

Value for Money

INTRODUCTION

The scheme has been appraised utilising the best available data and proportionate methodologies, in line with Transport Appraisal Guidance, to ascertain the benefits arising from the interventions. Scheme costs have been developed based on current knowledge and risks, which will be further developed for the Full Business Case submission. Both costs and benefits for each of the individual elements, as well as the overall scheme package have been assessed in line with the current HM Green Book appraisal methodology to derive the overall cost-benefit ratio of the scheme package to inform the Value for Money categorisation outlined in the following sections.

SENSITIVITY AND RISK PROFILE

The economic appraisal has been undertaken for a Core Growth scenario, based on current forecast changes in Marginal External Cost values produced by the DfT for use in forecasting and appraisal. The 'Core' Growth scenario is presented here, which is deemed to be the most likely projection.

TAG is currently undergoing significant changes to reflect the post COVID impacts on future travel behaviours and the impact of Brexit. These projections are the latest forecasts and therefore should be considered as a robust appraisal of the potential benefits arising from the scheme package interventions. Values are presented for each package element, as well as a combined Programme of Work for the Core scenario in **Table 1** below.

Table 1: Economic Appraisal Summary Table: Core scenario

Core Scenario		North Shields	Percy Main	Northumberland Park	Whitley Bay	Combined
AMAT Benefits: R2M	Congestion benefit	£16.18	£4.29	£2.06	£20.89	£43.42
	Infrastructure maintenance	£0.09	£0.02	£0.01	£0.12	£0.24
	Accident	£2.78	£0.74	£0.35	£3.59	£7.47
	Local air quality	£0.40	£0.11	£0.05	£0.51	£1.06
	Noise	£0.19	£0.05	£0.02	£0.24	£0.50
	Greenhouse gases	£1.35	£0.36	£0.17	£1.74	£3.62
	Reduced risk of premature death	£441.81	£115.79	£56.72	£601.19	£1,215.51
	Absenteeism	£57.13	£14.37	£7.18	£79.27	£157.95
	Journey ambience	£368.60	£799.82	£315.41	£2,590.35	£4,074.17
	Indirect taxation	-£1.69	-£0.45	-£0.22	-£2.18	-£4.54
PVB (Discounted to 2010 prices and values)		£886.74	£935.07	£381.76	£3,295.72	£5,499.30
AMCB	Total PVB (Discounted to 2010 prices and values)	£886.74	£935.07	£381.76	£3,295.72	£5,499.30
	PVC (Discounted to 2010 prices and values)					£3,237.46
	NPV					£2,261.84
	BCR					1.70

In order to test the robustness of the economic appraisal a number of sensitivity tests have been carried as described below.

It should be noted that assessment of the public realm, cycle and pedestrian elements of the scheme package have been appraised using the DfT's Active Mode Appraisal Toolkit (AMAT), in line with a proportionate approach to appraisal.

It should be noted that transport schemes which are public transport based which has a negative impact on private car users often struggle to receive a positive BCR due to the dominance of private vehicle on the road.

There are a number of benefits that the scheme is expected to incur which are not captured by the AMAT. It is expected that the introduction of high quality walking and cycling infrastructure will have a beneficial impact on security. In addition to security, it is expected that the improved infrastructure would improve accessibility and decreased severance for the local residents due to improved walking and cycling links to the local Metro network.

SENSITIVITY TEST 1 - 11% INCREASE IN CONSTRUCTION COSTS

A sensitivity test has been undertaken to represent the rising energy prices as well as a potential scarcity of resources as a result of the on-going conflict in Ukraine. The increase in cost was provided by North Tyneside Council who observed that the cost of projects currently being delivered in the Borough have increased by 11%.

The impact on the economic appraisal for the sensitivity test is summarised in the **Table 2**.

