMUs. <u>Safety</u> Small improvements due to removal of some traffic from routes through the Harrogate and Knaresborough urban areas. <u>User Benefits</u> Journey times will improve as through traffic can avoid travelling through the Harrogate and Knaresborough urban areas helping reduce congestion. Greater improvements in cost of travel due to resulting improved network efficiency.	**2. Red/ Amber**	<u>Air Quality</u> Potential for change in speed limit and traffic given the introduction of a new route alignment and consequently potential changes in air quality impacts within the intervention area. Positive benefits to the AQMAs due to reduction of traffic, however traffic is moved elsewhere so adverse impacts will be experienced in a different location. <u>Noise</u> Package may move traffic away from some sensitive receptors but transfer the traffic and associated disturbance closer to other sensitive receptors including the nine Defra Noise Important Areas within the intervention area. <u>Natural Environment</u> Some negative impact expected in relation to the development of a relief road. Some of the measures in this suite of package may be constrained given the presence of three Sites of Special Scientific Interest, three Local Nature Reserves, 11 Sites of Importance for Nature Conservation, nine priority Habitats, nine Conservation Areas, 571 heritage assets, the Nidderdale Area of Outstanding Natural Beauty, the Nidderdale Greenway and the presence of Flood Zones 2 and 3 within the intervention area. Some of the measures within this package would potentially form part of a new visual distractor in the landscape. <u>Townscape/Streetscape</u> Some negative impacts anticipated with the introduction of a relief road which traverses urban and rural areas.	**4. Amber / Green**	<u>Physical Activity</u> Small improvements due to reduced through traffic on key routes encouraging increase in NMUs. <u>Injury or death (safety)</u> Small improvements due to removal of some traffic from the Harrogate and Knaresborough urban areas. <u>Severance</u> Medium level improvements due to larger reduction of traffic flows and promotion of non-car mode use in the town. <u>Crime</u> No real change expected. <u>Accessibility</u> Medium / large improvements in accessibility to a range of goods and services in the Harrogate and Knaresborough urban areas due to reduced traffic/congestion and benefits in journey times, costs, variability etc. due to reduced congestion and increase in NMUs.	Not assessed. At this stage of the study it is not possible to develop an accurate assessment of the Value for Money of a package. Whilst high level indicative scheme cost estimates have been produced, in the absence of a suitable traffic model, it has not been possible to quantify the level of benefits offered by any package. This will be a key area of development as the study progresses.

MANAGEMENT CASE								
Implementation Timetable		**Public Acceptability**		**Practical Feasibility**		**Quality of the Supporting Evidence**		**Key Risks**
Score	**Comments**	**Score**	**Comments**	**Score**	**Comments**	**Score**	**Comments**	
1. Five years plus	The majority of interventions in the package can be delivered quickly however, implementation of a relief road will extend delivery over 5 years.	**3.**	<u>Natural Environment</u> Likely to be concern regarding overall impacts of a new road in green belt which will create adverse impacts in new locations - this will likely be considered unacceptable by those affected and environmental groups. <u>Built Environment</u> Likely to be acceptable as it will have limited adverse impacts on built environment and reduction in vehicle trips in the town can improve the setting of the built environment. <u>Travel Impacts</u> Acceptable as it improves resilience, journey time reliability. Sustainable travel groups may support reduction in through traffic but not the limited benefits for sustainable modes. <u>Business Impacts</u> Likely to be considered acceptable as through traffic can avoid the town and this together with improved signage and network optimisation will reduce adverse impacts of congestion. <u>Public Consultation</u> No recent public consultation undertaken but it is expected there would be large scale consultation and a Public Inquiry involved in implementing this package. <u>Political Support</u> Local support as a relief road is included in local policy documentation	**3.