



# Ravenscraig masterplan STAG Part 1 Initial Appraisal

Ravenscraig Ltd

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## Contents

<b>1.</b>	<b>Introduction</b> .....	<b>1</b>
1.1	Overview.....	1
1.2	STAG Part I Appraisal.....	1
1.3	This Report.....	1
<b>2.</b>	<b>Background Information</b> .....	<b>3</b>
2.1	Pre-Appraisal.....	3
2.1.1	Background.....	3
2.1.2	Geographic Context.....	3
2.1.3	Socio-Economic Context.....	4
2.1.4	Transport Context.....	5
2.1.5	Consultation.....	5
2.1.6	Problems, Issues, Constraints and Opportunities.....	7
2.1.7	Transport Planning Objectives (TPOs).....	9
2.1.8	Option Generation.....	10
2.1.9	Option Sifting.....	12
2.1.10	Options for Part I Initial Appraisal.....	12
<b>3.</b>	<b>Status Update</b> .....	<b>13</b>
3.1	Revised Masterplan.....	13
3.2	Bus Operator Engagement.....	13
3.3	Rail Engagement.....	14
3.4	Pan-Lanarkshire Orbital Corridor.....	15
3.5	Further Development of Options for Part I Appraisal.....	16
<b>4.</b>	<b>Transport Planning Objectives</b> .....	<b>19</b>
4.1	Introduction.....	19
4.2	TPO1.....	19
4.3	TPO2.....	20
4.4	TPO3.....	21
4.5	TPO4.....	22
4.6	Summary.....	23
<b>5.</b>	<b>STAG Criteria</b> .....	<b>24</b>
5.1	Introduction.....	24
<b>6.</b>	<b>Environment</b> .....	<b>25</b>
6.1	Introduction.....	25
6.2	The Study Area.....	25
6.3	Noise and Vibration.....	25
6.4	Global Air Quality – carbon dioxide (CO <sub>2</sub> ).....	26
6.5	Local Air Quality – particulates (PM <sub>10</sub> ) and nitrogen dioxide (NO <sub>2</sub> ).....	26
6.6	Water quality, drainage and flood defence.....	26
6.7	Geology.....	27
6.8	Biodiversity and habitats.....	27

6.9	Landscape .....	28
6.10	Visual amenity.....	29
6.11	Agriculture and soils.....	29
6.12	Cultural heritage.....	29
6.13	Options Appraisal.....	30
<b>7.</b>	<b>Safety .....</b>	<b>31</b>
7.1	Introduction .....	31
7.2	Accidents.....	31
7.3	Security.....	32
7.4	Options Appraisal.....	32
<b>8.</b>	<b>Economy .....</b>	<b>34</b>
8.1	Introduction .....	34
8.2	Transport Economic Efficiency (TEE) .....	34
8.3	Wider Economic Benefits (WEBs) .....	40
8.4	Economic Activity and Location Impacts (EALIs) .....	40
8.5	Options Appraisal.....	41
<b>9.</b>	<b>Integration .....</b>	<b>42</b>
9.1	Introduction .....	42
9.2	Transport Integration.....	42
9.3	Transport and Land-Use Integration .....	42
9.4	Policy Integration .....	43
9.5	Options Appraisal.....	44
<b>10.</b>	<b>Accessibility and Social Inclusion .....</b>	<b>45</b>
10.1	Introduction .....	45
10.2	Community Accessibility.....	45
10.3	Comparative Accessibility.....	46
10.4	Options Appraisal.....	47
<b>11.</b>	<b>Established Policy Directives.....</b>	<b>48</b>
11.1	Introduction.....	48
11.2	North Lanarkshire LTS Objectives.....	48
<b>12.</b>	<b>Feasibility, Affordability and Public Acceptability.....</b>	<b>49</b>
12.1	Introduction.....	49
12.2	Feasibility.....	49
12.3	Affordability .....	51
12.4	Public Acceptability .....	53
12.5	Summary .....	54
<b>13.</b>	<b>Summary and Recommendations .....</b>	<b>55</b>
13.1	Overview.....	55
13.2	Option Sifting .....	56
13.3	Option Recommendations .....	57

**Appendix A. Appraisal Summary Tables**

**Appendix B. Public Transport Accessibility**

B.1 Introduction

B.1.1 TRACC

B.1.2 Modelled Runs

B.1.3 Accessibility Results

B.1.4 Summary

**Appendix C. Potential Demand**

C.1.1 Introduction

C.1.2 Demand Calculations

C.1.3 Summary

# 1. Introduction

## 1.1 Overview

Jacobs UK Ltd has been commissioned by Ravenscraig Ltd to undertake analysis and assessment of the transport network in support of the revised masterplan redevelopment of the site. The strategic nature of the site, and historical context of the previous masterplan, means that potential access to the rail network is a key issue to be resolved. We have therefore undertaken this appraisal using the Scottish Transport Appraisal Guidance (STAG) sequential process, and this report contains the Part 1 Initial Appraisal. For clarity, the STAG process focusses on the sustainable transport elements of the assessment, and feeds into a supports a wider Transport Assessment that considers the overall transport implications of the redevelopment proposals.

STAG is the Scottish Governments official transport appraisal guidance, setting out a methodology for developing a study to appraise transport options. A STAG study is required when Government funding, support or approval is sought for justifying proposals to change the transport system.

STAG involves the appraisal of generated options that have been developed to help address identified problems and realise potential opportunities within the study area against a set of criteria, including value for money.

## 1.2 STAG Part I Appraisal

The Part I Appraisal is an initial appraisal of the options generated during the Pre-Appraisal and involves a qualitative assessment of the likelihood of such options being able to meet the Transport Planning Objectives set within this.

In this respect, Part I Appraisal is intended to focus appropriate effort and resources towards options which merit detailed quantitative appraisal and eliminate options which are unlikely to meet the Transport Planning Objectives, alleviate problems or realise opportunities identified during Pre-Appraisal.

The Part I appraisal involves an initial appraisal of the options against the TPOs; an initial appraisal against the five Government criteria of Environment, Safety, Economy, Integration and Accessibility and Social Inclusion; an initial appraisal of the fit of the options against established policy directives; and an initial appraisal of the feasibility, affordability and likely public acceptability of the options.

## 1.3 This Report

This report sets out the STAG Part I Appraisal of the options generated during the pre-appraisal stage for sustainable transport options for the Ravenscraig Masterplan site. The appraisal of the options will be set against each of the five core sections of the STAG Part I appraisal as outlined above and will be completed using a seven-point scale considering the relative size and scale of impact of the options against these five core principles. The seven-point scale is as follows:

- **Major benefit** (represented by ÜÜÜ): these are benefits or positive impacts which, depending on the scale of cost or severity of impact, the practitioner should take into consideration when assessing an option's eligibility.
- **Moderate benefit** (represented by ÜÜ): the option is anticipated to have a moderate benefit or positive impact. Moderate benefits and impacts are those which taken in isolation may not determine an option's eligibility, but taken together do so.
- **Minor benefit** (represented by Ü): the option is anticipated to have only a small benefit or positive impact. Minor benefits or impacts are those which are worth noting, but the practitioner considers are not likely to contribute materially to determining whether an option is taken forward.
- **No benefit or impact** (represented by =): the option is anticipated to have no or negligible benefit or negative impact.

- **Minor cost or negative impact** (represented by  $\hat{U}$ ): the option is anticipated to have only a minor disbenefit or negative impact. Minor disbenefits or impacts are those which are worth noting, but the practitioner considers are not likely to contribute materially to determining whether an option is taken forward.
- **Moderate cost or negative impact** (represented by  $\hat{UU}$ ): the option is anticipated to have a moderate disbenefit or negative impact. Moderate disbenefits/negative impacts are those which taken in isolation may not determine an option's eligibility, but taken together could do so.
- **Major cost or negative impacts** (represented by  $\hat{UUU}$ ): these are disbenefits or negative impacts which, depending on the scale of cost or severity of impact, the practitioner should take into consideration when assessing an option's eligibility.

## 2. Background Information

### 2.1 Pre-Appraisal

#### 2.1.1 Background

A comprehensive STAG Pre-Appraisal was previously undertaken in September 2017, as part of the Ravenscraig Masterplan, comprising of a baselining exercise outlining the geographic, socio-economic and transport contexts, leading to the identification of the problems, issues, constraints and opportunities facing the Ravenscraig Masterplan area.

For more information, please refer to *Ravenscraig STAG Pre-Appraisal Working Paper, 4<sup>th</sup> September 2017*.

This chapter of the report provides a summary of the key findings of the pre-appraisal, including the setting of the Transport Planning Objectives and the options that emerged during the appraisal.

#### 2.1.2 Geographic Context

The former Ravenscraig Steelworks closed in 1992 and is now one of the largest brownfield redevelopment opportunities in Europe, measuring over 450 hectares. Development on the site began in 2006; however, there have been subsequent revisions to the Ravenscraig Masterplan following the original version. Certain aspects of the previous masterplan such as the level of residential and employment mix are now seen as undeliverable and instead the masterplan is now targeted at delivering realistic opportunities while implementing best practice in placemaking and sustainability.

The aim of the current masterplan is to focus on a greener and sustainable development, with particular attention on public transport and active travel modes. The STAG appraisal seeks to ensure that the further development of the site has an integrated package of sustainable transport measures, sitting alongside the Transport Assessment for the revised masterplan application.

Ravenscraig is considered a key development opportunity by the Scottish Government and is recognised in the National Planning Framework as having national development status. It is anticipated that the Ravenscraig Masterplan development, when finalised, will be an exemplar Sustainable Community.

The Ravenscraig Masterplan site itself is situated within the North Lanarkshire local authority boundary and is located between the towns of Motherwell and Wishaw. The total site area is 466.1 hectares and currently contains a mix of housing, the Sports City leisure complex and the largest of six campuses of the New College Lanarkshire.

The site is in close proximity to the M74, which is approximately 5km to the southwest, and the M8, which is approximately 5km to the north. The site is currently accessed from the north via a roundabout which connects New Craig Road to the A723, leading to the M8 in the north and Motherwell to the west, and the B7029, leading to Newhouse and Cleland.

From the south, the site is accessed via a roundabout connecting Robberhall Road with the A721, leading to Motherwell in the west and Wishaw in the east.

The site is also bounded by two rail lines, the West Coast Mainline to the south and west, and the Wishaw Deviation line to the east and south.

Over the past decade the Ravenscraig site has seen sporadic but significant development including:

- Ravenscraig Regional Sports Facility;
- New College Lanarkshire;



- Ravens Cliff Pub;
- Phoenix Park residential development (Barrett Homes/David Wilson Homes) c350 occupied homes;
- Raven's Cliff residential development phase 1 & 2 (Taylor Wimpey) c150 homes; and
- Under construction - a hotel and 250 homes.

The anticipated future development will, subject to planning permission, include a mix of land uses including residential, office, leisure, schools and industrial. It is expected that the overall development will be established over a multi-year period and will contain the following mix of development:

- Approximately 4,000 residential units with associated community facilities;
- 30.6k sqm Class 4 office space;
- 116k sqm Employment Based Development
- 6.25Ha Retail/industrial space; and
- 22.1Ha Retail/leisure space.

In addition to its geographic position between two key towns, Motherwell and Wishaw, the potential for the site to be fully developed and attract residents and visitors, it is essential that sustainable transport plays a key part of the masterplan development and the appropriate linkages are created to fully integrate the site into the current geographic context.

### 2.1.3 Socio-Economic Context

A baselining exercise considering key issues affecting the socio-economic profile of the Ravenscraig area was undertaken looking at indicators such as population growth, population age structure, deprivation, property prices and labour market statistics. Due to the site currently being underdeveloped, comparative analysis was undertaken using some of the local communities to help inform some of the statistics and to enable benchmarking to be undertaken. The analysis identified the following key points for the socio-economic context:

- The Ravenscraig site has witnessed a growth in population of **56%** from 2011 to 2015, far exceeding local, regional and national growth rates. This is directly linked to the increased development over this same time period.
- Ravenscraig has a relatively young age structure with **72%** of the population within the working age category. This demonstrates a strong trend in in-migration to the area and confidence behind the area as being a particularly attractive location in which to reside.
- The population of Ravenscraig has a higher academic attainment level than both the regional and national levels, with **85%** of the population having gained a level 1 qualification or above, compared to 67% for North Lanarkshire and 73% for Scotland.
- The fact that no parts of the Ravenscraig area are within the 20% most deprived in Scotland and the relatively high house prices, indicates strong economic health within the area. This is further evidenced by the high car availability levels, with over **30%** of households within the Ravenscraig Masterplan site having access to 3 or more cars, which is **7 times** the local, regional and national rates.
- Analysis of economic datasets identified that the majority of the Ravenscraig residents were young working professionals, with the economic activity rate (77.4%) almost **10%** higher than the regional and national levels.

- Ravenscraig has a higher proportion of people employed in higher skilled industries, which is reflected in the weekly household income data analysis with Ravenscraig residents earning **45%** more than the regional and **44%** more than the national rates.

#### 2.1.4 Transport Context

In addition to establishing the socio-economic context, a review of the current transport supply and demand on the network was undertaken to establish the transport context within which the masterplan site finds itself. The key points from the Transport Context are as follows:

- The majority of access roads to the site have witnessed an increase in traffic volumes, in particular there has been significant growth on the A723 to the north of the site and between Motherwell and the M74 to the west of the site.
- Ravenscraig residents travel significant distances for work, with 47% travelling beyond the national average distance of 12km and almost of a fifth of residents travelling further than 40km.
- 54% of residents work in North and South Lanarkshire, with a further 13% working in Glasgow and 17% working in Edinburgh and West Lothian.
- The Ravenscraig site is currently only served by two local bus services, which do so in the evenings, serving the sports centre.
- Currently no commercial bus services operate within the site.
- To the south of the site on the A721, there is a very competitive bus corridor with services linking Wishaw in the east with Glasgow in the west, in addition to local communities along the route.
- It also became apparent that there is a distinct lack of a north-south public transport connections within North Lanarkshire, linking the Ravenscraig and Motherwell areas with other large towns such as Coatbridge, Airdrie and Cumbernauld.
- Six rail stations are located within 5km of the Ravenscraig site; Motherwell, Wishaw, Carfin, Holytown, Shieldmuir and Airbles, providing links to both Glasgow and Edinburgh.
- Analysis of rail patronage data demonstrated that there has been a significant increase in rail users at five of the six stations, with the closest station Shieldmuir showing an **85%** increase in patronage since 2012. This increase is most likely to be a reflection on the improved timetables at Shieldmuir due to improvements and significant investment on the Lanark services.
- Accessibility analysis undertaken using TRACC software, highlighted long public transport journey times from the Ravenscraig Masterplan site to other locations in North Lanarkshire, in particular locations north of the M8 corridor, further highlighting the lack of a north-south connection.
- Journey time analysis also highlighted that public transport travel times from the Ravenscraig site to Glasgow and Edinburgh remain fairly constant throughout the day and evening, with time both to/from Glasgow taking 50-57 minutes and 78-96 minutes to/from Edinburgh.
- In terms of active travel infrastructure, the Ravenscraig site itself has very good provision with a dedicated cycle way along the full length of the spine road. Out with the site and linking to other amenities such as rail stations, there is a poor provision of infrastructure, involving with-traffic cycling.

#### 2.1.5 Consultation

A meeting was held on 11<sup>th</sup> January 2017 to discuss sustainable transportation issues related to the Ravenscraig Masterplan development with attendees including the project sponsor, North Lanarkshire Council, Transport Scotland, Network Rail, ScotRail and Strathclyde Partnership for Transport.

Although the meeting was essentially centred around the overall topic of public transport and active travel transport related issues with the site and potential opportunities, much of the discussion did focus on the topic of rail based transport and the issues relating to a potential station on the Wishaw Deviation Line which had been raised in the original masterplan. However, the wider context of the revised masterplan land use and transport strategy was emphasised; in particular, the need to establish the proposed land-use and the baseline travel scenario before any particular details could be agreed from a regulatory standpoint.

In relation to the provision of a rail service several key points were raised:

- Construction of a rail station on the site was considered potentially challenging;
- Recent improvements to the Lanark-Motherwell-Glasgow line has led to a successful increase in patronage and any service stopping at Ravenscraig would likely disturb this successful formula;
- There is limited space available at Glasgow Central Station and on the network as a whole to accommodate additional services;
- Motherwell station is planned to undergo a programme of improvements within the next year, with the planned improvement potentially augmenting the park and ride and other facilities which could make the station a more attractive proposition;
- The Shotts Line electrification in 2019 will bring journey time benefits to Holytown and Carfin stations;
- The general consensus was that it would be extremely difficult to deliver an attractive rail service to the Ravenscraig site and that a very strong narrative and rationale would be required to justify the case for a station.

Other potential options raised included the possibility of a bus-based park and ride site close to Ravenscraig, increased parking provision at Motherwell station, and that the masterplan should prioritise creating a balanced community, including jobs, education, housing and services.

Further stakeholder engagement was undertaken in January 2017 with members of the public. From the engagement process, the following feedback was received:

- Need for transparency around development delivery and timescale required;
- Community facilities, particularly the primary school, need to be delivered as early as possible;
- Desire to see local centres for convenience shopping within walking distances of housing;
- Most people are happy with a scaling back of the new town centre or no new town centre at all, returning focus to existing town centres;
- Support for improved public transport services and for infrastructure to enable travel choices.
- Provision of greenspace incorporating playparks and safe walking connections, including linkages to public transport for cycling;
- Vehicular speeds through the area, measures to calm traffic – particularly coming into the residential streets; and
- Clear support for the creation of local job opportunities, particularly in manufacturing, technology and educational sectors. Also, the need for improved digital infrastructure for homes and home-working.

### 2.1.6 Problems, Issues, Constraints and Opportunities

From the analysis of the data, the consultation with stakeholders and desk based research, problems, issues, opportunities and constraints were identified as set out below.

#### Problems

STAG guidance highlights the importance of recognising both actual and perceived problems and opportunities within the transport network. As such the following problems were identified:

- **Local Network Congestion** – Traffic flow analysis highlighted increased traffic flows in and around the area over recent years, which was further heightened during the construction period of the M8 upgrades and the improvements on the M74 and Raith Interchange. During this time, the spine road was identified as a popular “rat-run”, with traffic looking to avoid further congestion pinch points in Motherwell.
- **Strategic Public Transport Network** – Although there are six rail stations within 5km of the site, these currently sit out with the recognised walking distance of some parts of the development site. As such it is necessary to interchange between modes. Currently there are no opportunities to do this by bus as a service does not serve the site for most of the day and there are over capacity issues with car parking spaces at the rail stations. This is leading to an increase in car dependency to complete certain journeys.
- **North – South Connections** – There are a distinct lack of public transport options linking north/south movements within North Lanarkshire. Travel to work analysis highlighted that almost 40% of all trips from the Ravenscraig area and 61% of trips to the Ravenscraig area are made from within North Lanarkshire. The issue is further highlighted through accessibility analysis which demonstrates long public transport journey times from Ravenscraig to Coatbridge, Airdrie and Cumbernauld (ranging between 42 – 72 minutes).
- **Park and Ride** – There is a shortage of adequate park and ride provision in the area. There is no bus based park and ride sites in the area and the current parking provision at surrounding rail stations is inadequate with the car parks often over capacity. With the increase witnessed in rail patronage, this parking problem could potentially be exacerbated with further land development in the area.
- **Housing Mix** – The current housing mix is directed primarily at younger highly skilled professionals who are well paid and not likely to be the key target market of bus services. As such non-subsidised bus services may be unlikely to operate through the site until there is a wider mix of housing. In the meantime, there is still likely to be a high dependency on the car.
- **Walking and Cycling** – Out with the site, there is fairly poor provision of cycling infrastructure and as such on road cycling is required on the busy and often congested A721, A723 and B7029. Cycling in this environment is often unattractive to many, especially those lacking confidence in cycling in such conditions. Additionally, the cycling infrastructure provided at the surrounding rail stations is inadequate with many having spaces for only six bikes.
- **New College Parking** - Each day the college has around 5,500 students and 250 staff on campus and as such, parking is a major problem. The car park is often full by 9am and as a result, illegal and often dangerous parking occurs on the road leading to the college and around the local area. Due to a current lack of a bus service serving the spine road, car is often the first choice for many.