Table 2: Economic Appraisal Summary Table: Sensitivity Test 1 – Increased Costs

Increased Cost Scenario		North Shields	Percy Main	Northumberland Park	Whitley Bay	Combined
AMAT Benefits: R2M	Congestion benefit	£16.18	£4.29	£2.06	£20.89	£43.42
	Infrastructure maintenance	£0.09	£0.02	£0.01	£0.12	£0.24
	Accident	£2.78	£0.74	£0.35	£3.59	£7.47
	Local air quality	£0.40	£0.11	£0.05	£0.51	£1.06
	Noise	£0.19	£0.05	£0.02	£0.24	£0.50
	Greenhouse gases	£1.35	£0.36	£0.17	£1.74	£3.62
	Reduced risk of premature death	£441.81	£115.79	£56.72	£601.19	£1,215.51
	Absenteeism	£57.13	£14.37	£7.18	£79.27	£157.95
	Journey ambience	£368.60	£799.82	£315.41	£2,590.35	£4,074.17
	Indirect taxation	-£1.69	-£0.45	-£0.22	-£2.18	-£4.54
PVB (Discounted to 2010 prices and values)	£886.74	£935.07	£381.76	£3,295.72	£5,499.30	
AMCB	Total PVB (Discounted to 2010 prices and values)	£886.74	£935.07	£381.76	£3,295.72	£5,499.30
	PVC (Discounted to 2010 prices and values)					£3,388.58
	NPV					£2,110.72
	BCR					1.62

SENSITIVITY TEST 2 – INCREASED UPLIFT OF CYCLISTS

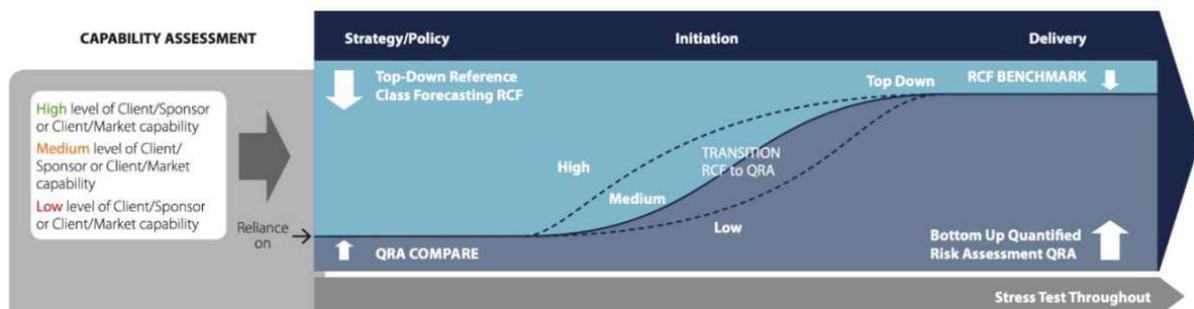
During 2020, North Tyneside Council implemented a number of cycle friendly schemes within the Borough which resulted in a 58% increase in cyclists across North Tyneside. Therefore this uplift has been applied to Sensitivity Test 2 as an optimistic high demand scenario. The impact on the economic appraisal for the sensitivity test is summarised in the **Table 3**.

Table 3: Economic Appraisal Summary Table: Sensitivity Test 2 – High Growth Scenario

58% Cycling Uplift		North Shields	Percy Main	Northumberland Park	Whitley Bay	Combined
AMAT Benefits: R2M	Congestion benefit	£75.68	£21.56	£9.82	£89.97	£197.04
	Infrastructure maintenance	£0.43	£0.12	£0.06	£0.51	£1.11
	Accident	£13.02	£3.71	£1.69	£15.48	£33.89
	Local air quality	£1.85	£0.53	£0.24	£2.20	£4.82
	Noise	£0.87	£0.25	£0.11	£1.03	£2.26
	Greenhouse gases	£6.32	£1.80	£0.82	£7.51	£16.45
	Reduced risk of premature death	£1,671.30	£484.55	£222.40	£2,076.20	£4,454.44
	Absenteeism	£173.16	£48.04	£22.31	£213.98	£457.49
	Journey ambience	£441.30	£992.40	£389.93	£3,209.25	£5,032.88
	Indirect taxation	-£7.90	-£2.25	-£1.02	-£9.39	-£20.56
	PVB (Discounted to 2010 prices and values)	£2,375.60	£1,550.58	£646.29	£5,606.23	£10,178.70
AMCB	Total PVB (Discounted to 2010 prices and values)	£2,375.60	£935.07	£646.29	£5,606.23	£10,178.70
	PVC (Discounted to 2010 prices and values)					£3,237.46
	NPV					£6,941.24
	BCR					3.14

COST UNCERTAINTY

Scheme costs have been developed for each of the elements of the scheme with an associated level of risk applied determined by a Quantitative Risk Assessment (QRA), based on the current design and known investigation of the sites. The QRA can be found in Appendix H of the Full Business Case. The QRA has been developed in line with the approach outlined in WebTAG Unit A1-2 ‘Scheme Costs’ and summarised in the diagram below.