**	<u>Environmental conditions</u> Relief Road - Ground conditions including areas of peat and former mine workings may impact relief road route/construction. Slope instability issues adjacent to River Nidd can affect alignments in that location. <u>Design</u> Relief Road - topography constraints and possible cutting issues relating to drainage. Expected design can be developed in in accordance with DMRB standards. Large structures (bridges) over watercourses are required. <u>Legal/Statutory Permissions</u> Planning permission, EIA, Public Inquiry and land acquisition likely to be required for implementation.	**3.**	<u>Environmental</u> Low level of supporting evidence - including desk based studies, GIS mapping and data available from online government sources. Limited specification in relation to modelling and location of structures. <u>Geotechnical data</u> • Ground Conditions: Poor quality evidence – limited localised historical GI data on inner routes but generally reliant on geological maps. • Qualitative coal mining data from Coal Authority website. Medium to high risk for Inner North route. Evidence of historical bell pits in the area that may be present beneath the proposed route. Risk of instability to the carriageway. <u>Highways</u> Level information derived from generic LiDAR (2m grid) with levels adjusted to represent actual terrain.	<u>Cost/affordability</u> No identified funding so there is a risk funding will not be secured for delivery. Also risk any potential funding is not sufficient and additional funding is likely to be required from other/local sources (LA contribution) - this has not been identified; <u>Acceptability</u> Stakeholder/public support is not known - previous consultations has revealed some opposition to a relief road. <u>Consents/Approvals</u> Statutory procedures required - likely to require a Public Inquiry, business case approval will be required to release DfT funding; <u>Environmental</u> Risk associated with appropriateness of proposal as the scheme passes through environmentally sensitive areas. Location of the relief road alignment within the flood plain. Risk of location of structures to support some measures within the package within and around environmental sensitivities such AQMAs, NIAs, Conservation Areas, Nature Conservation sites, and the AONB. Lack of detailed environmental surveys. Unforeseen ground conditions – High risk due to lack of ground investigation data Risk of recorded and unrecorded coal workings to the east of the Inner North Route. Increased earthworks construction costs – Medium risk for relief road routes due to lack of ground investigation data Increased cost of structural foundations – Medium to High risk for all routes due to lack of ground investigation data. As there is a potential for variable thickness of superficials over bedrock and lack of data on bedrock condition foundations may need to be wide or use of deep piled foundations. Risk of solution features in the Limestone that may cause instability of the carriageway. High risk for Inner routes due to lack of ground investigation data. Risk of slope instability for the Inner North route in southern area close to River Nidd. <u>Design</u> Uncertainties relating to ground conditions and statutory undertakers can impact design. Lack of detail relating to interventions. <u>Construction and contractual risks</u> Risks associated with procurement and timely implementation of the scheme exist.

FINANCIAL CASE									
Affordability		**Capital Cost (£m)**		**Revenue Costs (£m)**		**Cost Profile**	**Overall Cost Risk**		**Other Costs**
Score	**Comments**	**Score**	**Comments**	**Score**	**Comments**		**Score**	**Comments**	
3.	High cost scheme (relief road) included, impacting affordability. At present no funding has been identified. It is anticipated funding will be sought from DfT when the opportunity arises. Given the nature of the scheme, developer/private contributions are unlikely.	**1. £50m+**	Relief Road is high cost intervention around £200m for Inner North and Killinghall sections and £160m for Inner south and Killinghall sections	**1. £500k+**	Ongoing operation, maintenance and monitoring costs will be incurred for the new road alignments plus costs for maintenance/operation of VMS and monitoring of the congestion zone.	At this stage of the study, no cost profiles have been developed for packages. Whilst high level cost estimates have been developed for each package, further detailed consideration of numerous factors such as ground conditions and construction approach is needed before accurate cost profiles can be developed for all packages.	**1. High Risk**	In terms of cost risk, a high degree of risk exists for all packages. The initial estimates developed for both capital and revenue costs are at high level and there is large uncertainty surrounding the inputs.	At this early stage, no other significant costs items are anticipated.