#### Issues

Issues as defined within STAG are uncertainties that the study may not be in a position to resolve but must work within the context of. The key identified issues within the pre-appraisal are as follows.

- **Pan-Lanarkshire Orbital Transport Corridor** – As part of the Glasgow City Deal, North Lanarkshire put forward the Pan-Lanarkshire Orbital Transport Corridor to help relieve the congestion issues and heavy traffic flows afflicting Airdrie and local communities along the northern sections of the A73. At present the scheme has been shortlisted for inclusion in the final decision stage.
- **Proposed Developments** – In March 2017 NLC completed a consultation period on several development opportunities in the local area surrounding the Ravenscraig site. With the identified sites under review there could potentially be further increases in development within close proximity to the Ravenscraig site adding further pressures to the local transport network.

## Opportunities

Opportunities as defined within STAG relate to the potential enhancements and improvements to the transport network and the way in which it is used. The following key opportunities are identified.

- **Shotts Line Electrification** – 75km of the Shotts line between Holytown and Mid Calder junction are due for electrification by March 2019. This project will bring significant economic, social and environmental benefits along the line and surrounding communities. Benefits include shorter journey times and providing greater mode choice opportunities.
- **Extension of the Whifflet Line** – There are current plans to extend the recent improvements to the Whifflet line to Shotts. This will open up further access to employment opportunities further afield and open up access to the desired north-south movement within North Lanarkshire.
- **ScotRail Franchise** – One of the key commitments of the Abellio franchise is to develop the UKs largest rail/cycle networks. This represents an important opportunity for the Ravenscraig site as further investment in cycling infrastructure between the site and the rail stations should open up the opportunity for greater mode choice and potentially increase the active travel mode share.
- **Glasgow City Deal** – North Lanarkshire Council is a partner in the £1.13 billion 'City Deal' for the Glasgow City Region. It is anticipated that the City Deal will act as a stimulus for significant levels of job creation, providing an important economic opportunity for all settlements within the City Region. Additionally, the Pan-Lanarkshire Orbital Corridor could also provide opportunities depending on its final guise and approval.
- **Recent Population Trends** – The significant increase in the working age population of the Ravenscraig site suggests that there is confidence in the Ravenscraig area as a place to live and invest. Improved transport provision could assist in capitalising on this opportunity by attracting further people to the area and thus investment.

## Constraints

Within STAG, constraints represent the physical, legal and institutional boundaries in which the study is being undertaken. The identified key constraints from the Ravenscraig Pre-Appraisal are as follows.

- **Bus Services** – The underlying structural constraint with bus services is that the bus market within Scotland is deregulated and as such makes it difficult for public bodies to control the characteristics of bus services without entering into formal partnership agreements.
- **Rail Station and Services** – There are several engineering challenges in building a station on the site, however, the underlying constraint would be service based. Timetable workability is a primary concern, especially with the enhancements and improvements to the rail network surrounding the site, such as the Shotts line electrification, and Lanark timetable changes which have proved popular. As such there would be real reluctance to sacrifice any of the current service provisions to service Ravenscraig.

- **Revenue and Capital Costs** – It is essential that any option identified through the STAG appraisal provides an appropriate balance between value for money and capital and revenue funding. Due to the current situation with the development site and the lack of a sufficient level of demand, short term funding options may be required until the market matures.

As such, any bus service related measures will most likely require either subsidies or kickstarter packages in the short term unless a current operator expresses an interest in diverting an existing route into the site. This package of subsidies or kickstarter funding would be necessary until the service becomes economically viable.

A new rail station would require a significant capital investment to build the station, platforms and other engineering works. Additionally, after the initial outlay there would be ongoing maintenance and operating costs associated with the rail station.

Active mode options, such as improving walking and cycling, would involve both capital – cycling infrastructure and revenue – marketing, funding and potentially maintenance. This investment is likely to be significantly lower than any major bus or rail orientated measures.

### 2.1.7 Transport Planning Objectives (TPOs)

A fundamental step in the STAG process is the setting of Transport Planning Objectives, through which the policy-maker should be seeking to achieve, through the appropriate transport intervention. The TPOs set within the pre-appraisal have been designed to address the problems, issues, opportunities and constraints established throughout the baselining of the geographic, socio-economic and transport context and wider stakeholder consultation. The TPOs have also been established while focusing on the delivery of the wider policy context of the Ravenscraig site in both the regional and national context and to assist in delivering against the Government's purpose. The TPOs established are:

- **TPO1** – Improve public transport connectivity between Ravenscraig and other areas within North Lanarkshire, in particular to improve north-south connectivity and reduce average journey times between these locations to 30 – 45 minutes.
- **TPO2** – To increase mode share of public transport for journeys to work and leisure activities over the masterplan build out period from 7% to 14% (based on minimum PT mode share from the comparator settlements).
- **TPO3** – To increase travel by active modes over the masterplan build out period, including walking and cycling from 2% to 7% (based on the North Lanarkshire average walking and cycling numbers).
- **TPO4** – To connect Ravenscraig with a reliable strategic public transport network to provide access to destinations of work and leisure including Glasgow and Edinburgh to help support current travel patterns and reduce overall commuting times.

The TPOs were then assessed against the objectives set out in the North Lanarkshire Council Local Transport Strategy to ensure they assist in the delivery of these objectives. The objectives of the NLC LTS were:

**Objective 1:** To stimulate business and the economy and develop North Lanarkshire as an attractive place to invest, work and do business.

- Reducing the impact of peak hour congestion on the road network and secure more reliable journey times by all modes.
- Instigate appropriate demand management measures.
- Improve access to key town centres, employment, education and destinations.
- Provide a high quality, well-maintained and integrated transport network.

**Objective 2:** To provide equal opportunities and enhance the choice, accessibility and availability of transport, particularly for those in deprived areas and those with limited access to the transport network.



- Improve connectivity within North Lanarkshire, particularly along north-south corridors and in rural areas by public transport, cycling and walking.
- Improve the accessibility of the transport network as a whole, particularly for those in areas of high unemployment and those with mobility difficulties.

**Objective 3:** To promote safety in the community and enhance actual and perceived safety when travelling on the transport network.

- Reduce the number and severity of road accidents.
- Reduce crime and fear of crime for all on the transport network.

**Objective 4:** To protect North Lanarkshire's natural and built environment and to improve the health of its population.

- Improve local air quality and reduce carbon emissions.
- Improve access to healthcare facilities
- Challenge existing travel behaviour habits and encourage more sustainable transport choices.
- Increase the proportion of active travel trips.
- Minimise the impact of the transport network on the natural and built environment

The table below establishes the fit between the Ravenscraig STAG TPOs and the NLC LTS objectives.

NLC Objectives	TPO1	TPO2	TPO3	TPO4
Objective 1	Ü	Ü	=	Ü
Objective 2	Ü	Ü	=	Ü
Objective 3	Ü	=	=	Ü
Objective 4	Ü	Ü	Ü	Ü

As can be viewed in the table there is a strong correlation between the designed TPOs and the NLC LTS objectives, in particular TPOs 1, 2 and 4.

### 2.1.8 Option Generation

Drawing on the problems and opportunities identified in the earlier stages of the pre-appraisal an initial long list of potential options was generated that could resolve or realise these problems and opportunities. In line with STAG guidance, the options were developed through the analysis and interpretation of the evidence and key trends from the baselining exercise, stakeholder consultation and through internal team discussions with key members of our team with expertise in public transport and active travel measures.

#### Initial Options Long List

**Option1: Integrated Bus Infrastructure in Masterplan** – This option would involve taking the opportunity to build a dedicated Bus Infrastructure within the development to allow fast and efficient transit of buses serving the residents of the development area and the surrounding public transport network. Integrating this option into the masterplan could help decrease the dependency on car based travel and work towards TPOs 1, 2 and 3 by improving public transport provision and accessibility.

**Option 2: Bus Corridor** - Option 2 would involve creating a bus corridor along the Ravenscraig spine road, onto the A721 and then through Motherwell and down onto the M74 to provide bus priority measures to increase public transport patronage and reduce congestion, especially during peak hours. Again this option could help deliver against TPO1, 2 and 3, by increasing public transport mode share and accessibility.

**Option 3: Circular Service (Rail-Bus)** - This option would involve creating a rail bus service linking key stations such as Shieldmuir, Motherwell, and Carfin, in effect acting as a circular bus service. This option would

provide residents with a reliable service linking into rail services, thus reducing car dependency and pressures on the park and ride sites at the stations. This option could help work towards achieving TPOs1, 2 and 3.

**Option 4: New Local North-South Service** - Option 4 would involve introducing a new local north-south service, which follows a north-south axis from Eurocentral business park to the north, south along the A723, through the Ravenscraig Masterplan site, Shieldmuir Rail station and finally stopping at Wishaw hospital. Option 4 would help deliver against TPO 1 and 2.

**Option 5: Direct bus to Glasgow / Enhanced Bus / Rail Integration** - Option 5 would involve creating a direct bus service from the Ravenscraig development site to Glasgow, stopping only at Motherwell Rail Station to enable interchange to access rail services to Edinburgh and cross border. Option 5 could help deliver TPO2 and 4.

**Option 6: Direct bus to Edinburgh / Enhanced bus / Rail Integration** - This option would be similar to option 5 and would involve creating a direct bus service from the Ravenscraig development site to Edinburgh, stopping only at Motherwell Rail Station to enable interchange to access rail services to Glasgow and cross border. Similar to option 5 above, this option could help achieve TPO2 and 4.

**Option 7: Ravenscraig Rail Station** - Option 7 would involve building a rail station on the Wishaw Line within the Ravenscraig development site, providing direct access to both Glasgow and Edinburgh. The station would include secure cycle storage to encourage active mode travel. A rail station option could help work towards TPO1, 2 and 4.

**Option 8: Bus Park and Ride** - This option would involve creating a bus based park and ride site in or within close proximity to the site, with services linking directly to Glasgow. This option could help decrease the number of cars on the local and strategic network. This option could help deliver TPO2 and 4.

**Option 9: Enhancement of Active Travel** - Option 9 would focus on capital improvements to the active travel infrastructure linking the Ravenscraig development area to the local areas and specifically to Shieldmuir, Carfin and Motherwell rail stations. This would include increasing the number of secure cycle storage at these stations, cycle hire, building dedicated cycle facilities separated from motor vehicle traffic where practicable, and providing cycle lanes along some access corridors. With the Ravenscraig development site already having good quality cycling infrastructure this option could build upon the good work already undertaken and encourage growth in this mode of transport. Option 9 could help deliver TPO2 and 3.

**Option 10: Marketing of Active Travel and PTP** - This option would be focused on the promotion and marketing of active travel through the introduction of Personalised Travel Planning (PTP project for Ravenscraig). Finally, option 10 could help work towards TPO 2 and 3, similar to option 9.

The table below indicates the potential of each option to assist in delivering against each of the identified TPOs.

Option	TPO1	TPO2	TPO3	TPO4
<b>Option1: Integrated Bus Infrastructure in Masterplan</b>	ü	ü	ü	=
<b>Option 2: Bus Corridor</b>	ü	ü	ü	=
<b>Option 3: Circular Service (Rail-Bus)</b>	ü	ü	ü	ü
<b>Option 4: New Local North-South Service</b>	ü	ü	ü	=
<b>Option 5: Direct bus to Glasgow / Enhanced Bus / Rail Integration</b>	=	ü	=	ü



<b>Option 6: Direct bus to Edinburgh / Enhanced bus / Rail Integration</b>	=	ü	=	ü
<b>Option 7: Ravenscraig Rail Station</b>	ü	ü	=	ü
<b>Option 8: Bus Park and Ride</b>	=	ü	=	ü
<b>Option 9: Enhancement of Active Travel</b>	=	ü	ü	=
<b>Option 10: Marketing of Active Travel and PTP</b>	=	ü	ü	=

**2.1.9 Option Sifting**

Within STAG the rule is to retain all options until there is unequivocal evidence that an option will not deliver against the TPOs and STAG criteria. At this STAG pre-appraisal stage any option that will clearly not deliver the intended outcomes and address the problems identified should be eliminated from further consideration.

The options developed overleaf have the potential to address the problems identified, realising opportunities and delivering against at least one of the TPOs and thus should be considered further and in more detail at STAG 1 appraisal.

**2.1.10 Options for Part I Initial Appraisal**

From the high-level review of the options against the TPOs all options will be taken forward for further appraisal against the five STAG criteria.

### **3. Status Update**

#### **3.1 Revised Masterplan**

The STAG Pre-Appraisal for the Ravenscraig masterplan was completed in early September 2017. In November 2017, a revised draft masterplan was released by the developer which contained comprehensive detail on the likely phasing of further development on the site and indicative milestones whereby new infrastructure was likely to be on the ground. Overall there were no significant additions or other changes in the revised masterplan that would impact upon the previously submitted pre-appraisal working paper.

Included within the revised masterplan are two key new links connecting Ravenscraig to the local road network. One is a new link road to the south west over the West Coast Mainline which was part of the original masterplan and the other one to the north west connecting onto Merry Street, which is proposed as a bus and active travel only link.

The masterplan indicated a build out of an approximate 1,000 houses over the next five years including the construction of a primary school, before further incremental growth over five year periods up-until full build out by 2045. Initial retail and employment elements are estimated to be constructed around 2023. As such the masterplan area is most likely to be commuter driven for the next five to seven years, with most trips visiting the site still heavily focussed around the college and sports centre.

#### **3.2 Bus Operator Engagement**

Further engagement was undertaken with SPT to inform them of the information contained in the revised draft masterplan. The outcome of these discussions was to hold bus operator workshops to relay the information to the local bus operators and raise interest in providing services into the masterplan site which is currently unserved.

SPT facilitated the workshops and Jacobs presented the information to five of the main bus operators in the local area, including First, McGills, Whitelaws, CityLink and JMB travel. The workshops were well received with the key message focussing on ensuring the further development of the site included planning for bus provision and manoeuvrability. A couple of the operators were keen on further supporting information, to enable them to plan either running a new service through the masterplan site or else extending a current service.

Sustainability also played a key role in the discussions, with desires to ensure that any potential bus fleet operating within the site is of high quality and aligns with key environmental policies to ensure the success of the development as a sustainable community. A point that arose from this discussion was to include an agreement that a certain standard of bus would be required for a service to operate in the Ravenscraig masterplan area, therefore, reducing the opportunities for substandard operations entering the market and potentially having a detrimental effect on the attractiveness of bus travel.

The issue of subsidies was also discussed. In the short term, it is felt that a kick-starter fund would be necessary to support any bus service until further development introduced potential new customers. It was mentioned that such subsidies would be necessary for a short period of time, approximately two to three years until there was enough demand to make any service economically viable. These subsidies, however, would only be required if no current operator was able to alter or extend a current service into the site on a commercial basis. A further point that was raised on the impact of subsidies is the likely conflicts between services in such a competitive bus corridor. SPT were keen to highlight that services introduced with subsidies that undertake a similar route as an existing service would be in direct conflict with competition laws. Additionally, it could influence service abstraction, whereby passengers shift from a current service to the new service impacting on farebox revenue on existing services.

Further work on bus service options and potential bus subsidies are currently ongoing, with SPT providing assistance and advice on developing potential options and likely required funding to provide the residents of Ravenscraig with access to a reliable bus service.

### 3.3 Rail Engagement

Further engagement was also undertaken with SPT, ScotRail and Network Rail as a result of the revised draft masterplan. The engagement had two focus streams, one on the existing rail network and planned improvements and the second on a potential new Ravenscraig rail station.

Both ScotRail and Network Rail have invested significantly in the local rail network around the Ravenscraig masterplan area, which has led to significant rail passenger growth on the Lanark service to Glasgow. Each of the three closest stations to Ravenscraig have witnessed significant growth and this growth is something that ScotRail would like to protect and further build upon. As of 2018, peak period services on the Lanark route will see further capacity with six car sets operating. This will again improve the quality of service on the route.

In addition to investing heavily on the service provision, facilities at surrounding stations have also been enhanced with new shelters and station upgrades already in place or due in the near future. This investment in the area has seen a particular strong performance on the local rail network. In particular Motherwell rail station will be undergoing an upgrade to improve the quality of service to all customers and to act as a key public transport interchange between bus and rail. Car parks are also set for capacity increases at Shieldmuir and Motherwell to provide increased park and ride provision to help build upon the significant growth on this route.

Focus then turned to the potential for a rail station situated within the Ravenscraig masterplan area. Three main problem themes arose from these discussions:

#### Current Capacity

A station for Ravenscraig would likely be situated on the Wishaw Deviation Line. Currently no timetabled services operate on this line. Discussion highlighted that if a new service was to be introduced to serve the Ravenscraig station, it would use a line which downstream has significant over-capacity issues on the approaches to and within Glasgow Central Station and the lack of available timeslots for new services. This endeavour would require a whole timetable review of the network, which would be likely to result in rerouting of the Lanark service instead of introducing a new service. Additionally, a new service would require a significant investment, including new rolling stock, additional train crew and likely subsidies as the service would be likely to operate on a revenue deficit.

#### Lanark Service

The Lanark service has witnessed strong year on year patronage growth since the introduction of the new timetable. This has seen patronage at Shieldmuir alone increase by 85%, with approximately 480 people using the station on a daily basis. In 2005 only 5 or 6 people a day used the station, which demonstrates the success of the investment in the rail service in this area. Due to the capacity constraints mentioned above, the Lanark service would be required to reroute to serve Ravenscraig after Wishaw. This would mean both Shieldmuir and Motherwell would be dropped from this route. This would leave both stations underserved and have a detrimental impact on the passenger growth experienced over recent years and the journey time savings that current passengers have experienced since the improved timetabling of the service. Additionally, this rerouting of the service would lead to the loss of direct connections with Lanark, Wishaw and Carluke for residents of Shieldmuir and Motherwell and vice versa, which could impact upon the ability to interchange.

#### Capital and Revenue Investment

Construction of a new station at Ravenscraig would involve significant capital and revenue investment. Robroyston, a proposed new station on the Glasgow to Cumbernauld line, was used as a proxy to determine the likely costs of a new station at Ravenscraig. A station would cost approximately £11.5 million without parking facilities and £13.5-14 million with parking. Due to the location of the site of a potential station, it would be likely that a car park would be required. This is a significant capital investment for the site. Revenue investment would also be necessary as new rolling stock, additional train crew, maintenance cost of the station and train calling costs are all likely to outweigh the potential revenue from patronage, therefore, the services would need to be subsidised. Maximum patronage levels are not likely to be met until 2045 and thus in the short term, it is highly unlikely that the service would be economically viable.

A point was raised during the public consultation process suggesting a potential new station being located at Flemington instead of on the Wishaw Deviation Line. Both ScotRail and Network Rail were in agreement that this option is highly unlikely to be deliverable for several reasons including:

- The proximity to Shieldmuir. Shieldmuir station is located only 950 metres to the south east of the Flemington site. This close proximity would mean the train speed would be reduced significantly between stations, adding time penalties to the rest of the line. This is particularly key on the WCML.
- Shieldmuir has seen great success over the past few years with patronage levels increasing by 85% as highlighted above. This is mainly due to the improved timetable of the Lanark service. Any additional station in close proximity could have dis-benefits to many existing users on these services that could impact on this growth moving forward due to the additional time penalties associated with an additional stop.
- An additional stop on the WCML is likely to have significant journey time implications on the rest of the line and would actually go against national policy which aims to improve journey times on the WCML.
- A station at Flemington, whilst potentially attractive to some people working or studying at Ravenscraig, would also be located further away from many of the main housing locations within the Ravenscraig site. This would limit the benefit to future residents of Ravenscraig over using Shieldmuir or Motherwell.
- Due to the time constraints on the line and entry into and out of Glasgow Central, turnaround time is of paramount importance. An additional stop will impact upon the turnaround time and could have significant performance impacts on the service provision. An additional stop would significantly impact upon this and ScotRail could face the need to get both more trains and drivers at a significant cost.
- These operational issues and potentially increased revenue costs in addition to the construction cost of a station on the WCML means that such a scheme would be very unlikely to deliver a positive benefit cost ratio (BCR) to be taken forward.