Source: Infrastructure and Projects Authority Risk Management Module (2016), slide 21

The overall budget for the Routes to Metro scheme is £4.32 million with North Tyneside Council providing a local contribution from the LTP fund of £495,330 and the remaining £3.825m being funded by the TCF grant.

North Tyneside Council will enter into a fixed price construction contract inclusive of appropriate contingencies once the FBC is approved and Grant Funding Award signed by the Section 151 Officer. A separate risk pot will be held and administered by North Tyneside Council through its Major Schemes Strategic Board governance arrangement.

The Council acknowledges and accepts that any cost overruns beyond the £3.825 million grant award must be met from Council funds as condition in the Grant Funding Agreement to be entered into upon project approval.

Once all utility diversions have been completed in September 2022 this reduction in funding ask could reduce by a further £420,300 equating to a total reduction of circa £900K to Transport North East.

Once the FBC is approved and Grant Funding Award signed by the Section 151 Officer. North Tyneside Council will enter into an NEC Option B contract. Option B contract is a priced contract with a bill of quantities that provides project specific measured quantities of the items of work identified by the drawings and specifications in the tender documentation.

A separate risk pot will be held and administered by North Tyneside Council through its Major Schemes Strategic Board governance arrangements

VALUE FOR MONEY

The proposed scheme provides Low value for money with significant economic benefits combined with positive environmental and social benefits calculated from the Marginal External Cost approach. The scheme will support increases in sustainable travel and health benefits to areas of high deprivation through a switch to public transport, walking and cycling modes, whilst supporting connectivity to surrounding leisure and retail areas.

As outlined in guidance, the BCR will then partially inform the 'Value for Money (VfM)' case for the scheme, with consideration given to other impacts and elements of the scheme or scheme package. As a guideline, VfM categorisation generally follows as defined below, however forthcoming changes to the Green Book appraisal methodology may change this:

- poor VfM if the BCR is less than 1.0;
- low VfM if the BCR is between 1.0 and 1.5;
- medium VfM if the BCR is between 1.5 and 2.0;
- high VfM if the BCR is between 2.0 and 4.0; or
- very high VfM if the BCR is greater than 4.0.

The output from the economic appraisal Core Growth estimate is summarised in **Table 4** and below:

Table 4: Economic Appraisal Summary Table: Core scenario

Present Value of Benefit (£000s)	£5,499
Present Value of Cost (£000s)	£3,237
Benefit Cost Ratio	1.70
Value For Money Categorisation	Medium

KEY RISKS, SENSITIVITIES AND UNCERTAINTIES

The risks, sensitivities and uncertainties are summarised below:

- Travel behaviours may have changed as a result of the Covid-19 pandemic. With home-working still a process being used by business there may be a drop in demand for commuting trips on public transport, however this should be captured within the Low Growth scenario using DfT current projections of future growth values;
- Lack of political support leads to delays and potential cancellation;
- Additional utilities discovered requiring additional diversion design;
- Third party land ownership issues discovered on the cycle schemes; however care has been taken to ensure these lie within the current highway boundaries.

Acquisition of the bus interchange site has already been undertaken therefore presents no scheme risk;

- Cost estimates increase between design and contractor detailed estimates;
- Topographical and PU surveys are inaccurate resulting in redesign work;
- Environmental surveys indicate unforeseen design constraints;
- Objections from statutory consultees cause delays and cost increases;
- Coordination with other scheme leads to delays/increased costs;
- Health and safety incidents lead to claims; and
- Ground conditions not fully investigated resulting in construction cost increases.