COMMERCIAL CASE				
Flexibility of Option	**Flexibility of Option - Comments**	**Where is Funding Coming From?**	**Any Income Generated?**	**If Yes, How Much Income Generated (£m)**
2.	<u>Deliverability/Scalability</u> Elements of the package are relatively flexible as they can be scaled up/down. The relief road aspect is relatively inflexible as a particular corridor will need to be provided to offer appropriate benefits. Issues of land ownership are likely to be a factor as will issues relating to impacts on the environment. <u>Construction/Structures</u> Large scale construction project with relatively large structures involved. <u>Changing Circumstances</u> Relief road element of the scheme cannot be easily stopped or amended once started but the other measures can.	There is currently no identified funding for this. It is anticipated a Business Case will be submitted to the DfT when a funding stream is established. The exact requirements for securing the funding (e.g. business case) are still to be confirmed. It is anticipated that NYCC would need to provide an element of 'match funding' to support delivery. Given the nature of the scheme, developer/private contributions are unlikely.	**1. <£50k**	No direct income generated

Table 6 EAST Results - Package E: Relief Road plus Highway Operational Improvement Measures, Sustainable Transport and Urban Realm Improvement Interventions Package

This package adds to Package D with additional interventions to provide further enhancement through the introduction of physical measures to encourage sustainable transport use and improve the urban realm of the town centre.

STRATEGIC CASE								
Scale of Impact		**Fit with Local and Regional Objectives**		**Fit with wider transport and other government objectives**		**Key Uncertainties**	**Degree of Consensus Over Outcomes**	
Score	**Comments**	**Score**	**Comments**	**Score**	**Comments**		**Score**	**Comments**
4.	Significant impact expected Strong fit with objectives and wider government policy. Larger economic benefits expected through improved efficiency of the network, reductions in congestion, reliability of travel and public realm enhancements. This will also improve the attractiveness of the town centre. Environmental benefits are expected through enhanced use of sustainable travel modes, although some adverse impacts will result from the implementation of the relief road element. Package is likely to be considered more acceptable to the public due to greater level of benefits and reduced environmental impacts compared with Packages C and D. It is more flexible than packages C and D as offers some opportunity to be scaled up/down.	**5. Excellent fit**	Economic Growth Relief road and network efficiency improvements can provide benefit by reducing congestion, improving efficiency and reliability of travel providing economic benefits. This combined with the improved accessibility it affords can also help stimulate housing and employment growth. East-West Connectivity Connectivity improved by providing a new route to connect across the area avoiding travel through the Harrogate and Knaresborough urban areas, additionally significant benefits for NMUs through removal of some traffic in the urban areas and provision of additional infrastructure and enhancements. Safety Safety improved, particularly for NMUs, through operational improvements and reduction in traffic in the Harrogate and Knaresborough urban areas. Environmental Quality Beneficial as greater benefits are achieved in reductions in travel in town centre and update of more sustainable modes. Provision of new road in greenbelt will provide some adverse impacts but does provide positive impacts in AQMAs. Accessibility Significant improvements in accessibility for all modes as new road will provide additional route across the area and NMUs benefit from removal of some traffic in the Harrogate and Knaresborough urban areas. Delivery of housing/employment Provision of new infrastructure will facilitate growth in surrounding and neighbouring areas (NYCC, Harrogate, Craven, Leeds and Bradford). Provision of new road can open up access for new housing and employment land. Improved Health/Physical Activity Active mode use encouraged through reduction in traffic in the town centre and provision of NMU infrastructure improvements on relief road.	**4.**	Reduce Carbon Emissions Significant reduction in emissions through discouragement of driving into/through the town and promotion of alternative more sustainable modes reducing overall car travel. Improve Network Efficiency This package can significantly improve efficiency of network through removal of through traffic from the town and reduction of traffic generally through encouragement of sustainable mode use, further reducing congestion and improving reliability of travel. Improve Air Quality Wider air quality improvements through discouragement of driving into/through the town and promotion of alternative more sustainable modes reducing overall car travel. Benefits to AQMAs from relief road but offset by new impacts elsewhere.	Strategic uncertainties include: Cost Only high level cost estimates are available; Funding Currently there is no identified funding for this scheme; Ground Conditions In-depth ground investigation has not been undertaken so there may be unforeseen issues, including uncertain depth of soft soil, ground instability, contamination, location of previous mine workings, bedrock conditions and groundwater conditions. Acceptability Stakeholder/public perception or support for scheme is not fully known. Environmental Acceptability of construction in environmentally sensitive land is uncertain. Benefits Level of benefits is not fully known, modelling has been undertaken on relief road provision only.	**2.**	Consultation To date there has not been any consultation with the public over any particular package. Some high-level stakeholder engagement has taken place (indicating support of providing improvements in principle). Likely that environmental organisations will not support construction in the SSSI and other environmentally sensitive locations / designations.