For these reasons both organisations feel there would be no merit in undertaking any appraisal work of this location, and thus this option has not been considered in this appraisal.

In conclusion, both ScotRail and Network Rail felt that for the foreseeable future, focus should be applied on making better use of the existing rail provision and in particular on improving links between the Ravenscraig masterplan site and Shieldmuir and Motherwell stations. By improving these links, residents and visitors to the Ravenscraig site can still experience a high-quality service and take advantage of the new improved timetables at these locations and improved trains that will start operating on the line in 2018. Furthermore, this will ensure existing passengers still have access to a high-quality service providing direct connections to key destinations along the line including interchange opportunities at Motherwell station to head towards Edinburgh or cross border. For work undertaken during this STAG Part I appraisal it is of the understanding that as a new service is unlikely to be deliverable, a rerouting of the Lanark-Glasgow service is the option to measure against the STAG criteria.

### **3.4 Pan-Lanarkshire Orbital Corridor**

In late December 2017, the Pan-Lanarkshire Orbital Corridor was approved by the Glasgow City Region Deal cabinet. The road will effectively link the M80 in the north with the M74 in south, bypassing Airdrie to the east, transecting the Ravenscraig masterplan site and linking into the M74. The project also involves an improved public transport hub at Motherwell train station incorporating access improvements, park and ride expansion, active travel links and new public realm works.

The project is expected to unlock key land development sites and help stimulate economic growth along its length and in particular help realise the potential of the Ravenscraig masterplan site creating up to 6,700 jobs and boosting the economy by £360 million.

### 3.5 Initial Sifting and Further Development of Options for Part I Appraisal

#### Initial Sifting

As an outcome from the revised masterplan and the engagement with both bus and rail operators, the options identified to be taken forward from the Ravenscraig Pre-Appraisal have been further developed to take cognisance of both elements. Subsequently, three options were identified to be sifted out at this stage:

Sifted Option	Rationale
<p><b>Option 5</b> – Direct bus to Glasgow /Enhanced Bus / Rail Integration</p>	<ul style="list-style-type: none"> <li>• Direct bus services to Glasgow would offer no obvious journey time advantage over current bus services from the south of the site once the diversion time through the site is taken into consideration. Furthermore, the bus journey time from the site to Edinburgh would be slower than rail services from Motherwell Rail station;</li> <li>• There would be issues introducing a bus service to Glasgow from the site due to the competitiveness of the bus market in the local area. These services would operate along the same route as current direct bus services to Glasgow, which introduce difficulties with competition law and the potential for unfair advantage of subsidising one service over another;</li> <li>• Direct buses with potential rail integration at Motherwell could potentially result in an increase in passengers switching to rail to continue on to Glasgow or Edinburgh as opposed to staying on the current bus due to differences in journey times;</li> <li>• STAG cannot dictate any changes to existing bus-based services such as rerouting services as these are at the operator's discretion, as such most bus-based options would require new services and related subsidies which again based on the current competitive nature of the bus corridors within the area, could potentially give rise to objections based on competition laws;</li> <li>• Both options 3 &amp; 4 provide opportunities to facilitate the desire to undertake this journey by providing interchange opportunities at rail stations or through connectivity to current express bus services on the M8 at Eurocentral.</li> </ul>
<p><b>Option 6</b> - Direct bus to Edinburgh / Enhanced Bus / Rail Integration</p>	<ul style="list-style-type: none"> <li>• Although current demand to travel to Edinburgh is low and may increase due to direct services it is unlikely that this demand would reach the level necessary to make a direct service economically viable;</li> <li>• Bus operators are unlikely to run a service which is unviable across the whole of the day, as is apparent currently with no existing bus service provided, even though the census data highlights people undertaking this movement;</li> <li>• Direct buses with potential rail integration at Motherwell could potentially result in an increase in passengers switching to rail to continue on to Glasgow or Edinburgh as opposed to staying on the current bus due to differences in journey times;</li> <li>• Both options 3 &amp; 4 provide opportunities to facilitate the desire to undertake this journey by providing interchange opportunities at rail stations or through connectivity to current express bus services on</li> </ul>

	the M8 at Eurocentral
<b>Option 8 – Bus Park and Ride</b>	<ul style="list-style-type: none"> <li>· There is currently no land provision for a bus based park and ride site within the Ravenscraig Masterplan and it is uncertain whether land would be released for this purpose;</li> <li>· Additionally, similar to reasons outlined above, bus based journey times are unlikely to provide any benefit over current rail based journey times;</li> <li>· Ravenscraig is being developed as a sustainable, greener community with an aim of reducing travel by car, as such having a park and ride site within the masterplan would go against this aim as it would increase the number of car movements within the site;</li> <li>· Direct buses with potential rail integration at Motherwell could potentially result in an increase in passengers switching to rail to continue on to Glasgow or Edinburgh as opposed to staying on the current bus due to differences in journey times;</li> <li>· Both options 3 &amp; 4 provide opportunities to facilitate the desire to undertake this journey by providing interchange opportunities at rail stations or through connectivity to current express bus services on the M8 at Eurocentral</li> </ul>

The remaining options which will be the focus of this initial appraisal are set out below. However, as both options 9 and 10 are unlikely to deliver the required level of impact against the TPOs alone, they have been incorporated into the other five options to complement the core option. These remaining options are not mutually exclusive and could potentially be grouped together, for instance Option 2 and Option 3.

**Option 1 – Integrated Bus Infrastructure in the Masterplan and enhancement of Active Travel and marketing of Active Travel (PTP).** This option would involve incorporating bus priority measures within the internal Ravenscraig masterplan site, including enhancement of bus infrastructure. Bus priority measures would include bus only turns, and a new bus and active travel link to Merry Street in the future. As STAG cannot influence the operations of current services, this option has been designed to incorporate infrastructure to encourage existing services into the site. Active travel enhancement would include building on the existing cycling infrastructure within the masterplan area, such as additional cycle routes, direct linkages into the main areas and surrounding towns and cycle storage.

**Option 2 – Bus Corridor and enhancement of Active Travel and marketing of Active Travel (PTP).** Option 2 would build on option 1 above and include defining a bus priority measures corridor along the spine road within the Ravenscraig site, along the A721 into Motherwell and then towards the M74. Effectively, this option would provide the necessary infrastructure along the southern section of the Pan-Lanarkshire Orbital Corridor if it were to go ahead. This option would include enhancing the bus infrastructure along the corridor including shelters and signage and to provide bus priority measures to increase public transport patronage and reduce congestion, especially during peak hours. As with option 1, this option has been designed to encourage existing service operators into the masterplan site. Active travel enhancement would include building on the existing cycling infrastructure within the masterplan area, such as additional cycle routes, direct linkages into the main areas and surrounding towns and cycle storage.

**Option 3 – Circular Service (Rail Bus) and enhancement of Active Travel and marketing of Active Travel (PTP).** This option would require the introduction of either a new bus service completing a circular route linking the Ravenscraig Masterplan area with the local rail stations of Carfin, Shieldmuir and Motherwell or extending current local services into the Ravenscraig masterplan area. The service would operate a strict pick-up / drop-off policy to ensure the service does not compete with any other existing service along certain stretches of the corridor. Active travel enhancement would include building on the existing cycling infrastructure within the masterplan area, such as additional cycle routes, direct linkages into the main areas and surrounding towns and cycle storage.



**Option 4 – New Local North-South Bus Service and enhancement of Active Travel and marketing of Active Travel (PTP).** Option 4 would involve introducing a new local north-south bus service operating along the A723 and through the site linking Eurocentral in the north to Wishaw hospital to the south of the site. This option would provide connectivity for residents to access key employment areas such as Eurocentral and health services at Wishaw hospital. Onward rail connectivity is also provided for with the service stopping at Shieldmuir rail station. The service would operate a strict pick-up / drop-off policy to ensure the service does not compete with any other existing service along certain stretches of the corridor. Active travel enhancement would include building on the existing cycling infrastructure within the masterplan area, such as additional cycle routes, direct linkages into the main areas and surrounding towns and cycle storage.

**Option 7 – Ravenscraig Rail Station and enhancement of Active Travel and marketing of Active Travel (PTP).** Option 7 would involve building a rail station on the Wishaw Deviation Line within the Ravenscraig masterplan site, providing access to both Glasgow and Edinburgh and the re-timetabling and rerouting of the Lanark-Glasgow existing service only. This would be the only rail option available for consideration due to the concerns raised through engagement with both Abellio ScotRail and Network Rail. The station would include secure cycle storage to encourage active mode travel. Active travel enhancement would include building on the existing cycling infrastructure within the masterplan area, such as additional cycle routes, direct linkages into the main areas and surrounding towns and cycle storage.

## 4. Transport Planning Objectives

### 4.1 Introduction

Performance of the options against the TPOs is a crucial part of determining the preferred option(s) and the rationale for that choice. It is essential that the option(s) have a positive contribution towards delivering the TPOs. As such this section sets out a summary of the performance of each option against each TPO at a qualitative level based on the likely impacts of the option against each TPO. The seven-point scale is used to determine the relative size and scale of these impacts.

The seven-point scale is as follows:

- **Major benefit** (represented by ÜÜÜ): these are benefits or positive impacts which, depending on the scale of cost or severity of impact, the practitioner should take into consideration when assessing an option's eligibility.
- **Moderate benefit** (represented by ÜÜ): the option is anticipated to have a moderate benefit or positive impact. Moderate benefits and impacts are those which taken in isolation may not determine an option's eligibility, but taken together do so.
- **Minor benefit** (represented by Ü): the option is anticipated to have only a small benefit or positive impact. Minor benefits or impacts are those which are worth noting, but the practitioner considers are not likely to contribute materially to determining whether an option is taken forward.
- **No benefit or impact** (represented by =): the option is anticipated to have no or negligible benefit or negative impact.
- **Minor cost or negative impact** (represented by û): the option is anticipated to have only a minor disbenefit or negative impact. Minor disbenefits or impacts are those which are worth noting, but the practitioner considers are not likely to contribute materially to determining whether an option is taken forward.
- **Moderate cost or negative impact** (represented by ûû): the option is anticipated to have a moderate disbenefit or negative impact. Moderate disbenefits/negative impacts are those which taken in isolation may not determine an option's eligibility, but taken together could do so.
- **Major cost or negative impacts** (represented by ûûû): these are disbenefits or negative impacts which, depending on the scale of cost or severity of impact, the practitioner should take into consideration when assessing an option's eligibility.

### 4.2 TPO1

**Improve public transport connectivity between Ravenscraig and other areas within North Lanarkshire, in particular to improve north-south connectivity and reduce average journey times between these locations to 30 – 45 minutes.**

Option	Appraisal Rationale	Likely Impact
<b>Option 1</b> – Integrated Bus Infrastructure in Masterplan, enhancement of Active Travel and marketing of Active Travel (PTP)	This option would assist in providing reliable journey times to public transport users and in particular encourage bus services to operate within the Ravenscraig site, enabling connectivity between the site and other locations in the local area. This option would also facilitate the opportunity to interchange to other services providing north-south access.	Ü



<b>Option 2</b> - Bus Corridor, enhancement of Active Travel and marketing of Active Travel (PTP)	This option would assist in providing reliable journey times to public transport users and in particular encourage bus services to operate within the Ravenscraig site, enabling connectivity between the site and other locations in the local area. This option would also facilitate the opportunity to interchange to other services providing north-south access.	ü
<b>Option 3</b> – Circular Service (Rail-Bus), enhancement of Active Travel and marketing of Active Travel (PTP)	This option would enable residents to interchange from bus to rail at Motherwell rail station and access services north to Whifflet and Cumbernauld.	ü
<b>Option 4</b> – New Local North-South Bus Service, enhancement of Active Travel and marketing of Active Travel (PTP)	A new local bus operating along a north-south axis from Eurocentral to Wishaw would provide the opportunity for residents to undertake this movement, although it is acknowledged this is restricted to south of the M8 corridor. Interchange opportunities to continue further north are, however, provided at Eurocentral by other bus services.	ü
<b>Option 7</b> – Ravenscraig Rail Station, enhancement of Active Travel and marketing of Active Travel (PTP)	This option would have a negative impact on this TPO as it would result in the current Lanark service being rerouted dropping a call at Motherwell station, which provides interchange opportunities to the north-south service to Whifflet and Cumbernauld.	û

### 4.3 TPO2

**To increase mode share of public transport for journeys to work and leisure activities over the masterplan build out period from 7% to 14% (based on minimum PT mode share from the comparator settlements).**

Option	Appraisal Rationale	Likely Impact
<b>Option 1</b> – Integrated Bus Infrastructure in Masterplan, enhancement of Active Travel and marketing of Active Travel (PTP)	This option would assist in providing reliable journey times to public transport users and in particular encourage bus services to operate within the Ravenscraig site, enabling connectivity between the site and other locations in the local area. This option would also facilitate the opportunity to interchange to other services.	ü
<b>Option 2</b> - Bus Corridor, enhancement of Active Travel and marketing of Active Travel (PTP)	This option would assist in providing reliable journey times to public transport users and in particular encourage bus services to operate within the Ravenscraig site, enabling connectivity between the site and other locations in the local area. This option would also facilitate the opportunity to interchange to other services.	ü
<b>Option 3</b> – Circular Service (Rail-	This option would enable Ravenscraig residents to access	üü

Bus), enhancement of Active Travel and marketing of Active Travel (PTP)	key local rail stations for onward travel throughout the local area and further afield.	
<b>Option 4</b> – New Local North-South Bus Service, enhancement of Active Travel and marketing of Active Travel (PTP)	This option would provide residents of the site the opportunity to travel to employment locations along the route including interchange opportunities at Shieldmuir Rail Station and connections to other bus services at both Eurocentral and Wishaw hospital.	üü
<b>Option 7</b> – Ravenscraig Rail Station, enhancement of Active Travel and marketing of Active Travel (PTP)	This option would provide Ravenscraig residents with a rail station to enable access towards Glasgow and towards Lanark. It would, however, eliminate interchange opportunities at Motherwell, for north-south travel.	üü

#### 4.4 TPO3

To increase travel by active modes over the masterplan build out period, including walking and cycling from 2% to 7% (based on the North Lanarkshire average walking and cycling numbers).

Option	Appraisal Rationale	Likely Impact
<b>Option 1</b> – Integrated Bus Infrastructure in Masterplan, enhancement of Active Travel and marketing of Active Travel (PTP)	The active travel measure to support the core option would improve cycling and walking infrastructure in the local area, in addition to increasing cycle storage at rail and bus interchanges. Providing direct linkages would encourage increased use of these facilities.	ü
<b>Option 2</b> - Bus Corridor, enhancement of Active Travel and marketing of Active Travel (PTP)	The active travel measure to support the core option would improve cycling and walking infrastructure in the local area, in addition to increasing cycle storage at rail and bus interchanges. Providing direct linkages would encourage increased use of these facilities.	ü
<b>Option 3</b> – Circular Service (Rail-Bus), enhancement of Active Travel and marketing of Active Travel (PTP)	The active travel measure to support the core option would improve cycling and walking infrastructure in the local area, in addition to increasing cycle storage at rail and bus interchanges. Providing direct linkages would encourage increased use of these facilities.	ü
<b>Option 4</b> – New Local North-South Bus Service, enhancement of Active Travel and marketing of Active Travel (PTP)	The active travel measure to support the core option would improve cycling and walking infrastructure in the local area, in addition to increasing cycle storage at rail and bus interchanges. Providing direct linkages would encourage increased use of these facilities.	ü
<b>Option 7</b> – Ravenscraig Rail Station, enhancement of Active Travel and marketing of Active Travel (PTP)	The active travel measure to support the core option would improve cycling and walking infrastructure in the local area, in addition to increasing cycle storage at rail and bus interchanges. Providing direct linkages would encourage	ü

increased use of these facilities.

## 4.5 TPO4

**To connect Ravenscraig with a reliable strategic public transport network to provide access to destinations of work and leisure including Glasgow and Edinburgh to help support current travel patterns and reduce overall commuting times.**

Option	Appraisal Rationale	Likely Impact
<b>Option 1</b> – Integrated Bus Infrastructure in Masterplan, enhancement of Active Travel and marketing of Active Travel (PTP)	This option would assist in providing reliable journey times to public transport users and in particular encourage bus services to operate within the Ravenscraig site, enabling connectivity between the site and other locations in the local area. This option would also facilitate the opportunity to interchange to other services.	Ü
<b>Option 2</b> - Bus Corridor, enhancement of Active Travel and marketing of Active Travel (PTP)	This option would assist in providing reliable journey times to public transport users and in particular encourage bus services to operate within the Ravenscraig site as part of the wider bus network provision, enabling connectivity between the site and other locations in the local area. This option would also facilitate the opportunity to interchange to other services.	Ü
<b>Option 3</b> – Circular Service (Rail-Bus), enhancement of Active Travel and marketing of Active Travel (PTP)	This option would enable Ravenscraig residents to access key local rail stations for onward travel throughout the local area and further afield. Improved connections to Motherwell station would allow residents to interchange onto services towards Edinburgh and south across border in addition to Glasgow.	ÜÜ
<b>Option 4</b> – New Local North-South Bus Service, enhancement of Active Travel and marketing of Active Travel (PTP)	This option would allow Ravenscraig residents the opportunity to interchange to rail at Shieldmuir rail station for onward travel to both Glasgow and Edinburgh. Additionally, it would provide an opportunity to interchange to the direct bus services at Eurocentral to both Glasgow and Edinburgh.	Ü
<b>Option 7</b> – Ravenscraig Rail Station, enhancement of Active Travel and marketing of Active Travel (PTP)	This option would provide improved access for residents of Ravenscraig towards Glasgow, however, would require additional interchanges to access Edinburgh and to access Motherwell for north-south rail links.	Ü

## 4.6 Summary

A summary of the options against the Transport Planning Objectives (TPOs) is illustrated in the table below.

Option	TPO1	TPO2	TPO3	TPO4
<b>Option 1</b> – Integrated Bus Infrastructure in Masterplan, enhancement of Active Travel and marketing of Active Travel (PTP)	ü	ü	ü	ü
<b>Option 2</b> - Bus Corridor, enhancement of Active Travel and marketing of Active Travel (PTP)	ü	ü	ü	ü
<b>Option 3</b> – Circular Service (Rail-Bus), enhancement of Active Travel and marketing of Active Travel (PTP)	ü	üü	ü	üü
<b>Option 4</b> – New Local North-South Bus Service, enhancement of Active Travel and marketing of Active Travel (PTP)	ü	üü	ü	ü
<b>Option 7</b> – Ravenscraig Rail Station, enhancement of Active Travel and marketing of Active Travel (PTP)	ü	üü	ü	ü

Option 3 is expected to make the most significant contribution to delivering the TPOs, while option 4 will also make a strong contribution to the TPOs. Both options 1 and 2 are expected to make in general a positive contribution, although on a much smaller scale to options 3 and 4. There is potential to integrate Option 1 with either Option 3 or 4 as this infrastructure would complement both these options, as would option 2. Option 7 is expected to contribute towards delivering the TPOs although would have a negative impact towards TPO1 by eliminating the interchange opportunity at Motherwell to enable north-south travel through North Lanarkshire which is a key movement as identified in the Pre-Appraisal travel to work analysis.

As can be seen in the table, from a high-level review, in general all the options are expected to make a positive contribution towards delivering the TPOs, albeit at differing levels of impact, with the exception of Option 7 against TPO1.

## **5. STAG Criteria**

### **5.1 Introduction**

At the Part I Appraisal, the likely impacts of each option against the five STAG criteria should be undertaken. At this stage, the analysis should be qualitative and more detailed appraisal should not be undertaken until the Part II Appraisal.

It is important that the context and significance of the qualitative outcomes are clearly set out to allow an understanding of the rationale for the results using the seven-point scale.

## 6. Environment

### 6.1 Introduction

This section of the appraisal focuses on the potential environmental impacts of each of the options, allowing for a comparison to be undertaken to enable those options which are unsuitable on environmental grounds to be filtered out at an early stage. This also assists in the scoping of the options for more detailed appraisal at STAG Part II.

### 6.2 The Study Area

The study area for this STAG appraisal is the Ravenscraig masterplan site outlined in the early stages of this report. This is the main focus of this study and subsequent transport options and is also where any environmental impacts would be greatest.

### 6.3 Noise and Vibration

Transport is a major source of noise and noise exposure can have an adverse impact on human health and the perceived quality of life. People react differently to noise from different modes of transport and at the strategic level the effects are more difficult to quantify. For the options below increases in buses and trains have been considered with regards to noise and vibration effects.

**Option 1 – Integrated Bus Infrastructure in Masterplan, enhancement of Active Travel & marketing of Active Travel (PTP)**

**Option 2 – Bus Corridor, enhancement of Active Travel & marketing of Active Travel (PTP)**

**Option 3 – Circular Service (Rail Bus), enhancement of Active Travel & marketing of Active Travel (PTP)**

**Option 4 – New Local North-South Service, enhancement of Active Travel & marketing of Active Travel (PTP)**

Each of the above options have been designed to encourage the operation of bus services in and through the Ravenscraig masterplan area. As it stands, there are no current bus services operating within the masterplan area, except for the night service from the Sports Centre. As such any of the above options would be designed to encourage bus operation within the site. However, the impacts of these new bus movements would be limited to those currently already living on site, with new residents expected to locate to the site after the inclusion of these bus services. As such there is potential for minor noise impacts on the existing residents.

<b>Potential for minor noise impact</b>	<b>Option 1</b>	<b>Option 2</b>	<b>Option 3</b>	<b>Option 4</b>
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**Option 7 – Ravenscraig Rail Station, enhancement of Active Travel & marketing of Active Travel (PTP)**

Increased noise and vibration is likely to be felt during the construction of a new rail station; this would be short term. During operation, trains stopping and starting are likely to have potential for minor noise and vibration impacts. However, the location of the site is out with close proximity to the main housing allocations, with the development of houses in proximity to the station not due for completion until 2045. As such it is likely that there would be potential for minor noise and vibration impacts to residents.

<b>Potential for minor noise impact</b>	<b>Option 7</b>
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## 6.4 Global Air Quality – carbon dioxide (CO<sub>2</sub>)

Carbon dioxide has been singled out as the most important transport induced greenhouse gas having a direct impact on global warming. Carbon dioxide (CO<sub>2</sub>) emissions are taken as a proxy in STAG for global air quality.

**Option 1** – Integrated Bus Infrastructure in Masterplan, enhancement of Active Travel & marketing of Active Travel (PTP)

**Option 2** – Bus Corridor, enhancement of Active Travel & marketing of Active Travel (PTP)

**Option 3** – Circular Service (Rail Bus), enhancement of Active Travel & marketing of Active Travel (PTP)

**Option 4** – New Local North-South Service, enhancement of Active Travel & marketing of Active Travel (PTP)

**Option 7** – Ravenscraig Rail Station, enhancement of Active Travel & marketing of Active Travel (PTP)

Each of the above options would encourage use of public transport and less car dependency. This will help reduce the levels of CO<sub>2</sub> in the area as more residents are encouraged to use sustainable modes of transport. Enhanced active travel infrastructure linking into key towns and local rail stations would also help lower the car mode share.

Potential for minor benefit	Option 1	Option 2	Option 3	Option 4	Option 7
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## 6.5 Local Air Quality – particulates (PM<sub>10</sub>) and nitrogen dioxide (NO<sub>2</sub>)

Several air pollutants can cause specific local problems if they occur at high concentrations. The key pollutants to be considered in STAG are NO<sub>2</sub> and PM<sub>10</sub> (of primary concern in terms of health), which together are taken to account for local air quality.

**Option 1** – Integrated Bus Infrastructure in Masterplan, enhancement of Active Travel & marketing of Active Travel (PTP)

**Option 2** – Bus Corridor, enhancement of Active Travel & marketing of Active Travel (PTP)

**Option 3** – Circular Service (Rail Bus), enhancement of Active Travel & marketing of Active Travel (PTP)

**Option 4** – New Local North-South Service, enhancement of Active Travel & marketing of Active Travel (PTP)

**Option 7** – Ravenscraig Rail Station, enhancement of Active Travel & marketing of Active Travel (PTP)

There are likely to be both benefits and adverse impacts as a result of each of the above options, due to changes in road traffic flows. Each option would encourage users to switch to sustainable transport instead of private car use. Overall expected to result in neither a benefit or impact.

No benefit or Impact	Option 1	Option 2	Option 3	Option 4	Option 7
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## 6.6 Water quality, drainage and flood defence

Water quality is critical to all aspects of life, including people, biodiversity, agriculture and recreation. New transport infrastructure has the potential to directly impact on water quality either through construction or through operation, such as sediment dispersal or runoff containing pollutants.

**Option 1 – Integrated Bus Infrastructure in Masterplan, enhancement of Active Travel & marketing of Active Travel (PTP)**

**Option 2 – Bus Corridor, enhancement of Active Travel & marketing of Active Travel (PTP)**

**Option 3 – Circular Service (Rail Bus), enhancement of Active Travel & marketing of Active Travel (PTP)**

**Option 4 – New Local North-South Service, enhancement of Active Travel & marketing of Active Travel (PTP)**

**Option 7 – Ravenscraig Rail Station, enhancement of Active Travel & marketing of Active Travel (PTP)**

The closest body of water is South Calder Water and each of the above options would not be expected to have any impact on or receive an impact from this watercourse. Bus movements would be restricted to existing or new road surfaces which do not interact with the watercourse. The railway crosses the South Calder Water, but does so on an elevated bridge, thus there is no potential for interaction between the railway line and the watercourse. Overall expected result is no change, so no benefit or impact predicted.

<b>No benefit or Impact</b>	<b>Option 1 =</b>	<b>Option 2 =</b>	<b>Option 3 =</b>	<b>Option 4 =</b>	<b>Option 7 =</b>
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## 6.7 Geology

In STAG geology considerations take account the affect a transport option could have on strata, ground collapse, contamination of land, or altering hydrology.

**Option 1 – Integrated Bus Infrastructure in Masterplan, enhancement of Active Travel & marketing of Active Travel (PTP)**

**Option 2 – Bus Corridor, enhancement of Active Travel & marketing of Active Travel (PTP)**

**Option 3 – Circular Service (Rail Bus), enhancement of Active Travel & marketing of Active Travel (PTP)**

**Option 4 – New Local North-South Service, enhancement of Active Travel & marketing of Active Travel (PTP)**

The above bus options would have no impact on geology, therefore, expected result would be no benefit or impact predicted.

<b>No benefit or Impact</b>	<b>Option 1 =</b>	<b>Option 2 =</b>	<b>Option 3 =</b>	<b>Option 4 =</b>
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**Option 7 – Ravenscraig Rail Station, enhancement of Active Travel & marketing of Active Travel (PTP)**

There could be minor impacts to the landscape due to groundwork during the construction phase. There is also a risk of disturbing contaminated land. Both issues are likely to be temporary during the construction phase and through proper management the impacts can be effectively mitigated. The overall expected result would be no benefit or impact predicted.

<b>No benefit or Impact</b>	<b>Option 7 =</b>
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## 6.8 Biodiversity and habitats

Biodiversity, the richness of species, ecosystems and habitats, is now recognised as a key issue that underpins policy making in many countries. The development of transport infrastructure has a number of potential effects on biodiversity.



The Ravenscraig Masterplan site does not sit within any ecological designated areas. There is the Strathclyde Country Park located approximately 4km to the west. Also within this area is the Hamilton Low Parks, a Site of Special Scientific Interest for Grey Heron breeding. Additionally, approximately 5km to the south-east there is the Greenhead Moss and Perchy Pond, Local Nature Reserve.

These areas of interest are well out with the study area and all options are unlikely to impact upon them.

**Option 1 – Integrated Bus Infrastructure in Masterplan, enhancement of Active Travel & marketing of Active Travel (PTP)**

**Option 2 – Bus Corridor, enhancement of Active Travel & marketing of Active Travel (PTP)**

**Option 3 – Circular Service (Rail Bus), enhancement of Active Travel & marketing of Active Travel (PTP)**

**Option 4 – New Local North-South Service, enhancement of Active Travel & marketing of Active Travel (PTP)**

The above bus options would have no impact on biodiversity and habitats, therefore, expected result would be no benefit or impact predicted.

<b>No benefit or Impact</b>	<b>Option 1 =</b>	<b>Option 2 =</b>	<b>Option 3 =</b>	<b>Option 3 =</b>
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**Option 7 – Ravenscraig Rail Station, enhancement of Active Travel & marketing of Active Travel (PTP)**

As part of the construction of the station, there would be no impact on the areas of interest or the West Calder Water. However, some trees and woodland habitat may be removed to accommodate the station, which could affect any animal or bird species nesting along the path of the current railway.

<b>Potential for minor impact on biodiversity and habitat</b>	<b>Option 7 ⚠</b>
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## 6.9 Landscape

The Ravenscraig masterplan area is a brownfield site and does not sit within any designated landscape areas. As mentioned above the closest designated area is the Strathclyde Country Park located 4km to the west of the location.

**Option 1 – Integrated Bus Infrastructure in Masterplan, enhancement of Active Travel & marketing of Active Travel (PTP)**

**Option 2 – Bus Corridor, enhancement of Active Travel & marketing of Active Travel (PTP)**

**Option 3 – Circular Service (Rail Bus), enhancement of Active Travel & marketing of Active Travel (PTP)**

**Option 4 – New Local North-South Service, enhancement of Active Travel & marketing of Active Travel (PTP)**

**Option 7 – Ravenscraig Rail Station, enhancement of Active Travel & marketing of Active Travel (PTP)**

None of the above options are likely to impact upon the landscape as they would make use of current infrastructure in terms of bus on road and trains on current rail. The development of any potential rail station is also likely to have no significant impact on the landscape as it would be contained within an area marked for further housing development.

<b>No benefit or Impact</b>	<b>Option 1 =</b>	<b>Option 2 =</b>	<b>Option 3 =</b>	<b>Option 4 =</b>	<b>Option 7 =</b>
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## 6.10 Visual amenity

The Ravenscraig masterplan area is a brownfield site and does not sit within any areas that contain panoramas, or specific views.

**Option 1 – Integrated Bus Infrastructure in Masterplan, enhancement of Active Travel & marketing of Active Travel (PTP)**

**Option 2 – Bus Corridor, enhancement of Active Travel & marketing of Active Travel (PTP)**

**Option 3 – Circular Service (Rail Bus), enhancement of Active Travel & marketing of Active Travel (PTP)**

**Option 4 – New Local North-South Service, enhancement of Active Travel & marketing of Active Travel (PTP)**

**Option 7 – Ravenscraig Rail Station, enhancement of Active Travel & marketing of Active Travel (PTP)**

None of the above options are likely to impact upon the visual amenity of the surrounding environment.

<b>No benefit or Impact</b>	<b>Option 1 =</b>	<b>Option 2 =</b>	<b>Option 3 =</b>	<b>Option 4 =</b>	<b>Option 7 =</b>
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## 6.11 Agriculture and soils

The Ravenscraig masterplan area is a brownfield site and does not sit in any areas of agricultural significance or soils suited to agriculture. Currently land remediation is underway to remove areas containing contaminated soils.

**Option 1 – Integrated Bus Infrastructure in Masterplan, enhancement of Active Travel & marketing of Active Travel (PTP)**

**Option 2 – Bus Corridor, enhancement of Active Travel & marketing of Active Travel (PTP)**

**Option 3 – Circular Service (Rail Bus), enhancement of Active Travel & marketing of Active Travel (PTP)**

**Option 4 – New Local North-South Service, enhancement of Active Travel & marketing of Active Travel (PTP)**

**Option 7 – Ravenscraig Rail Station, enhancement of Active Travel & marketing of Active Travel (PTP)**

Due to the site location, it is unlikely that any of the options will have an impact on agricultural land or soils.

<b>No benefit or Impact</b>	<b>Option 1 =</b>	<b>Option 2 =</b>	<b>Option 3 =</b>	<b>Option 4 =</b>	<b>Option 7 =</b>
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## 6.12 Cultural heritage

The Ravenscraig site was once the location of one of the largest steelworks in the UK and the history associated with the site is maintained in the local communities and through a commissioned sculpture outside the sports centre. The site has long since been cleared of its industrial past, and contains no buildings of historic importance or conservation areas.

**Option 1 – Integrated Bus Infrastructure in Masterplan, enhancement of Active Travel & marketing of Active Travel (PTP)**

**Option 2 – Bus Corridor, enhancement of Active Travel & marketing of Active Travel (PTP)**

**Option 3 – Circular Service (Rail Bus), enhancement of Active Travel & marketing of Active Travel (PTP)**

**Option 4 – New Local North-South Service, enhancement of Active Travel & marketing of Active Travel (PTP)**

**Option 7 – Ravenscraig Rail Station, enhancement of Active Travel & marketing of Active Travel (PTP)**

None of the above options should have an impact on the cultural heritage of the area.

**No benefit or Impact                      Option 1 =    Option 2 =    Option 3 =    Option 4 =    Option 7 =**

### 6.13 Options Appraisal

The table below summarises the overall scoring of each of the four options against the Environment criteria.

Option	Environment Scoring
<b>Option 1 – Integrated Bus Infrastructure in Masterplan, enhancement of Active Travel &amp; marketing of Active Travel (PTP)</b>	=
<b>Option 2 - Bus Corridor, enhancement of Active Travel and marketing of Active Travel (PTP)</b>	=
<b>Option 3 – Circular Service (Rail-Bus), enhancement of Active Travel and marketing of Active Travel (PTP)</b>	=
<b>Option 4 – New Local North-South Bus Service, enhancement of Active Travel and marketing of Active Travel (PTP)</b>	=
<b>Option 7 – Ravenscraig Rail Station, enhancement of Active Travel and marketing of Active Travel (PTP)</b>	=

## 7. Safety

### 7.1 Introduction

The safety criteria within STAG consists of two main sub-criteria; Accidents and Security.

### 7.2 Accidents

As part of the accident criteria the study must look to inform on the aspect of whether any option under consideration will have any measurable impact on the number of transport related accidents and/or their severity.

Each of the options under consideration are public transport options, which tend to be an inherently safer mode of transport than travelling by car, therefore, passengers on public transport experience a lower level of risk. Due to the current level of demand in the area and the lack of current public transport service provision any increase in bus patronage is likely to have a neutral impact on accidents. However, over time as the development comes further on-line and a reliable and frequent bus service is in operation, there is potential for users of car switch to public transport. This would likely lead to a benefit against the accident criteria with reduced instances of car based accidents.

Additionally, travel by rail is seen as offering a further reduction in risk as rail related accidents are far less common. This could again prove to show some benefits as a result of car users switching modes to rail.

If any of these options were to progress there are unlikely to be any significant detrimental impacts on accidents as a result.

Each of the options also include improvements to the active travel infrastructure which could help to reduce any accidents that currently occur in and around the area. In line with future mode share ambitions, these upgrades could also potentially assist in reducing any future accidents as the development becomes further established. These are likely to have a minor positive impact on all options.

**Option 1 – Integrated Bus Infrastructure in Masterplan, enhancement of Active Travel & marketing of Active Travel (PTP)**

**Option 2 – Bus Corridor, enhancement of Active Travel & marketing of Active Travel (PTP)**

**Option 3 – Circular Service (Rail Bus), enhancement of Active Travel & marketing of Active Travel (PTP)**

**Option 4 – New Local North-South Service, enhancement of Active Travel & marketing of Active Travel (PTP)**

Neutral benefit for those using currently using bus, with minor benefit for those switching to bus as the development becomes further established. Minor benefit for active travel users as infrastructure improvements could reduce the likelihood of accidents occurring, with segregated cycle and walking infrastructure.

**Minor benefit      Option 1 Ü    Option 2 Ü    Option 3 Ü    Option 4 Ü**

**Option 7 – Ravenscraig Rail Station, enhancement of Active Travel & marketing of Active Travel (PTP)**

Moderate benefit for those switching from car to rail and a minor benefit for those switching from bus to rail. Minor benefit for active travel users as infrastructure improvements could reduce the likelihood of accidents occurring.

**Moderate benefit      Option 7 ÜÜ**

### 7.3 Security

This section concerns improving the personal security of travellers and their property, including pedestrians, cyclists and public transport and car users.

The bus options would improve bus stop infrastructure in the area, which will improve the security of passengers waiting for buses. This would be achieved through better lighting and formalised waiting areas. Additionally, by agreeing on the quality of services that operate within the masterplan area, passengers could benefit from using higher quality vehicles and on-board CCTV to help improve security.

These benefits would be most significant for the most vulnerable groups such as the young, elderly, women travelling alone and those with mobility problems, which tend to face the greatest security concerns, both real and perceived, when using the transport network.

Option 7 would involve the construction of a new railway station and it is assumed that it would be built in accordance to guidance and design standards that ensure the security of passengers when waiting to board or alight from trains. Measures would include, lighting, shelter, CCTV provision, and emergency call facilities. While on board trains, passengers again would benefit from security measures such as CCTV. Those switching to rail from other modes of public transport or active travel are likely to receive a moderate benefit in security.

Security of active travel users will also likely increase as a result of improved infrastructure as part of any of the above options. This would include adequate lighting, and clearer visibility by trimming back vegetation.

**Option 1 – Integrated Bus Infrastructure in Masterplan, enhancement of Active Travel & marketing of Active Travel (PTP)**

**Option 2 – Bus Corridor, enhancement of Active Travel & marketing of Active Travel (PTP)**

**Option 3 – Circular Service (Rail Bus), enhancement of Active Travel & marketing of Active Travel (PTP)**

**Option 4 – New Local North-South Service, enhancement of Active Travel & marketing of Active Travel (PTP)**

Moderate benefit from improved bus stop infrastructure such as shelters and lighting. Both current and future bus users would gain this benefit. Moderate benefit for active travel users through improved cycling storage and infrastructure.

**Moderate benefit      Option 1 ùù Option 2 ùù Option 3 ùù Option 4 ùù**

**Option 7 – Ravenscraig Rail Station, enhancement of Active Travel & marketing of Active Travel (PTP)**

No benefit for existing train users who have switched station. Moderate benefit for those passengers switching from bus to rail. Moderate benefit for active travel users through improved cycling storage and infrastructure.

**Moderate benefit      Option 7 ùù**

### 7.4 Options Appraisal

The summary table below outlines the overall scoring of each of the four options against the Safety criteria.

Option	Safety Scoring
<b>Option 1 – Integrated Bus Infrastructure in Masterplan, enhancement of Active Travel &amp;</b>	<b>ùù</b>

marketing of Active Travel (PTP)	
<b>Option 2</b> - Bus Corridor, enhancement of Active Travel and marketing of Active Travel (PTP)	üü
<b>Option 3</b> – Circular Service (Rail-Bus), enhancement of Active Travel and marketing of Active Travel (PTP)	üü
<b>Option 4</b> – New Local North-South Bus Service, enhancement of Active Travel and marketing of Active Travel (PTP)	üü
<b>Option 7</b> – Ravenscraig Rail Station, enhancement of Active Travel and marketing of Active Travel (PTP)	üü

## 8. Economy

### 8.1 Introduction

The Economy Criterion has three sub-criteria, which together should summarise the full extent of economic impacts resulting from an option. These include:

- Transport Economic Efficiency (TEE), covers the benefits ordinarily captured by standard cost-benefit analysis – the transport impacts of an option (including the use of bespoke values if appropriate and subject to approval by Transport Scotland);
- Wider Economic Benefits (WEBs) relate to the notion of potential transport impacts on agglomeration and the relationship between agglomeration and productivity. This is not included in initial Part 1 Appraisal and should only be completed in Part 2 Appraisal; and
- Economic Activity and Location Impacts (EALIs), allows the impact of an option to be expressed in terms of their net effects on the local and/or national economy.