ECONOMIC CASE										
Economic Growth		**Carbon Emissions**		**Socio-Distributional Impacts and the Regions**		**Local Environment**		**Well Being**		**Expected VfM Category**
Score	**Comments**	**Score**	**Comments**	**Score**	**Comments**	**Score**	**Comments**	**Score**	**Comments**	
5. Green	<u>Connectivity</u> Journey times will improve as through traffic can avoid travel through the urban areas helping reduce congestion. Also vehicular traffic flow, generally, will reduce due to greater uptake of more sustainable modes. <u>Reliability</u> Significant improvements to reliability due to a reduction in congestion in the Harrogate and Knaresborough urban areas and improvements to encourage use of other transport modes. Also likely to be a larger reduction in incidents on key routes in the town due to the reduced traffic flows and improved infrastructure for more sustainable transport modes. <u>Resilience</u> Positive impacts in relation to resilience as relief road provides an alternative route option if other routes are impacted e.g. by severe weather events. <u>Housing</u> The new road can increase capacity of the transport network and accessibility to housing sites aiding housing delivery. <u>Access to markets/jobs</u> Larger benefits as the relief road plus operational measures and sustainable transport interventions will aid e-w connectivity helping improve access to markets/jobs at a more strategic level as well as local access by improved efficiency of the network together with improved opportunities for access via a greater number of modes, particularly sustainable modes.	**3. Amber**	<u>Construction</u> Construction of a relief road represents significant construction work. Increase in carbon emissions due to construction activities. <u>Vehicle Composition</u> The package encourages behavioural change and modal shift to sustainable transport modes. However there is a potential for increased vehicle trips and changes to speed limit in relation to the relief road. <u>Efficiency</u> Relief road provides more direct routing and reductions in rat running which can reduce vehicle kms travelled and therefore reduce overall emissions. However, traffic flow should be more efficient due to network optimisation and improved signage. In the long term, the package will potentially result in an increase in non-traded carbon emissions. However this may be in part be offset by the sustainable transport elements of the package.	**5. Green**	<u>Air Quality/Noise</u> Positive impacts on AQ and neutral for noise. <u>Severance and Accessibility</u> Greater improvements due to larger reduction of traffic flows and promotion of non-car mode use in the town. Larger improvements due to reduced congestion plus improved accessibility for all modes, in particular sustainable transport modes. <u>Safety</u> Larger improvements due to removal of some traffic from routes in the Harrogate and Knaresborough urban areas as well as improved infrastructure for vulnerable users. <u>User Benefits</u> Journey times will improve as through traffic can avoid travel through the Harrogate and Knaresborough urban areas helping reduce congestion. Also vehicular traffic flow, generally, will reduce due to greater uptake of more sustainable modes. Physical activity benefits for NMUs	**4. Amber / Green**	<u>Air Quality</u> Potential for change in speed limit and traffic given the introduction of a new route alignment and consequently potential changes in air quality impacts within the intervention area. Positive changes in AQMAs but these are offset by new impacts in new locations however, there is potential for mode shift to sustainable modes providing overall positive impacts. <u>Noise</u> Package may move traffic away from some sensitive receptors but transfer the traffic and associated disturbance closer to other sensitive receptors including the nine Defra Noise Important Areas within the intervention area. However also potential for mode shift to non-motorised modes, lessening adverse impacts. <u>Natural Environment</u> Some negative impact expected in relation to the development of a relief road. Some of the measures in this suite of package may be constrained given the presence of three Sites of Special Scientific Interest, three Local Nature Reserves, 11 Sites of Importance for Nature Conservation, nine priority Habitats, nine Conservation Areas, 571 heritage assets, the Nidderdale Area of Outstanding Natural Beauty, the Nidderdale Greenway and the presence of Flood Zones 2 and 3 within the intervention area. Some of the measures within this package would potentially form part of a new visual distractor in the landscape. <u>Townscape/Streetscape</u> Some negative impacts anticipated with the introduction of a relief road which traverses urban and rural areas. However, this impact is counter-balanced by the positive impact of an area wide public realm strategy.	