### 8.2 Transport Economic Efficiency (TEE)

At this stage of the appraisal a key issue is understanding the scope of the TEE appraisal. Each of the options could potentially impact upon each of the elements below.

#### Journey Time Savings / Increases

All options could potentially deliver journey time savings to existing and new public transport users and those switching from car.

#### **Option 1 – Integrated Bus Infrastructure in Masterplan, enhancement of Active Travel & marketing of Active Travel (PTP)**

Could potentially deliver journey time savings for both current and future residents by providing bus priority measures into, throughout and out the masterplan site. Journey time savings could potentially be felt by all bus users if there is an introduction of a new bus service in the Ravenscraig masterplan site. If, however, an existing service is rerouted to serve the site instead then existing bus passengers may experience an increase in journey time. Bus priority measures could potentially have negative impacts on journey times for car users, but this could be marginal if there is a sufficient mode share shift due to the implementation of this option.

Active travel users, could also experience a moderate journey time saving with additional infrastructure in place to provide direct links to key destinations and local transport hubs.

#### **Minor benefit                      Option 1 Ü**

#### **Option 2 – Bus Corridor, enhancement of Active Travel & marketing of Active Travel (PTP)**

This option could deliver journey time savings for all public transport users, including current and future residents of the masterplan area and existing passengers on local services over private car use. Bus priority measures throughout the local area and into Motherwell could provide passengers with time savings to access other local services or interchange to rail. Journey time savings could be felt by all if new services operate through the site, if however, service provision is by existing services, current passengers of this service may experience an increase in journey time. These increases could hopefully be mitigated by time savings elsewhere on the network as a result of the priority measures. Bus priority measures could potentially have negative impacts on journey times for car users, but this could be marginal if there is a sufficient mode share shift due to the implementation of this option.

Active travel users, could also experience a moderate journey time saving with additional infrastructure in place to provide direct links to key destinations and local transport hubs.

**Minor benefit**      **Option 2** Û

**Option 3 – Circular Service (Rail Bus), enhancement of Active Travel & marketing of Active Travel (PTP)**

Similar to the other two bus options above, option 3 could also deliver journey time savings for current and future residents of the site over car use for end to end trips. A direct service linking into the local existing rail network will provide journey time savings for the local residents and potentially provide benefits of using car to local rail stations as it would reduce the time needed to drive to one of the stations, search time for a parking space and then walk time to the station itself. If this service is provided by a new service, journey time savings will be delivered to a greater volume of people. If, however, this service is provided by an existing operating service then existing passengers could potentially experience journey time increases.

Active travel users, could also experience a moderate journey time saving with additional infrastructure in place to provide direct links to key destinations and local transport hubs.

**Moderate benefit**      **Option 3** ÜÜ

**Option 4 – New Local North-South Bus Service, enhancement of Active Travel & marketing of Active Travel (PTP)**

Option 4 would provide the opportunity to improve journey times for residents with opportunities to connect to rail at Shieldmuir and express buses at Eurocentral. Furthermore, the bus service would provide local residents with improved journey times along the north-south axis through the site to connect to employment areas including Eurocentral and Wishaw hospital.

Active travel users, could also experience a moderate journey time saving with additional infrastructure in place to provide direct links to key destinations and local transport hubs.

**Minor benefit**      **Option 4** Û

**Option 7 – Ravenscraig Rail Station, enhancement of Active Travel & marketing of Active Travel (PTP)**

Any new rail station for the Ravenscraig site would be situated on the Wishaw Deviation Line, on which no current rail services operate. As such there would be a requirement for timetable alterations to the Lanark service to redirect the service along this section of track. This option would involve rerouting the Lanark service resulting in Shieldmuir and Motherwell stops being dropped in favour of a Ravenscraig stop. This will have a major negative impact on existing passengers of this service as journey times will increase. Additionally, these stations would lose direct linkages to Wishaw and Carluke, further increasing journey times. Residents of Ravenscraig will likely receive a moderate benefit in travel towards Glasgow but would experience an increase in travel time to other locations in North Lanarkshire due to the need of increased interchanges to access Motherwell station. Therefore, there is likely to be an overall minor disbenefit due to the lack of connectivity and impact on existing rail users outweighing the benefits outweighing the journey time improvements from the site.

Active travel users, could also experience a moderate journey time saving with additional infrastructure in place to provide direct links to key destinations and local transport hubs.

**Minor disbenefit**      **Option 7** Û

### Journey Time Reliability

All options would be expected to deliver an improvement in journey time reliability for public transport users and those using active travel modes.





### Option 1 – Integrated Bus Infrastructure in Masterplan, enhancement of Active Travel & marketing of Active Travel (PTP)

### Option 2 – Bus Corridor, enhancement of Active Travel & marketing of Active Travel (PTP)

Both options would increase journey time reliability with bus priority measures mitigating against journey time delays as a result of congestion. Bus priority measures could potentially have negative impacts on journey times for car users, but this could be marginal if there is a sufficient mode share shift due to the implementation of this option.

Active travel users will also experience improved journey time reliability by having direct links to key areas, infrastructure enhancements to enable cyclists to bypass busy junctions and lane segregation allowing cyclists to avoid conflicts with walkers and traffic.

**Minor benefit**                      **Option 1**  **Option 2** 

### Option 3 – Circular Service (Rail Bus), enhancement of Active Travel & marketing of Active Travel (PTP)

A rail-bus would provide residents with a reliable service linking the masterplan area to the existing rail network. This would provide frequent and reliable access to key rail services with integrated timetables between bus and rail to reduce wait and interchange times.

Active travel users will also experience improved journey time reliability by having direct links to key areas, infrastructure enhancements to enable cyclists to bypass busy junctions and lane segregation allowing cyclists to avoid conflicts with walkers and traffic.

**Minor benefit**                      **Option 3** 

### Option 4 – New Local North-South Bus Service, enhancement of Active Travel & marketing of Active Travel (PTP)

Similar to option 3, option 4 would provide residents with a reliable bus service, providing access to local employment centres and health facilities. Timetables can be scheduled to tie in with arrival and departures of rail services at Shieldmuir and the express buses at Eurocentral to provide interchange opportunities.

Active travel users will also experience improved journey time reliability by having direct links to key areas, infrastructure enhancements to enable cyclists to bypass busy junctions and lane segregation allowing cyclists to avoid conflicts with walkers and traffic.

**Minor benefit**                      **Option 4** 

### Option 7 – Ravenscraig Rail Station, enhancement of Active Travel & marketing of Active Travel (PTP)

A rail service within the Ravenscraig masterplan area would provide residents with a regular train service. This would be considered more reliable than other options, including car, due to the tight controls on the running of services on the rail network.

Active travel users will also experience improved journey time reliability by having direct links to key areas, infrastructure enhancements to enable cyclists to bypass busy junctions and lane segregation allowing cyclists to avoid conflicts with walkers and traffic.

**Moderate benefit**                      **Option 7**  

## Journey Quality

### Option 1 – Integrated Bus Infrastructure in Masterplan, enhancement of Active Travel & marketing of Active Travel (PTP)

### Option 2 – Bus Corridor, enhancement of Active Travel & marketing of Active Travel (PTP)

Options 1 & 2 would increase journey quality for all users, as bus stop infrastructure would be improved as a result of this option, such as shelters, lighting and signage. Raised boarding kerbs, where appropriate, would also improve accessibility for people with mobility difficulties. Additionally, the bus priority measures, reduce the time spent sitting in congestion.

Active travel users would also experience an improvement in journey quality with further provision of infrastructure such as segregated cycle routes and increased secure cycle storage.

**Minor benefit**      Option 1  Option 2 

### Option 3 – Circular Service (Rail Bus), enhancement of Active Travel & marketing of Active Travel (PTP)

As with the other bus options, this option would improve journey quality by providing a frequent service to local rail stations. This would involve either operating a specific rail-bus with adequate on-board storage for luggage and potentially bikes, or else incorporated into an existing local service, which are operated by well-known bus operators with high quality low floor vehicles.

Active travel users would also experience an improvement in journey quality with further provision of infrastructure such as segregated cycle routes and increased secure cycle storage.

**Minor benefit**      Option 3 

### Option 4 – New Local North-South Bus Service, enhancement of Active Travel & marketing of Active Travel (PTP)

Option 4 would deliver similar benefits to option 3, with the operation of high quality vehicles, operating with onboard CCTV, low floor access and a frequent service.

Active travel users would also experience an improvement in journey quality with further provision of infrastructure such as segregated cycle routes and increased secure cycle storage.

**Minor benefit**      Option 4 

### Option 7 – Ravenscraig Rail Station, enhancement of Active Travel & marketing of Active Travel (PTP)

Travelling by rail is often viewed as a high-quality journey and as such a rail station in Ravenscraig would provide residents with such a service. Due to the position of the rail station, a high proportion of employees and a significant number of residents in Ravenscraig would still be required to interchange between other non-walking modes and rail as they would to access existing local stations.

Active travel users would also experience an improvement in journey quality with further provision of infrastructure such as segregated cycle routes and increased secure cycle storage.

**Moderate benefit**      Option 4  

## Farebox Revenue

### Option 1 – Integrated Bus Infrastructure in Masterplan, enhancement of Active Travel & marketing of Active Travel (PTP)

### Option 2 – Bus Corridor, enhancement of Active Travel & marketing of Active Travel (PTP)

### Option 3 – Circular Service (Rail Bus), enhancement of Active Travel & marketing of Active Travel (PTP)

**Option 4 – New Local North-South Bus Service, enhancement of Active Travel & marketing of Active Travel (PTP)**

Each of the above options have been identified for their aim of encouraging public transport patronage and a switch away from the private car. Through successful implementation of any of the above options, it would be expected that there would be a slight increase in bus operator farebox revenue as a result of increased patronage levels. Revenue may then further increase over the build out period of the masterplan site due to increased patronage as a result of the development of further residential units, construction of local schools and development of employment and retail units.

**Minor benefit                      Option 1     Option 2     Option 3     Option 4**

**Option 7 – Ravenscraig Rail Station, enhancement of Active Travel & marketing of Active Travel (PTP)**

Option 7 may result in an overall farebox revenue reduction. To serve a station located in the Ravenscraig masterplan site, existing services from Lanark would need to be rerouted to use the Wishaw Deviation line and stop at a potential Ravenscraig station. This service has seen considerable growth in patronage over recent years as set out in the transport context of the pre-appraisal, with Shieldmuir witnessing an 85% growth in patronage. Rerouting the service would be detrimental to this growth as both Shieldmuir and Motherwell stations would be excluded, therefore, reducing connectivity from these stations with other locations such as Carlisle and Wishaw. This service already has a solid customer base and this is likely to suffer as a result, with expected demand from Ravenscraig unlikely to offset the potential loss of patronage. Potential outcomes could see those existing passengers either switching to another station, switch to bus or more likely either revert or switch to using car. More information on demand can be found in Appendix C.

**Moderate disbenefit                      Option 7**

**Vehicle Operating Costs**

**Option 1 – Integrated Bus Infrastructure in Masterplan, enhancement of Active Travel & marketing of Active Travel (PTP)**

**Option 2 – Bus Corridor, enhancement of Active Travel & marketing of Active Travel (PTP)**

**Option 3 – Circular Service (Rail Bus), enhancement of Active Travel & marketing of Active Travel (PTP)**

**Option 4 – New Local North-South Bus Service, enhancement of Active Travel & marketing of Active Travel (PTP)**

Each of the bus options would be expected to increase the number of bus kilometres so there would be a corresponding increase in bus operating costs. Additionally, there could also be a need for additional vehicles to be added to the bus fleet operating as new services or to allow bus operators to make changes to routes.

**No benefit or disbenefit                      Option 1 =    Option 2 =    Option 3 =    Option 4 =**

**Option 7 – Ravenscraig Rail Station, enhancement of Active Travel & marketing of Active Travel (PTP)**

Option 7 would be likely to lead to an increase in vehicle operating costs as services would need to be run on a section of line that is currently not used, increasing vehicle kilometres as part of the rerouting of the Lanark-Glasgow service.

**No benefit or disbenefit                      Option 7 =**

**Operating and Maintenance Costs**

**Option 1 – Integrated Bus Infrastructure in Masterplan, enhancement of Active Travel & marketing of Active Travel (PTP)**

**Option 2 – Bus Corridor, enhancement of Active Travel & marketing of Active Travel (PTP)**

**Option 3 – Circular Service (Rail Bus), enhancement of Active Travel & marketing of Active Travel (PTP)**

**Option 4 – New Local North-South Bus Service, enhancement of Active Travel & marketing of Active Travel (PTP)**

Each of the bus options would lead to the introduction of additional and improved bus stop infrastructure. Such as shelters, signing and providing bins. This would require ongoing maintenance each year to clean and maintain these pieces of infrastructure. There may however be opportunities for commercial advertising to contribute to shelter maintenance costs. Option 2 may also involve further costs associated with implementing bus priority measures along a corridor, including systems such as BIAS.

Additional cost would need to be factored in for the maintenance of new cycling infrastructure including new cycle links, lighting and cycle storage.

No benefit or disbenefit	Option 1 =	Option 2 =	Option 3 =	Option 4 =
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**Option 7 – Ravenscraig Rail Station, enhancement of Active Travel & marketing of Active Travel (PTP)**

Option 7 would require the construction of a new rail station which will also have ongoing maintenance costs for whoever operates the station, Network Rail or ScotRail. There would also be a need for upgrading of the signals on the Wishaw Deviation line in addition to track maintenance as the track is currently not well used. There would also be operating costs associated with stopping a service at the Ravenscraig rail station. There could also be knock-on effects for other services as a result of rerouting this service.

Additional cost would need to be factored in for the maintenance of new cycling infrastructure including new cycle links, lighting and cycle storage.

Moderate disbenefit	Option 7 ∞∞
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**Fuel / Tax**

**Option 1 – Integrated Bus Infrastructure in Masterplan, enhancement of Active Travel & marketing of Active Travel (PTP)**

**Option 2 – Bus Corridor, enhancement of Active Travel & marketing of Active Travel (PTP)**

**Option 3 – Circular Service (Rail Bus), enhancement of Active Travel & marketing of Active Travel (PTP)**

**Option 4 – New Local North-South Bus Service, enhancement of Active Travel & marketing of Active Travel (PTP)**

**Option 7 – Ravenscraig Rail Station, enhancement of Active Travel & marketing of Active Travel (PTP)**

All of the options could potentially encourage a mode shift away from car onto public transport. Consequently, there could be a loss of revenue to HM Treasury as less private vehicles on the road will lead to less fuel consumption, therefore, a decrease in revenue made from tax on fuel.

No benefit or disbenefit	Option 1 =	Option 2 =	Option 3 =	Option 4 =	Option 7 =
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**Grant and Subsidies**

**Option 1 – Integrated Bus Infrastructure in Masterplan, enhancement of Active Travel & marketing of Active Travel (PTP)**

The majority of the bus stop infrastructure for this option will be located internally within the Ravenscraig masterplan area and thus the developer could build, fund or contribute to the infrastructure enhancements within the site boundary. Commercial advertising on shelters could contribute to shelter provision and maintenance.

An application could be made to Sustrans for a grant to help fund the active travel infrastructure.

#### **Option 2 – Bus Corridor, enhancement of Active Travel & marketing of Active Travel (PTP)**

As with option 1, the developer could fund or could contribute to funding for the infrastructure enhancements within the site boundary. Out with the site, funding could potentially be split between North Lanarkshire Council, SPT and the developer. Commercial advertising on shelters could contribute to shelter provision and maintenance.

An application could be made to Sustrans for a grant to help fund the active travel infrastructure.

<b>Minor disbenefit</b>	<b>Option 1</b>	<b>Option 2</b>
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#### **Option 3 – Circular Service (Rail Bus), enhancement of Active Travel & marketing of Active Travel (PTP)**

#### **Option 4 – New Local North-South Bus Service, enhancement of Active Travel & marketing of Active Travel (PTP)**

Options 3 and 4 would require the introduction of a new service. In the short time, there may be a requirement to subsidise a service to operate throughout the site until there is sufficient demand to make a service economically viable. This would involve subsidising a service/s to operate ideally throughout the day and will be most likely funded by the developer.

An application could be made to Sustrans for a grant to help fund the active travel infrastructure.

<b>Minor disbenefit</b>	<b>Option 3</b>	<b>Option 4</b>
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#### **Option 7 – Ravenscraig Rail Station, enhancement of Active Travel & marketing of Active Travel (PTP)**

A new rail station within the Ravenscraig masterplan area would involve significant capital outlay and there is likelihood for a requirement for central, regional or local government financial support for this option. The majority of the capital required for the station construction would probably be the responsibility of the developer, however, an application to the Scottish Stations Fund could provide support for the development of the station. Additionally, there would be likely to be a need for a subsidy to fund the operation of a rail service to offset the reduced patronage as a result of rerouting the Lanark service.

An application could be made to Sustrans for a grant to help fund the active travel infrastructure.

<b>Moderate disbenefit</b>	<b>Option 7</b>
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### **8.3 Wider Economic Benefits (WEBs)**

The inclusion of WEBs is not required at this stage of the appraisal process as they are an outcome of the analysis of the TEE analysis which is not included in a Stage 1 appraisal.

### **8.4 Economic Activity and Location Impacts (EALIs)**

All options have the potential to have positive EALIs impacts for the Ravenscraig masterplan area. Each option could open up access to the Ravenscraig masterplan area both for residents and for people travelling to the site. Land allocation has been set aside for employment opportunities within the Ravenscraig masterplan area and any of the options will provide an attractive proposition for potential businesses to locate here due to the presence of a reliable transport network. This could help increase the economic profile of the Ravenscraig site,

having a positive impact on the location to attract further services and residents to the area. Economic estimates for the masterplan site, have identified a potential for approximately 6,000 jobs to be located in the Ravenscraig area. This would have a significant impact on economic activity in the area, stimulating local economy growth through local businesses and through increased spending in the area. As such it is important that the options have the potential to help facilitate this economic growth and have positive impact on the local area.

Each option could also lead to some redistribution of economic activity away from the Ravenscraig site with residents having greater access to employment opportunities across the central belt. In particular, opportunities to interchange between sustainable transport modes to facilitate travel along the north-south axis within the North Lanarkshire local authority area as identified in the census travel to work analysis undertaken during the pre-appraisal stage. This could also provide local businesses with access to potential areas of a higher skilled workforce.

Overall, the EALIs have the potential to be of significance to the local area, the regional level and potentially the national level, due to the significant rise in population and employment into an area that has lain dormant for a significant period of time, stimulating growth and having a positive impact on the local area.

## 8.5 Options Appraisal

The summary table below outlines the overall scoring of each of the four options against the Economy criteria.

Option	Economy Scoring
<b>Option 1</b> – Integrated Bus Infrastructure in Masterplan, enhancement of Active Travel and marketing of Active Travel (PTP)	ü
<b>Option 2</b> - Bus Corridor, enhancement of Active Travel and marketing of Active Travel (PTP)	ü
<b>Option 3</b> – Circular Service (Rail-Bus), enhancement of Active Travel and marketing of Active Travel (PTP)	ü
<b>Option 4</b> – New Local North-South Bus Service, enhancement of Active Travel and marketing of Active Travel (PTP)	ü
<b>Option 7</b> – Ravenscraig Rail Station, enhancement of Active Travel and marketing of Active Travel (PTP)	ü

## 9. Integration

### 9.1 Introduction

The integration criteria of STAG has three sub-criteria, which together, summarise the full extent of the integration impacts of each of the options. The three sub-criteria are as follows:

**Transport Integration** – which relates to the degree to which an option fits with other transport infrastructure and services;

**Transport and Land-Use Integration** – which relates to the fit between the option and established land-use plans and land-use/transport planning guidance; and

**Policy Integration** – which relates to the appropriateness of the option in light of wider policies, including those of both Central and Local Government.