**5. Green**	<u>Physical Activity</u> Increase in NMU mode share due to enhanced provision and awareness for their use as well as reduced vehicular flows on key routes in the towns. <u>Injury or death (safety)</u> Larger improvements due to removal of some traffic from routes in the Harrogate and Knaresborough urban areas as well as improved infrastructure for vulnerable users. <u>Severance</u> Greater improvements due to larger reduction of traffic flows and promotion of non-car mode use in the town. <u>Crime</u> Greater benefits expected due to greater footfall in and around the town providing improved / increased natural surveillance reducing opportunities for crime. <u>Accessibility</u> Larger improvements due to reduced congestion plus improved accessibility for all modes, in particular sustainable transport modes.	Not Assessed. At this stage of the study it is not possible to develop an accurate assessment of the Value for Money of a package. Whilst high level indicative scheme cost estimates have been produced, in the absence of a suitable traffic model, it has not been possible to quantify the level of benefits offered by any package. This will be a key area of development as the study progresses.

MANAGEMENT CASE								
Implementation Timetable		**Public Acceptability**		**Practical Feasibility**		**Quality of the Supporting Evidence**		**Key Risks**
Score	**Comments**	**Score**	**Comments**	**Score**	**Comments**	**Score**	**Comments**	
1. Five years plus	A number of elements of the package can be delivered relatively quickly however implementation of a relief road and bus/rail interchange will extend delivery over 5 years.	**3.**	<u>Natural Environment</u> Likely to be concern regarding overall impacts of a new road in green belt which will create adverse impacts in new locations - this will likely be considered unacceptable by those affected and environmental groups. However, provision of NMU improvements can offer environmental benefits. <u>Built Environment</u> Likely to be acceptable as it will have limited adverse impacts on built environment and reduction in vehicle trips in the town can improve the setting of the built environment. Public realm benefits will also improve the built environment. <u>Travel Impacts</u> Acceptable as it improves resilience, journey time reliability. Sustainable travel groups may be supportive as there will be a reduction in through traffic as well as improvements in infrastructure to support sustainable modes. <u>Business Impacts</u> Likely to be considered acceptable as through traffic can avoid the town and this together with improved signage and network optimisation will reduce adverse impacts of congestion. <u>Public Consultation</u> No recent public consultation undertaken but it is expected there would be large scale consultation and a Public Inquiry involved in implementing this package. <u>Political Support</u> Local support as a relief road is included in local policy documentation	**3.**	<u>Environmental conditions</u> Relief Road - Ground conditions including areas of peat and former mine workings may impact relief road route/construction. Slope instability issues adjacent to River Nidd can affect alignments in that location. <u>Design</u> Relief Road - topography constraints and possible cutting issues relating to drainage. Expected design can be developed in in accordance with DMRB standards. Large structures (bridges) over watercourses are required. <u>Legal/Statutory Permissions</u> Planning permission, EIA, Public Inquiry and land acquisition likely to be required for implementation.	**3.**	<u>Environmental</u> Low level of supporting evidence - including desk based studies, GIS mapping and data available from online government sources. Limited specification in relation to modelling and location of structures. <u>Geotechnical data</u> Ground Conditions: Poor quality evidence – limited localised historical GI data on inner routes but generally reliant on geological maps. Qualitative coal mining data from Coal Authority website. Medium to high risk for Inner North route. Evidence of historical bell pits in the area that may be present beneath the proposed route. Risk of instability to the carriageway. <u>Highways</u> Level information derived from generic LiDAR (2m grid) with levels adjusted to represent actual terrain.	