### 9.2 Transport Integration

**Option 1 – Integrated Bus Infrastructure in Masterplan, enhancement of Active Travel & marketing of Active Travel (PTP)**

**Option 2 – Bus Corridor, enhancement of Active Travel & marketing of Active Travel (PTP)**

**Option 3 – Circular Service (Rail Bus), enhancement of Active Travel & marketing of Active Travel (PTP)**

**Option 4 – New Local North-South Bus Service, enhancement of Active Travel & marketing of Active Travel (PTP)**

Each of the above bus options would provide greater transport integration for both existing and future bus users. The improved infrastructure or accessibility afforded by each of these options would enable improved integration between transport modes including bus to rail and active travel to both bus and rail. The Pan-Lanarkshire Orbital Route could also enable further integration in the future, opening up further north-south transport integration. There would also be a moderate benefit for active travel users with improved direct links between the masterplan area and surrounding local services and towns.

**Minor and Moderate benefit**                      **Option 1** ◡   **Option 2** ◡   **Option 3** ◡◡   **Option 4** ◡◡

**Option 7 – Ravenscraig Rail Station, enhancement of Active Travel & marketing of Active Travel (PTP)**

Although there is an existing rail link passing through the eastern edge of the masterplan area, currently no services operate on the line. As such to integrate the station into the transport network, current rail services would need to be rerouted to serve Ravenscraig. As a consequence, current integration of Shieldmuir and Motherwell stations would be negatively impacted upon as the stations would be underserved and lose direct services to Lanark, Wishaw and Carluke. Due to the position of a station at Ravenscraig, a high proportion of employees and a significant number of residents in Ravenscraig would still be required to interchange between other non-walking modes and rail, as they would to access existing local stations. There would then be a further need for other integration measures such as a local bus service, car parking facilities and active travel provision.

**Potential for major negative impact**                      **Option 6** ◡◡◡

### 9.3 Transport and Land-Use Integration

**Option 1 – Integrated Bus Infrastructure in Masterplan, enhancement of Active Travel & marketing of Active Travel (PTP)**



**Option 2 – Bus Corridor, enhancement of Active Travel & marketing of Active Travel (PTP)**

**Option 3 – Circular Service (Rail Bus), enhancement of Active Travel & marketing of Active Travel (PTP)**

**Option 4 – New Local North-South Bus Service, enhancement of Active Travel & marketing of Active Travel (PTP)**

**Option 7 – Ravenscraig Rail Station, enhancement of Active Travel & marketing of Active Travel (PTP)**

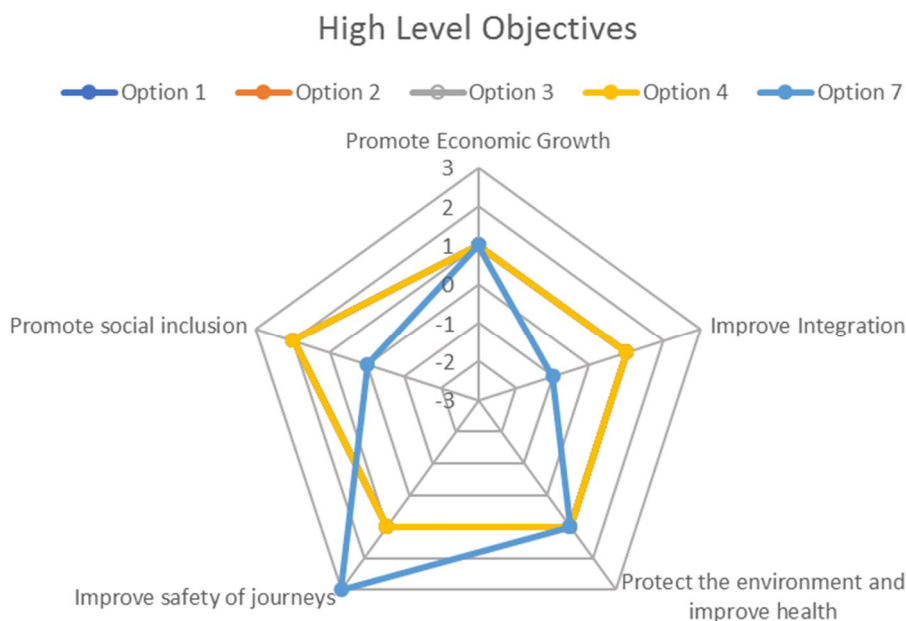
Each of the options could potentially have a positive impact on transport and land-use integration. Each option would open up the Ravenscraig masterplan area to the wider public transport network and facilitate an important role in releasing land allocations for development and encouraging population growth and support the growth of the business and leisure markets within the Ravenscraig masterplan area. Option 4 would additionally open up opportunities to access further employment at Eurocentral.

**Moderate benefit      Option 1    Option 2    Option 3    Option 4    Option 7**

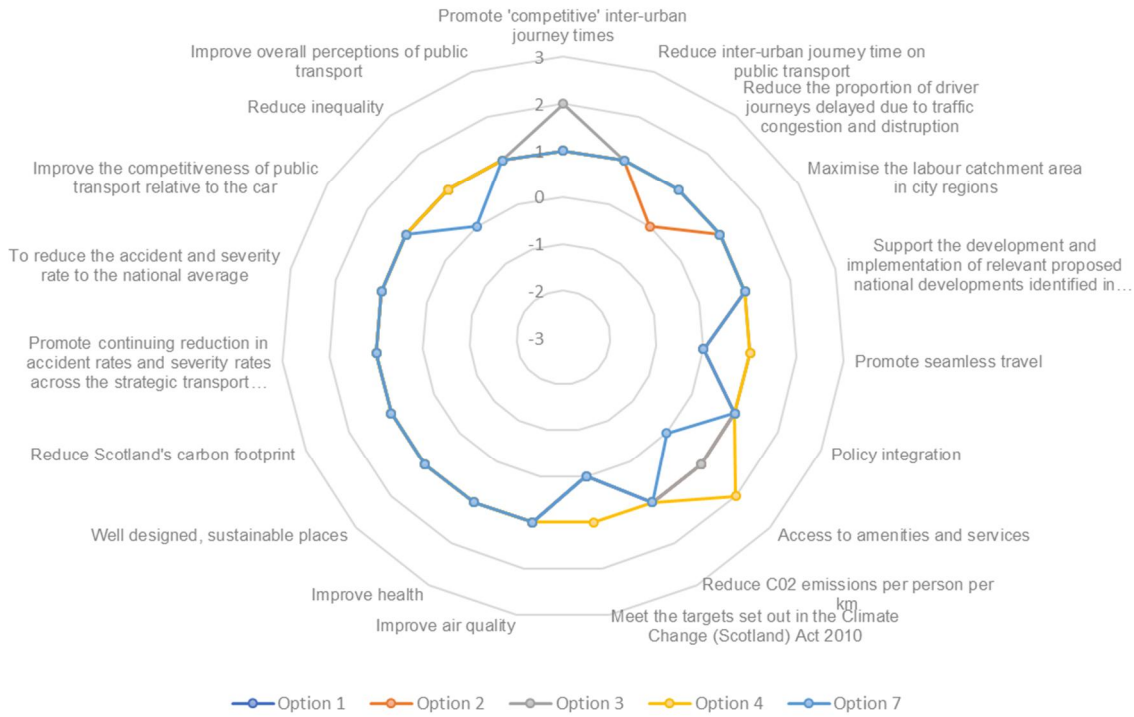
### 9.4 Policy Integration

This relates to the integration of each of the options in the context of wider policies, at the local, regional and national level. The Policy Assessment Framework (PAF) tool has been used to assess the performance of each of the options against the current Scottish Government transport policy objectives. The following charts are the outputs from the PAF tool and summarise the performance of each of the options against the five high level Government objectives and then the performance against the secondary objectives.

As options 1, 2, 3 and 4 are quite similar in nature, they often score similarly against certain objectives and thus the lines often overlap each other making them difficult to see. Overall, options 1, 2, 3 and 4 can be seen to make positive minor contributions to each of the high-level objectives. Option 7 does score a negative impact against integration and social inclusion due to impacts upon connectivity for local communities as a result of rerouting the Lanark service, which is discussed in the next section. With regards to the secondary objectives, all objectives deliver a positive contribution to each of the objectives. Options 3 and 4 in particular perform well against each objective.



Secondary Objectives



9.5 Options Appraisal

The summary table below outlines the overall scoring of each of the four options against the Integration criteria.

Option	Integration Scoring
<b>Option 1</b> – Integrated Bus Infrastructure in Masterplan, enhancement of Active Travel and marketing of Active Travel (PTP)	ü
<b>Option 2</b> - Bus Corridor, enhancement of Active Travel and marketing of Active Travel (PTP)	ü
<b>Option 3</b> – Circular Service (Rail-Bus), enhancement of Active Travel and marketing of Active Travel (PTP)	ü
<b>Option 4</b> – New Local North-South Bus Service, enhancement of Active Travel and marketing of Active Travel (PTP)	ü
<b>Option 7</b> – Ravenscraig Rail Station, enhancement of Active Travel and marketing of Active Travel (PTP)	ü

## 10. Accessibility and Social Inclusion

### 10.1 Introduction

The accessibility and social inclusion criteria is formed of a qualitative assessment of two sub criteria:

- Community Accessibility – which involves changes in accessibility provided by the public transport system and changes in accessibility by walking and cycling to local services; and
- Comparative Accessibility – which compares the impacts for different population groups relevant to local policy objectives and for policy sensitive locations such as Community Regeneration Areas and areas of deprivation defined by the Scottish Index of Multiple Deprivation.

### 10.2 Community Accessibility

#### Public Transport Accessibility

To assess the impacts of the options on the public transport network, accessibility analysis was undertaken using the software TRACC. The analysis of the outputs of the TRACC runs are presented in Appendix B. TRACC runs were undertaken for option 3 and for option 6, however, it is difficult to analyse the impacts of options 1 and 2 in TRACC as the analysis measures changes based on access to public transport services and timetabled data. A high-level assumption of the impacts of option 1 and 2 has been discussed instead.

TRACC runs were undertaken for AM peak (7am-10am) and PM peak (4pm-7pm) from Ravenscraig to Glasgow and Edinburgh and to key local destinations. The following section summarises the impacts on accessibility for each option.

#### **Option 1 – Integrated Bus Infrastructure in Masterplan, enhancement of Active Travel & marketing of Active Travel (PTP)**

#### **Option 2 – Bus Corridor, enhancement of Active Travel & marketing of Active Travel (PTP)**

Both options 1 and 2 have been designed to encourage bus patronage and to encourage bus service provision into and through the Ravenscraig site. As there is no current bus provision in the site, the successful implementation of either of these two options will increase public transport accessibility to the residents of the Ravenscraig masterplan area. If these services operate throughout the site, then access to key services and locations throughout the local network will become far more accessible than they are currently and provide interchange opportunities to further afield. Additionally, the construction of the two new links and in particular the bus link to Merry Street would provide alternative routing patterns.

**Minor benefit**                      **Option 1** Û    **Option 2** Û

#### **Option 3 – Circular Service (Rail Bus), enhancement of Active Travel & marketing of Active Travel (PTP)**

Option 3 provides moderate benefits to the residents of Ravenscraig providing journey time savings to Motherwell and Glasgow Central in both AM and PM time periods. Additional there are journey time savings to other local areas such as Coatbridge and Cumbernauld. This option facilitates the opportunity for interchange at Motherwell station which provides accessibility not only through the local area and to Glasgow and Edinburgh but also cross border. This would also assist in providing opportunities to be able to complete the desired travel to work movements as identified from the census analysis in the pre-appraisal.

**Moderate benefit**                      **Option 3** ÛÛ

#### **Option 4 – New Local North-South Bus Service, enhancement of Active Travel & marketing of Active Travel (PTP)**

Option 4 provides Ravenscraig with journey time savings in both the AM and PM peaks compared to the current Do-Minimum. The greatest journey time savings attributed to this option is at the local level, providing savings to areas such as Airdrie, Coatbridge and Cumbernauld. Connectivity to Airdrie is greatly improved with interchange opportunities provided at Eurocentral to continue travelling north. Reductions in travel times to both Edinburgh and Glasgow are also delivered through this option with the interchange opportunities provided at Shieldmuir rail station and express bus at Eurocentral.

**Moderate benefit**      **Option 4** ððð

#### **Option 7 – Ravenscraig Rail Station, enhancement of Active Travel & marketing of Active Travel (PTP)**

As part of the accessibility analysis, this option was broken down into 2 sub-options, 7a which included reducing the Lanark Glasgow service to 1 train per hour with the second train rerouted to serve Ravenscraig and 7b which rerouted the Lanark service in its entirety.

From the analysis, it is clear that although options 7a and 7b provide journey time benefits to residents and visitors to the Ravenscraig site, they have a significant negative impact on accessibility and journey times for those currently using the Lanark service and those travelling to / from Motherwell and Shieldmuir. The most significant impact is on local accessibility with travel times to Hamilton, Airdrie, Coatbridge and Cumbernauld all increasing, especially for Shieldmuir, where the largest increase in journey time was 53 minutes in the PM to Hamilton under option 7b. Both of these scenarios have a negative impact on local accessibility and would not help deliver against TPO1. Although in some instances travel times do not increase for Motherwell, the frequency of service is heavily impacted upon, with passengers at the station losing two services per hour.

**Major Negative Impact**      **Option 7** ððð

#### **Access to Local Services**

All of the options include enhancements to the active travel infrastructure throughout the masterplan area and through the surrounding areas. Enhancements such as additional cycle lanes, direct linkages, and increased cycle storage will all assist in improving accessibility by walking and cycling to local services and town centres. Creating direct linkages from the masterplan site to key surrounding town centres will improve access for current residents, students and leisure users. Additionally, when integrated with any of the above options, provides users with greater access to the wider public transport network and key services located further afield.

**Minor benefit**      **Option 1** ð    **Option 2** ð    **Option 3** ð    **Option 4** ððð **Option 7** ð

## **10.3 Comparative Accessibility**

### **Impacts for Population Groups**

The four bus options will bring benefits to the most vulnerable population groups such as low-income households, households without access to cars, disabled and elderly people, the young and ethnic minorities. Bus is a traditionally strong option for delivering benefits to such populations and communities as it provides easier access both in terms of physical access to vehicles and access to destinations. Both options 1 and 2 are designed to improve bus journey time and reliability and to encourage bus operations into and through the masterplan site, therefore, providing residents and visitors to the site with a reliable and frequent bus service. Options 3 and 4 will also offer this, but with integration with rail will provide further benefits for those wishing to travel further afield or from further afield to the masterplan area.

Option 7 would also offer benefits to different population groups; however, rail is often seen as being a more expensive alternative than bus and is often associated with a higher income socio-demographic. Furthermore, a station located at Ravenscraig will be established with a more strategic public transport offering, with services operating between the site and Glasgow. This will remove accessibility to other local stations as a result of rerouting trains off the mainline and onto the Wishaw Deviation Line. Therefore, benefits will mainly be

recorded by commuters from and to the site. It is unlikely that the most vulnerable groups in the area would be travelling regularly to these locations, which the travel to work analysis also pointed towards, however, with this option in place, it could assist vulnerable groups to travel to these locations to seek other employment and educational opportunities.

**Minor, Moderate (dis)benefit      Option 1 ù    Option 2 ù    Option 3 ùù    Option 4 ùù    Option 7 ù**

**Impacts for Locations**

The masterplan area plays a key role in emerging policy at the local, regional and national level. The site is viewed as a key delivery component of the national planning framework and as such transport linkages are key to the success of the masterplan development. Each of the options will enable both current and future residents of the masterplan access to both the local and further employment, leisure and social markets. Each option will provide integration into the public transport network and offer greater benefits to residents and visitors of the area.

As the site is currently a brownfield site, there are no zones of deprivation. However, in close proximity to the site, there are several areas of deprivation. All of the bus options will offer greater benefits to these locations by providing local transport links for people to access the Ravenscraig site for employment and/or educational and leisure purposes and enable residents of the site to access the key services in these locations out with the site. Option 6 would provide essential access to and from the masterplan area, although it is highly probably that this option would come at the cost of other areas, by rerouting services thus reducing the service frequency and access to other areas as a result of the train service moving, therefore, potentially further increasing the level of deprivation in these areas.

**Minor and Moderate (dis)benefit      Option 1 ù    Option 2 ù    Option 3 ùù    Option 4 ùù    Option 7 ùù**

**10.4 Options Appraisal**

The summary table below outlines the overall scoring of each of the four options against the Accessibility and Social Inclusion criteria.

Option	Accessibility Scoring
<b>Option 1</b> – Integrated Bus Infrastructure in Masterplan, enhancement of Active Travel and marketing of Active Travel (PTP)	ù
<b>Option 2</b> - Bus Corridor, enhancement of Active Travel and marketing of Active Travel (PTP)	ù
<b>Option 3</b> – Circular Service (Rail-Bus), enhancement of Active Travel and marketing of Active Travel (PTP)	ùù
<b>Option 4</b> – New Local North-South Bus Service, enhancement of Active Travel and marketing of Active Travel (PTP)	ùù
<b>Option 7</b> – Ravenscraig Rail Station, enhancement of Active Travel and marketing of Active Travel (PTP)	ùù

## 11. Established Policy Directives

### 11.1 Introduction

The established policy directives identified during the objective setting stage in the Pre-Appraisal should be considered during the Part I appraisal. As part of this process the Transport Planning Objectives for this study were set to be closely aligned with the North Lanarkshire Local Transport Strategy.

### 11.2 North Lanarkshire LTS Objectives

An appraisal of the options against the objectives of the North Lanarkshire LTS has also been undertaken to determine their fit with local policy aspirations. The LTS ties in with the North Lanarkshire Single Outcome Agreement and Scottish Government Economic Strategy. The following section summarises each of the options against the LTS objectives.

**Objective 1** – To stimulate business and the economy and develop North Lanarkshire as an attractive place to invest, work and do business.

Option 1 Ü	Option 2 Ü	Option 3 ÜÜ	Option 4 ÜÜ	Option 7 ÜÜ
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**Objective 2** – To provide equal opportunities and enhance the choice, accessibility and availability of transport, particularly for those in deprived areas and those with limited access to the transport network.

Option 1 ÜÜ	Option 2 ÜÜ	Option 3 ÜÜ	Option 4 ÜÜ	Option 7 ÜÜ
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**Objective 3** – To promote safety in the community and enhance actual and perceived safety when travelling on the transport network.

Option 1 ÜÜ	Option 2 ÜÜ	Option 3 ÜÜ	Option 4 ÜÜ	Option 7 ÜÜ
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**Objective 4** – To protect North Lanarkshire’s natural and built environment and improve the health of its population.

Option 1 ÜÜ	Option 2 ÜÜ	Option 3 ÜÜ	Option 4 ÜÜ	Option 7 ÜÜ
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As can be seen above each of the options are consistent with the objectives of the North Lanarkshire LTS and that the scores are similar across each of those objectives. Each option would enable the Ravenscraig masterplan area to become integrated into the local network and open the site up to future development opportunities, stimulating economic growth and providing a boost to not only the local economy but also the regional and national economy.



## 12. Feasibility, Affordability and Public Acceptability

### 12.1 Introduction

At this stage of the STAG Part I initial appraisal, it is necessary to complete a qualitative assessment of each of the options against the feasibility, affordability and public perception criteria. Assessment of the options against each of the three criteria is undertaken using a similar scale to the criteria used when comparing against the five STAG criteria, minor, moderate and major.

### 12.2 Feasibility

The feasibility element considers:

- a preliminary assessment of the feasibility of construction or implementation and operation (if relevant) of an option and the status of its technology (e.g. proven, prototype, in development etc.) as well as any cost, timescale or deliverability risks associated with the construction or operation of the option, including consideration of the need for any departure from design standards that may be required. Similarly, consideration should be given to who would operate the option, including, if relevant, their statutory powers to operate an option and any other issues (e.g. cost) which may impact on its operation.

#### **Option 1 – Integrated Bus Infrastructure in Masterplan, enhancement of Active Travel & marketing of Active Travel (PTP)**

There are no known issues that make this option not feasible. The option itself would involve the further development of the public transport network within the Ravenscraig masterplan site, including bus priority measures, infrastructure such as bus shelters, signing, lighting and appropriate kerbing. Each of the existing and additional bus stop locations would need to be upgraded to meet these standards and this would be carried out in line with SPT guidance on bus stop design.

These enhancements to the bus infrastructure could be achieved relatively quickly and would not involve a great deal of construction. The developer would be required to pay or contribute to these enhancements and incorporate bus access design measures into the masterplan internal road layout design. Due to early discussions with the bus operators such design measures have been noted and fed into the evolving masterplan and as such this option is not expected to have any significant issues affecting its feasibility.

Additionally, for the second half of the option, enhancement of active travel, again there are no major issues affecting the feasibility of these enhancements. Key elements of high quality cycling infrastructure already exists within the masterplan site, and so provide a good base for further enhancement of the internal network. This would include providing new links that directly link the site with the local network, providing both cyclists and pedestrians with direct and easy access to and from the surrounding areas. Further construction of these path networks would be required and the responsibility of these within the site would lay primarily with the developer. However, due to the existence of key paths already within the site and the best design practice that has been applied, it is thought this would continue throughout the further development of the site and as such there are no foreseen issues affecting the feasibility of the option.

#### **Option 2 – Bus Corridor, enhancement of Active Travel & marketing of Active Travel (PTP)**

This option is similar in nature to the above, however, takes into account a much wider section of network. As with option 1 there are no current issues that make this option not feasible. A study along the corridor would be required to identify those sections that need improvements to the bus infrastructure such as shelters and kerbing. However, this option would involve introducing bus priority measures on the road network to enable reliable transit for buses without the detrimental effects of traffic congestion to timetable run times. As such systems such as BIAS would be looked at to be introduced where possible to the network to enable buses to have priority. The introduction of such systems would involve identifying where possible it is feasible to add the



system in. Again, all measures would be carried out in line with SPT guidance to ensure the best practices are implemented.

Additionally, for the second half of the option, enhancement of active travel, again there are no major issues affecting the feasibility of these enhancements. Key elements of high quality cycling infrastructure already exists within the masterplan site, and so provide a good base for further enhancement of the internal network. This would include providing new links that directly link the site with the local network, providing both cyclists and pedestrians with direct and easy access to and from the surrounding areas. Further construction of these path networks would be required and the responsibility of these within the site would lay primarily with the developer. However, due to the existence of key paths already within the site and the best design practice that has been applied, it is thought this would continue throughout the further development of the site and as such there are no foreseen issues affecting the feasibility of the option.

### **Option 3 – Circular Service (Rail Bus), enhancement of Active Travel & marketing of Active Travel (PTP)**

The introduction of a circular rail-bus onto the local bus network would be very feasible. The option would involve running a new service through the masterplan area and linking into a few of the existing rail stations, to open up opportunities of travel to and from the Ravenscraig masterplan area. Additional bus infrastructure would be necessary as the Ravenscraig site develops such as new bus stops designed to SPT standards. Cost is the main factor with this option and developer contributions would be required to make the option feasible. Furthermore, it would be necessary to limit the service to drop-off only out with the Ravenscraig site, with exception at the rail stations, due to the competitive nature of the bus network in and around the area. With these restrictions applied then this option becomes highly feasible.

Additionally, for the second half of the option, enhancement of active travel, again there are no issues affecting the feasibility of these enhancements. Key elements of high quality cycling infrastructure already exists within the masterplan site, and so provide a good base for further enhancement of the internal network. This would include providing new links that directly link the site with the local network, providing both cyclists and pedestrians with direct and easy access to and from the surrounding areas. Further construction of these path networks would be required and the responsibility of these within the site would lay primarily with the developer. However, due to the existence of these key paths already within the site and the best design practice that has been applied, it is thought this would continue throughout the further development of the site and as such there are no foreseen issues affecting the feasibility of the option.

### **Option 4 – New Local North-South Bus Service, enhancement of Active Travel & marketing of Active Travel (PTP)**

A New Local North-South Bus Service on the local bus network would be feasible. The option would involve running a new service through the masterplan area and linking Eurocentral to the north and Wishaw hospital to the south, with an interchange opportunity at Shieldmuir station. Additional bus infrastructure would be necessary as the Ravenscraig site develops such as new bus stops designed to SPT standards. Cost is the main factor with this option and developer contributions would be required to make the option feasible. Furthermore, it would be necessary to limit the service to drop-off only out with the Ravenscraig site, with the exception of at Eurocentral, Shieldmuir rail station and Wishaw hospital, due to the competitive nature of the bus network in and around the area. With these restrictions applied then this option becomes highly feasible.

Additionally, for the second half of the option, enhancement of active travel, again there are no issues affecting the feasibility of these enhancements. Key elements of high quality cycling infrastructure already exists within the masterplan site, and so provide a good base for further enhancement of the internal network. This would include providing new links that directly link the site with the local network, providing both cyclists and pedestrians with direct and easy access to and from the surrounding areas. Further construction of these path networks would be required and the responsibility of these within the site would lay primarily with the developer. However, due to the existence of these key paths already within the site and the best design practice that has been applied, it is thought this would continue throughout the further development of the site and as such there are no foreseen issues affecting the feasibility of the option.

### **Option 7 – Ravenscraig Rail Station, enhancement of Active Travel & marketing of Active Travel (PTP)**

A feasibility study would need to be undertaken to gauge the suitability of the site currently identified for a potential rail station in the Ravenscraig masterplan site. Although from a high level there does not seem to be too many issues highlighted with constructing a station on the chosen site, there would be engineering challenges with the location. Track suitability, signalling, OLE would all need to be investigated and possibly upgraded in order to deliver a functioning station on the site.

In addition to any engineering work on the rail line, there would also need to be extensive engineering works to build the station itself. This would involve land contamination studies, construction of the station to deliver platforms long enough to accommodate six carriage train sets, passenger shelters, ticket machines, CCTV and lighting and walkways between platforms. A car park and bus stop facilities may also be a necessary inclusion to the delivery of the station due to the location of the site and its distance from the main hub of the Ravenscraig site.

To deliver a rail line in the appropriate condition for frequent use and a rail station would require significant engineering, all of which would be carried out to standard rail engineering techniques and guidance. As the site lies on an existing rail line, the technical delivery of a station should be achievable subject to the findings of a detailed feasibility investigation.

Although the construction of a rail station may be feasible, the serving of the station may prove to be unfeasible at least in the short and medium term. Initial discussions with both Abellio ScotRail and Network Rail have identified several issues which could impact the feasibility of a potential station at Ravenscraig, many of which have been discussed throughout this report. These issues mainly link to the servicing of the station and the impacts to the wider local rail network and surrounding locations. Due to capacity issues at Glasgow Central station, it would be highly unlikely that a new service could be introduced to the network, thus a rerouting of an existing service would be required to serve Ravenscraig. This would have significant detrimental impacts to the success of the current Lanark service which after receiving significant investment over recent years has seen momentous increases in patronage at stations along the line, in particular at Shieldmuir. Both Abellio ScotRail and Network Rail in addition to other bodies are highly reluctant to sacrifice the improvements and gains on this line to serve Ravenscraig, which would not have significant patronage levels for a very significant period of time. It is, therefore, unlikely that the delivery of a rail station at Ravenscraig will be feasible in the short or medium term and should, therefore, be revisited in the future once there is a greater demand base in the site and with other potential improvements to the rail network and technology possibly opportunities for the introduction of a new service.

Additionally, for the second half of the option, enhancement of active travel, again there are no issues affecting the feasibility of these enhancements. Key elements of high quality cycling infrastructure already exists within the masterplan site, and so provide a good base for further enhancement of the internal network. This would include providing new links that directly link the site with the local network, providing both cyclists and pedestrians with direct and easy access to and from the surrounding areas. Further construction of these path networks would be required and the responsibility of these within the site would lay primarily with the developer. However, due to the existence of these key paths already within the site and the best design practice that has been applied, it is thought this would continue throughout the further development of the site and as such there are no foreseen issues affecting the feasibility of the option.

### 12.3 Affordability

Affordability includes:

- The scale of the financing burden on the promoting authority and other possible funding organisations and the risks associated with these should be considered together with the level of risk associated with an option's ongoing operating or maintenance costs and its likely operating revenues (if applicable).

#### **Option 1 – Integrated Bus Infrastructure in Masterplan, enhancement of Active Travel & marketing of Active Travel (PTP)**

Option 1 would require investment as part of the with the main cost elements being associated with the purchase of bus stop infrastructure such as shelters, lighting and signage and the cost of constructing new bus

stops, including kerbing. There would also be a cost associated with the ongoing maintenance of the bus stops such as cleaning and repairs to damaged or vandalised shelters. The potential bus only link on Merry Street would involve significant costs, but this link will be absorbed in the development costs of the site. These costs would most likely lie with North Lanarkshire Council and SPT once the stops have been adopted into the bus network. This option would be low risk and would be implemented in order to encourage local bus operators to start servicing the Ravenscraig site.

Enhancements to the active travel network including new lighting and additional links, would again involve a low level of investment and are relatively very low risk.

#### **Option 2 – Bus Corridor, enhancement of Active Travel & marketing of Active Travel (PTP)**

As with option 1, this option would involve much of the same costs, except on a greater scale due to the wider network that would be included. This would also involve the same amount of ongoing maintenance, however, the costs would only be additional for new shelters and bus stops. If bus priority systems are introduced to the network this would involve increased investment, not only for the technology itself but also for its ongoing maintenance and operation. These costs would not be restrictive to the implementation of this option.

Enhancements to the active travel network including new lighting and additional links, would again involve a low level of investment and are relatively very low risk.

#### **Option 3 – Circular Service (Rail Bus), enhancement of Active Travel & marketing of Active Travel (PTP)**

In the situation that no existing operator believes it economically viable to operate a commercial bus service in the short term, until the level of demand increases, then a subsidy would be required. It is highly likely that this subsidy would be required for a period of two to three year, by which time, there could be potentially enough development to have established a sufficient level of demand for the service to become commercially viable. There would be no significant additional capital costs if bus infrastructure throughout the Ravenscraig site is delivered as part of the masterplan. However, there would be significant initial revenue subsidy costs. There would be a level of risk associated with this option relating to the establishment of a suitable level of demand. Timing to start subsidising a service is critical as if the funding begins too soon, the costs could increase significantly if the development does not build out at the expected rate. On the other hand, if it is left too late, then residents both new and existing during this time may develop a travel pattern and behaviour that could be difficult to change further downstream when a service does enter the market.

Enhancements to the active travel network including new lighting and additional links, would again involve a relatively low level of investment and are also low risk.

#### **Option 4 – New Local North-South Bus Service, enhancement of Active Travel & marketing of Active Travel (PTP)**

Similar to option 3 if no existing operator believes it economically viable to operate a commercial bus service in the short term, until the level of demand increases, then a subsidy would be required. It is highly likely that this subsidy would be required for a period of two to three year, by which time, there could be potentially enough development to have established a sufficient level of demand for the service to become commercially viable. There would be no significant additional capital costs if bus infrastructure throughout the Ravenscraig site is delivered as part of the masterplan. However, there would be significant initial revenue subsidy costs. There would be a level of risk associated with this option relating to the establishment of a suitable level of demand. Timing to start subsidising a service is critical as if the funding begins too soon, the costs could increase significantly if the development does not build out at the expected rate. On the other hand, if it is left too late, then residents both new and existing during this time may develop a travel pattern and behaviour that could be difficult to change further downstream when a service does enter the market.

Enhancements to the active travel network including new lighting and additional links, would again involve a relatively low level of investment and are also low risk.

#### **Option 7 – Ravenscraig Rail Station, enhancement of Active Travel & marketing of Active Travel (PTP)**

A new rail station in Ravenscraig would involve a significant level of investment. Initial discussions with Abellio ScotRail and Network Rail suggested that Robroyston station should be used as a proxy for estimating costs for a station at Ravenscraig. It is estimated that a new station would cost in the region of £11.5 million without parking facilities and £13.5-14 million for a station including parking. The majority of this cost would fall to the developer of the site, with the potential for some funding from the Scottish Stations Fund. This would be a significant outlay and both Abellio and Network Rail feel that in addition to the station costs, any train service that needs to be rerouted to serve the station would need to be heavily subsidised due to the loss of patronage from current stations at Shieldmuir and Motherwell.

There would, therefore, be significant risk in this option as not only would the capital outlay be significant, ongoing maintenance costs of the station, stopping costs of a service at the station and the subsidising of a service would amount to a considerable capital investment for which there may not be sufficient patronage.

Enhancements to the active travel network including new lighting and additional links, would again involve a low level of investment and are low risk.

## 12.4 Public Acceptability

Public Acceptability includes:

- The likely public response is of importance at this initial appraisal phase and reference to supporting evidence, for example from a consultation exercise must be provided where appropriate.

### **Option 1 – Integrated Bus Infrastructure in Masterplan, enhancement of Active Travel & marketing of Active Travel (PTP)**

During the consultation process undertaken by the developer, it was made apparent that residents felt it was important that a bus service was needed within the site. This option, although not currently made available to the public, would be likely to be well received by the public as it would highlight the developer's commitment to providing the necessary infrastructure and facilities necessary to encourage local operators to enter the site and serve the key locations of housing at the north end, sports centre and the college.

### **Option 2 – Bus Corridor, enhancement of Active Travel & marketing of Active Travel (PTP)**

Option 2 would show the same expected result for option 1 and is likely to gain wider public support due to improvements not only to the network within the masterplan site but also to other sections of the network. This would be likely to receive a positive reception from the public.

### **Option 3 – Circular Service (Rail Bus), enhancement of Active Travel & marketing of Active Travel (PTP)**

This option would be likely to receive a positive reception from the public as it would provide residents and visitors to the site a greater choice of transport options. By providing direct linkages from the site to the local rail network it would be extremely beneficial to residents as it reduces the need for multiple interchanges and reduces the need for car dependency.

### **Option 4 – New Local North-South Bus Service, enhancement of Active Travel & marketing of Active Travel (PTP)**

This option would be likely to receive a positive reception from the public as it would provide residents and visitors to the site a greater choice of transport options. By providing direct linkages from the site to the local rail network it would be extremely beneficial to residents as it reduces the need for multiple interchanges and reduces the need for car dependency. It would also provide the opportunity to connect to key services such as Wishaw hospital and other employment opportunities at Eurocentral.

### **Option 7 – Ravenscraig Rail Station, enhancement of Active Travel & marketing of Active Travel (PTP)**

A rail station at Ravenscraig has been on the agenda for a significant period of time and was seen as an important aspect during the consultation period. It would therefore be likely to receive a very positive reaction from the residents of the site and potentially those who travel to the site for leisure and educational purposes. However, to serve the station it would be necessary to reroute an existing service which is highly likely to receive negative feedback from existing passengers of this service and residents of Shieldmuir and Motherwell. The strong support from current Ravenscraig residents for a rail station could also be borne out of the poor public transport provision currently in the site and other measures may mitigate against a negative backlash if this option was not taken forward.

## 12.5 Summary

In summary, there are no absolute showstoppers for any of the options, however, there are a number of serious issues which impede the ability to implement them.

### Feasibility

Both options 1 and 2 are viewed as feasible, with no factors preventing their implementation. Options 3 and 4 again are feasible options, however, they both would involve a level of subsidy in order to implement any of these options. Option 7 has significant feasibility issues, from an engineering perspective. Unless a detailed feasibility investigation proves otherwise, a new station on the site is potentially feasible, however, providing services to this station is seen to be currently unfeasible.

All active travel enhancements for each option are feasible and are indicated by the second scoring option as they can be implemented without the full option as standard.

Option 1  /     Option 2  /     Option 3  /     Option 4  /     Option 7  /

### Affordability

Both options 1 and 2 are viewed as affordable and involve low levels of investment. Options 3 and 4 would require a more significant level of investment through revenue subsidies until the service becomes economically viable. Option 7 would require a very significant level of capital investment to build a station and then ongoing subsidies to support a service stopping at the station due to the estimated level of patronage and loss of existing high levels of patronage.

All active travel enhancements for each option are viewed as affordable.

Option 1  /     Option 2  /     Option 3 = /     Option 4 = /     Option 7  /

### Public Acceptability

All options would receive a positive response from residents and visitors to the Ravenscraig site. Option 7, however, has the potential to be controversial as the delivery of a station would receive positive feedback from those using or living in Ravenscraig, however, due to the need to reroute an existing service, residents of Shieldmuir, Motherwell and further afield would be likely to find this part of the option unacceptable.

Option 1  /     Option 2  /     Option 3 = /     Option 4 = /     Option 7  /

## 13. Summary and Recommendations

### 13.1 Overview

This report has summarised the findings of the Ravenscraig masterplan Pre-Appraisal and STAG Part 1 initial appraisal to assist in the delivery of the Ravenscraig masterplan. The performance of each of the options against each of the five STAG criteria and the implementability criteria is summarised in the table below.

Option	Environment	Safety	Economy	Integration	Accessibility & Social Inclusion	Feasibility, Affordability & Acceptability
<b>Option 1</b> – Integrated Bus Infrastructure in Masterplan, enhancement of Active Travel and marketing of Active Travel (PTP)	=	üü	ü	ü	ü	ü
<b>Option 2</b> - Bus Corridor, enhancement of Active Travel and marketing of Active Travel (PTP)	=	üü	ü	ü	ü	ü
<b>Option 3</b> – Circular Service (Rail-Bus), enhancement of Active Travel and marketing of Active Travel (PTP)	=	üü	ü	ü	üü	ü
<b>Option 4</b> – New Local North-South Bus Service, enhancement of Active Travel and marketing of Active Travel (PTP)	=	üü	ü	ü	üü	ü
<b>Option 7</b> – Ravenscraig Rail Station, enhancement of Active Travel and marketing of Active Travel (PTP)	=	üüü	ü	ü	üü	ü



As can be seen in the table, all of the bus options make a positive contribution against each of the STAG criteria. Option 7, however, performs poorly against economy due to overall cost, and against integration and accessibility due to the requirement to reroute a rail service having a negative impact on a wider area and

Option	TPO1	TPO2	TPO3	TPO4
<b>Option 1</b> – Integrated Bus Infrastructure in Masterplan, enhancement of Active Travel and marketing of Active Travel (PTP)	ü	ü	ü	ü
<b>Option 2</b> - Bus Corridor, enhancement of Active Travel and marketing of Active Travel (PTP)	ü	ü	ü	ü
<b>Option 3</b> – Circular Service (Rail-Bus), enhancement of Active Travel and marketing of Active Travel (PTP)	ü	üü	ü	üü
<b>Option 4</b> – New Local North-South Bus Service, enhancement of Active Travel and marketing of Active Travel (PTP)	ü	üü	ü	ü
<b>Option 7</b> – Ravenscraig Rail Station, enhancement of Active Travel and marketing of Active Travel (PTP)	ü	üü	ü	ü

reducing local accessibility which is a key element in delivering against TPO1.

The table below revisits the scoring of each of the options against delivering the TPOs established during the pre-appraisal after completion of the STAG Part I initial appraisal.

### 13.2 Option Sifting

The table below summarises the outcomes of the STAG I Initial Appraisal of the four transport options and identifies the options that should be excluded from any further consideration at this current stage.