<u>Cost/affordability</u> No identified funding so there is a risk funding will not be secured for delivery. Also risk any potential funding is not sufficient and additional funding is likely to be required from other/local sources (LA contribution) - this has not been identified; <u>Acceptability</u> Stakeholder/public support is not known - previous consultations has revealed some opposition to a relief road. <u>Consents/Approvals</u> Statutory procedures required - likely to require a Public Inquiry, business case approval will be required to release DfT funding; <u>Environmental</u> Risk associated with appropriateness of proposal as the scheme passes through environmentally sensitive areas. Location of the relief road alignment within the flood plain. Risk of location of structures to support some measures within the package within and around environmental sensitivities such as AQMAs, NIAs, Conservation Areas, Nature Conservation sites, and the AONB. Lack of detailed environmental surveys. Unforeseen ground conditions – High risk due to lack of ground investigation data Risk of recorded and unrecorded coal workings to the east of the Inner North Route. Increased earthworks construction costs – Medium risk for relief road routes due to lack of ground investigation data Increased cost of structural foundations – Medium to High risk for all routes due to lack of ground investigation data. As there is a potential for variable thickness of superficials over bedrock and lack of data on bedrock condition foundations may need to be wide or use of deep piled foundations. Risk of solution features in the Limestone that may cause instability of the carriageway. High risk for Inner routes due to lack of ground investigation data. Risk of slope instability for the Inner North route in southern area close to River Nidd. <u>Design</u> Uncertainties relating to ground conditions and statutory undertakers can impact design. Lack of detail relating to interventions. <u>Construction and contractual risks</u> Risks associated with procurement and timely implementation of the scheme exist.

FINANCIAL CASE									
Affordability		**Capital Cost (£m)**		**Revenue Costs (£m)**		**Cost Profile**	**Overall Cost Risk**		**Other Costs**
Score	**Comments**	**Score**	**Comments**	**Score**	**Comments**		**Score**	**Comments**	
2.	Two high cost schemes (relief road and Bus/rail station interchange development and public realm improvement) included impacting affordability. At present no funding has been identified. It is anticipated funding will be sought from DfT when the opportunity arises. Given the nature of the scheme, developer/private contributions are unlikely.	**1. £50m+**	Relief Road is high cost intervention around £200m for Inner North and Killinghall sections and £160m for Inner south and Killinghall sections. This is likely to be the most expensive package.	**1. £500k+**	Ongoing operation, maintenance and monitoring costs will be incurred for the new road alignments plus costs for maintenance/operation of VMS and monitoring of the congestion zone.	At this stage of the study, no cost profiles have been developed for packages. Whilst high level cost estimates have been developed for each package, further detailed consideration of numerous factors such as ground conditions and construction approach is needed before accurate cost profiles can be developed for all packages.	**1. High Risk**	In terms of cost risk, a high degree of risk exists for all packages. The initial estimates developed for both capital and revenue costs are at high level and there is large uncertainty surrounding the inputs.	At this early stage, no other significant costs items are anticipated.

COMMERCIAL CASE				
Flexibility of Option	**Flexibility of Option - Comments**	**Where is Funding Coming From?**	**Any Income Generated?**	**If Yes, How Much Income Generated (£m)**
2.	<u>Deliverability/Scalability</u> Elements of the package are relatively flexible as they can be scaled up/down. The relief road aspect is relatively inflexible as a particular corridor will need to be provided to offer appropriate benefits. Issues of land ownership are likely to be a factor as will issues relating to impacts on the environment. <u>Construction/Structures</u> Large scale construction project with relatively large structures involved. <u>Changing Circumstances</u> Relief road element of the scheme cannot be easily stopped or amended once started but the other measures can.	There is currently no identified funding for this. It is anticipated a Business Case will be submitted to the DfT when a funding stream is established. The exact requirements for securing the funding (e.g. business case) are still to be confirmed. It is anticipated that NYCC would need to provide an element of 'match funding' to support delivery. Given the nature of the scheme, developer/private contributions are unlikely.	**1. <£50k**	No direct income generated