Option	Retain for further consideration?	Rationale
<b>Option 1</b> – Integrated Bus Infrastructure in Masterplan, enhancement of Active Travel and marketing of Active Travel (PTP)	ü	This option has the potential to assist in delivering against the TPOs as well as deliver against the aim of the Ravenscraig masterplan as a sustainable community. The option is likely to be implementable and makes a positive contribution towards the STAG criteria. It is recommended that this is taken forward within the new masterplan for the site and the supporting Transport Assessment.
<b>Option 2</b> - Bus Corridor, enhancement of Active Travel and marketing of Active Travel (PTP)	ü	This option has the potential to assist in delivering against the TPOs as well as deliver against the aim of the Ravenscraig masterplan as a sustainable community. The option is likely to be implementable and makes a positive contribution towards the STAG criteria. It is recommended that elements of this option are taken forward within the new masterplan for the site and the supporting Transport Assessment but due to its wider benefits that it is considered by North Lanarkshire Council and SPT as part of a wider public transport package



		linked to the current City Deal schemes.
<b>Option 3</b> – Circular Service (Rail-Bus), enhancement of Active Travel and marketing of Active Travel (PTP)	ü	This option has the potential to assist in delivering against the TPOs as well as deliver against the aim of the Ravenscraig masterplan as a sustainable community. The option may prove slightly harder to implement without sufficient revenue funding but is likely to be implementable and makes a positive contribution towards the STAG criteria. This should be considered within the Transport Assessment for the new masterplan and ongoing discussions between the Council, the Developer and SPT on potential financial support.
<b>Option 4</b> – New Local North-South Bus Service, enhancement of Active Travel and marketing of Active Travel (PTP)	ü	This option has the potential to assist in delivering against the TPOs as well as deliver against the aim of the Ravenscraig masterplan as a sustainable community. The option may prove slightly harder to implement without sufficient revenue funding but is likely to be implementable and makes a positive contribution towards the STAG criteria. This should be considered within the Transport Assessment for the new masterplan and ongoing discussions between the Council, the Developer and SPT on potential financial support.
<b>Option 7</b> – Ravenscraig Rail Station, enhancement of Active Travel and marketing of Active Travel (PTP)	û	Has a significant negative impact against one of the TPOs and performs poorly against three of the STAG criteria. It will be difficult at present to develop a positive economic case for this option which faces several difficult barriers to implementation.

### 13.3 Option Recommendations

Based on the analysis undertaken and the conclusions drawn, at this stage it is recommended that Option 7 is sifted out from the process and the masterplan should proceed without the rail station. There are several major barriers to the implementability of the option, including the major negative impacts on the current performance of the Lanark-Glasgow service, local accessibility (Appendix B) and economic case. Because Option 7 could provide some benefits, as set out in the appraisal, the masterplan should not preclude a station and rail service being introduced at a future date, and should put the necessary safeguarding in place. It is recognised however that this would require a significant event or events such as a wholesale revision to rail operations in Lanarkshire and beyond.

As highlighted in the table above, it is recommended that options 1, 2, 3 and 4 should be taken forward for further consideration with option 1 taken forward within the new masterplan for the site and the supporting Transport Assessment with options 3 and 4 to be also considered within the Transport Assessment for the new masterplan and ongoing discussions between the Council, the Developer and SPT on potential financial support. Discussions are already underway with SPT on developing a bus service option for the masterplan site including a bus subsidy study which includes both options 3 and 4. It is recommended that the elements of option 2 within the site (which are common with option 1), are taken forward within the new masterplan for the site and the supporting Transport Assessment but due to its wider benefits that the wider elements are considered by North Lanarkshire Council and SPT as part of a wider public transport package linked to the current City Deal schemes. The Active travel elements, which were common to all options, performed well in the appraisal and should be taken forward as part of option 1 within the new masterplan and the supporting Transport Assessment. These options have been selected due to their relatively low risk, ability to be implemented quickly and flexibly during further development of the site and to provide the optimum outcome for making best use of the existing rail and bus network.

## Appendix A. Appraisal Summary Tables

**Part 1 Appraisal Summary Tables**

<b>Proposal Details</b>			
Name and address of authority or organisation promoting the proposal:  (Also provide name of any subsidiary organisations also involved in promoting the proposal)		TBC	
Proposal Name:	Option 1 – Integrated Busway in Masterplan, enhancement of Active Travel and marketing of Active Travel (PTP).	Name of Planner:	Steven Reid, Jacobs UK Ltd
Proposal Description:	This option would involve incorporating bus priority measures within the internal Ravenscraig masterplan site, including enhancement of bus infrastructure. Bus priority measures would include bus only turns, and a new bus and active travel link to Merry Street in the future. Active travel enhancement would include building on the existing cycling infrastructure within the masterplan area, such as additional cycle routes, direct linkages into the main areas and surrounding towns and cycle storage.	Estimated Total Public Sector Funding Requirement:	Capital costs/grant: TBC
			<i>Current revenue support TBC</i>
			<i>Annual revenue support</i>  <i>TBC</i>
Funding Sought From: (if applicable)		Amount of Application:	<i>Present Value of Cost to Govt. TBC</i>
<b>Background Information</b>			

<p>Geographic Context:</p>	<p>The former Ravenscraig Steelworks closed in 1992 and is now one of the largest brownfield redevelopment opportunities in Europe, measuring over 450 hectares. Development on the site began in 2006; however, there have been subsequent revisions to the Ravenscraig Masterplan following the original version. Certain aspects of the previous masterplan such as the level of residential and employment mix are now seen as undeliverable and instead the masterplan is now targeted at delivering realistic opportunities while implementing best practice in placemaking and sustainability.</p> <p>The Ravenscraig Masterplan site itself is situated within the North Lanarkshire local authority boundary and is located between the towns of Motherwell and Wishaw. The total site area is 466.1 hectares and currently contains a mix of housing, the Sports City leisure complex and the largest of six campuses of the New College Lanarkshire.</p> <p>The site is in close proximity to the M74, which is approximately 5km to the southwest, and the M8, which is approximately 5km to the north. The site is currently accessed from the north via a roundabout which connects New Craig Road to the A723, leading to the M8 in the north and Motherwell to the west, and the B7029, leading to Newhouse and Cleland.</p> <p>From the south, the site is accessed via a roundabout connecting Robberhall Road with the A721, leading to Motherwell in the west and Wishaw in the east.</p> <p>The site is also bounded by two rail lines, the West Coast Mainline to the south and west, and the Wishaw Deviation line to the east and south.</p>
<p>Social Context:</p>	<p>The Ravenscraig Masterplan area is currently undergoing development, with further development, subject to planning permission, phased over a build-out period from 2018 to 2045. Currently on site there are approximately 500 houses, with a further 3,500 expected over the build-out period. At the time of the census in 2011, there was less housing on-site, thus some of the data analysis currently only reflects upon this sample size. The following points were, however, extracted from this data analysis:</p> <ul style="list-style-type: none"> <li>• The Ravenscraig site has witnessed a growth in population of <b>56%</b> from 2011 to 2015, far exceeding local, regional and national growth rates. This is directly linked to the increased development over this same time period;</li> <li>• Ravenscraig has a relatively young age structure with <b>72%</b> of the population within the working age category. This demonstrates a strong trend in in-migration to the area and confidence behind the area as being a particularly attractive location in which to reside;</li> </ul>

	<ul style="list-style-type: none"> <li>• The population of Ravenscraig has a higher academic attainment level than both the regional and national levels, with <b>85%</b> of the population having gained a level 1 qualification or above, compared to 67% for North Lanarkshire and 73% for Scotland;</li> <li>• The fact that no parts of the Ravenscraig area are within the 20% most deprived in Scotland and the relatively high house prices, indicates strong economic health within the area. This is further evidenced by the high car availability levels, with over <b>30%</b> of households within the Ravenscraig Masterplan site having access to 3 or more cars, which is <b>7 times</b> the local, regional and national rates</li> </ul> <p>From analysis of the demographic data it can be seen that the Ravenscraig development area is a particularly attractive location to reside. The increase in population, particularly in the working age category, since 2011 demonstrates a strong trend in in-migration to the area. The fact there are no zones within the 20% most deprived and the relatively high house prices indicate strong economic health within the area. These current trends and profiles can be linked to the current housing mix on the site, however, with a broader mix of housing types planned for the future development of the masterplan, these trends could potentially change, introducing an increased demand for public transport.</p>
Economic Context:	<p>As expected from the trends witnessed from the analysis of the social context data, Ravenscraig also demonstrates a healthy economic context:</p> <ul style="list-style-type: none"> <li>• Analysis of economic datasets identified that the majority of the Ravenscraig residents were young working professionals, with the economic activity rate (77.4%) almost <b>10%</b> higher than the regional and national levels;</li> <li>• Ravenscraig has a higher proportion of people employed in higher skilled industries, which is reflected in the weekly household income data analysis with Ravenscraig residents earning <b>45%</b> more than the regional and <b>44%</b> more than the national rates;</li> <li>• Residents of Ravenscraig claim the lowest level of Job Seekers Allowance at 1.2%, <b>2%</b> lower the Local Authority and <b>1.2%</b> lower than the national levels.</li> </ul> <p>From analysis of the economic data it would appear that the Ravenscraig development area has a high proportion of young working professionals. With a higher economic activity rate and lower claimant rate than all other areas, it could potentially indicate that Ravenscraig residents may travel further for work, either in or out with North Lanarkshire. This is further evidenced by the greater number of people in the Ravenscraig area who are employed in higher skilled industries.</p> <p>The future masterplan has identified several areas of land for employment opportunities. This will provide both current and future residents with employment opportunities close to home. It was also provide other residents within North</p>

	Lanarkshire job opportunities and could, therefore, have a positive impact on the local and regional economy.
<b>Planning Objectives</b>	
Objective:	Performance against planning objective:
<b>TPO1:</b> <i>Improve public transport connectivity between Ravenscraig and other areas within North Lanarkshire, in particular to improve north-south connectivity and reduce average journey times between these locations to 30 – 45 minutes.</i>	<b>Performance against Transport Planning Objective: Minor Benefit</b> This option would assist in providing reliable journey times to public transport users within the Ravenscraig site, with the infrastructure in place to encourage local bus services to operate within the Ravenscraig site, enabling connectivity between the site and other key locations in the local area. This option would also facilitate the opportunity to interchange to other services providing north-south access at Motherwell.
<b>TPO2:</b> <i>To increase mode share of public transport for journeys to work and leisure activities over the masterplan build out period from 7% to 14% (based on minimum PT mode share from the comparator settlements).</i>	<b>Performance against Transport Planning Objective: Minor Benefit</b> This option would assist in providing reliable journey times to public transport users and in particular, encourage bus services to operate within and through the Ravenscraig site, enabling connectivity between the site and other locations in the local area. This option would also facilitate the opportunity to interchange to other services.
<b>TPO3:</b> <i>To increase travel by active modes over the masterplan build out period, including walking and cycling from 2% to 7% (based on the North Lanarkshire average walking and cycling numbers).</i>	<b>Performance against Transport Planning Objective: Minor Benefit</b> The active travel measure to support the core option would improve cycling and walking infrastructure in the local area, in addition to increasing cycle storage at rail and bus interchanges. Providing direct linkages would encourage increased use of these facilities. The new link road to Merry Street would bring a further positive impact on this option as it will enable direct linkages towards Motherwell town centre.
<b>TPO4:</b> <i>To connect Ravenscraig with a reliable strategic public transport network to provide access to destinations of work and leisure including Glasgow and Edinburgh to help support current travel patterns and reduce overall commuting times.</i>	<b>Performance against Transport Planning Objective: Minor Benefit</b> This option would assist in providing reliable journey times to public transport users and in particular encourage bus services to operate within the Ravenscraig site, enabling connectivity between the site and other locations in the local area. This option would also facilitate the opportunity to interchange to other services, such as at Motherwell station to provide ongoing travel options to both Glasgow and Edinburgh for employment or leisure opportunities.

Rationale for Selection or Rejection of Proposal:	This option has the potential to assist in delivering against the TPOs as well as deliver against the aim of the establishing the Ravenscraig masterplan area as a sustainable community. The option is likely to be implementable and makes a positive contribution towards the five STAG criteria. It is recommended that this is taken forward within the new masterplan for the site and the supporting Transport Assessment.	
<b>Implementability Appraisal</b>		
Technical:	There are no known issues that make this option not feasible. The option itself would involve the further development of the public transport network within the Ravenscraig masterplan site, including bus priority measures, infrastructure such as bus shelters, signing, lighting and appropriate kerbing. Each of the existing and additional bus stop locations would need to be upgraded to meet these standards and this would be carried out in line with SPT guidance on bus stop design.	
Operational:	Once the infrastructure is in place, there would be a requirement for ongoing maintenance of the bus stops such as cleaning and repairs to damaged or vandalised shelters.	
Financial:	<p>Option 1 would require a low level of investment with the main cost elements being associated with the purchase of bus stop infrastructure such as shelters, lighting and signage and the cost of constructing new bus stops, including kerbing. There would also be a cost associated with the ongoing maintenance of the bus stops such as cleaning and repairs to damaged or vandalised shelters. These costs would most likely lie with North Lanarkshire Council and SPT once the stops have been adopted into the bus network. This option would be low risk and would be implemented in order to encourage local bus operators to start servicing the Ravenscraig site. The potential bus only link to Merry Street would involve significant costs, but this will be absorbed in the development costs of the site.</p> <p>Enhancements to the active travel network including new lighting and additional links, would again involve a low level of investment and are relatively very low risk.</p>	
Public:	During the consultation process undertaken by the developer, it was made apparent that residents felt it was important that a bus service was needed within the site. This option, although not currently made available to the public, would be likely to be well received by the public as it would highlight the developer's commitment to providing the necessary infrastructure and facilities necessary to encourage local operators to enter the site and serve the key locations of housing at the north end, sports centre and the college.	
<b>STAG Criteria</b>		
<b>Criterion</b>	<b>Assessment Summary</b>	<b>Supporting Information</b>
Environment:	=	The following impacts of option 1 have been identified in terms of environmental sub-criteria:



		<ul style="list-style-type: none"> <li>• <b>Noise &amp; vibration:</b> Currently there are no bus movements through the site. If this option was implemented and attracts bus services to operate through the site, then there could be a potential for minor noise impact for existing residents.</li> <li>• <b>Local air quality:</b> Access to more sustainable modes of transport and enhanced active travel links could lead to a shift in mode share towards sustainable transport modes, thus taking more cars off the road. Potential to have a minor benefit to local air quality.</li> <li>• <b>Water quality, drainage &amp; flood defence:</b> No impact on any watercourses or likely to be affected by any watercourses.</li> <li>• <b>Geological features:</b> No impact on geology.</li> <li>• <b>Biodiversity &amp; habitats:</b> No impact on biodiversity and habitats.</li> <li>• <b>Landscape:</b> No impact on landscape.</li> <li>• <b>Visual amenity:</b> No impact on visual amenity.</li> <li>• <b>Agriculture and Soils:</b> No impact on agriculture and soils.</li> <li>• <b>Cultural heritage:</b> No impact on cultural heritage.</li> </ul>
Safety:	✓✓	<p>Travelling by public transport tends to be an inherently safer mode of transport, therefore, passengers on public transport experience a lower level of risk. This option could potentially see a reduction in accidents due to a mode shift away from car. Additionally, improving bus infrastructure would improve the feeling of security for many bus passengers, with appropriate shelters and lighting in place.</p> <p>Active travel users will also receive a minor benefit through the introduction of enhanced provision of cycling infrastructure, reducing the risk of interactions with cars.</p>
Economy:	✓	<p><b>Transport Economic Efficiency (TEE):</b> Option 1 could provide several economic efficiency benefits for the local area. Bus users from/to the site, could potentially receive both journey time savings and journey time reliability as a result of this option. Journey quality for bus users could also increase through improved infrastructure such as shelters and bus timetable information. There is also the potential for bus farebox increases due to increased patronage levels on local services as a result of the option. For bus operators, there could be an increase in vehicle operating costs as a result of increased vehicle kilometres and an increase in operating and maintenance costs, such as bus vehicle operation costs and maintenance costs associated with maintaining the bus shelters.</p> <p><b>EALI / Wider Benefits:</b> this option could have a positive impact on EALIs by providing the opportunity for further transport integration within the site for both residents and visitors to the site. With the improved infrastructure in place, there is a potential that this could attract local services to operate in the site, providing links between the local area and the site. This could make the site more accessible to the local area and encourage travel to the site for employment and leisure opportunities as well as</p>

		travel to the college for educational purposes.
Integration:	✓	This option has the potential to bring a minor positive benefit to the integration criteria. The option has the potential to encourage local bus services to operate within the Ravenscraig site, integrating the site into the local transport network and integrating land-use with transport infrastructure. Additionally, the option would also perform well against the Government's five high level and secondary criteria, by improving integration and social inclusion.
Accessibility and Social Inclusion:	✓	Option 1 has the potential to improve both current accessibility of the site and improve social inclusion through integrating local bus services into the site, providing key links to the local surrounding areas. Buses operating through the site provides the ability to link into other bus services or rail services to access key employment, leisure and health opportunities. This enables Ravenscraig residents to become a part of the local network and provides them with direct links to key towns such as Motherwell and Wishaw.

**Part 1 Appraisal Summary Tables**

<b>Proposal Details</b>			
Name and address of authority or organisation promoting the proposal:  (Also provide name of any subsidiary organisations also involved in promoting the proposal)		TBC	
Proposal Name:	Option2 - Bus Corridor and enhancement of Active Travel and marketing of Active Travel (PTP).	Name of Planner:	Steven Reid, Jacobs UK Ltd
Proposal Description:	Option 2 would build on option 1 above and include defining a bus priority measures corridor along the spine road within the Ravenscraig site, along the A721 into Motherwell and then towards the M74. This option would include enhancing the bus infrastructure along the corridor including shelters and signage and to provide bus priority measures to increase public transport patronage and reduce congestion, especially during peak hours. Active travel enhancement would include building on the existing cycling infrastructure within the masterplan area, such as additional cycle routes, direct linkages into the main areas and surrounding towns and cycle storage.	Estimated Total Public Sector Funding Requirement:	Capital costs/grant: TBC
			<i>Current revenue support</i> TBC
			<i>Annual revenue support</i>  TBC
Funding Sought From: (if applicable)		Amount of Application:	<i>Present Value of Cost to Govt.</i> TBC
<b>Background Information</b>			

<p>Geographic Context:</p>	<p>The former Ravenscraig Steelworks closed in 1992 and is now one of the largest brownfield redevelopment opportunities in Europe, measuring over 450 hectares. Development on the site began in 2006; however, there have been subsequent revisions to the Ravenscraig Masterplan following the original version. Certain aspects of the previous masterplan such as the level of residential and employment mix are now seen as undeliverable and instead the masterplan is now targeted at delivering realistic opportunities while implementing best practice in placemaking and sustainability.</p> <p>The Ravenscraig Masterplan site itself is situated within the North Lanarkshire local authority boundary and is located between the towns of Motherwell and Wishaw. The total site area is 466.1 hectares and currently contains a mix of housing, the Sports City leisure complex and the largest of six campuses of the New College Lanarkshire.</p> <p>The site is in close proximity to the M74, which is approximately 5km to the southwest, and the M8, which is approximately 5km to the north. The site is currently accessed from the north via a roundabout which connects New Craig Road to the A723, leading to the M8 in the north and Motherwell to the west, and the B7029, leading to Newhouse and Cleland.</p> <p>From the south, the site is accessed via a roundabout connecting Robberhall Road with the A721, leading to Motherwell in the west and Wishaw in the east.</p> <p>The site is also bounded by two rail lines, the West Coast Mainline to the south and west, and the Wishaw Deviation line to the east and south.</p>
<p>Social Context:</p>	<p>The Ravenscraig Masterplan area is currently undergoing development, with further development, subject to planning permission, phased over a build-out period from 2018 to 2045. Currently on site there are approximately 500 houses, with a further 3,500 expected over the build-out period. At the time of the census in 2011, there was less housing on-site, thus some of the data analysis currently only reflects upon this sample size. The following points were, however, extracted from this data analysis:</p> <ul style="list-style-type: none"> <li>• The Ravenscraig site has witnessed a growth in population of <b>56%</b> from 2011 to 2015, far exceeding local, regional and national growth rates. This is directly linked to the increased development over this same time period;</li> <li>• Ravenscraig has a relatively young age structure with <b>72%</b> of the population within the working age category. This demonstrates a strong trend in in-migration to the area and confidence behind the area as being a particularly attractive location in which to reside;</li> </ul>

	<ul style="list-style-type: none"> <li>• The population of Ravenscraig has a higher academic attainment level than both the regional and national levels, with <b>85%</b> of the population having gained a level 1 qualification or above, compared to 67% for North Lanarkshire and 73% for Scotland;</li> <li>• The fact that no parts of the Ravenscraig area are within the 20% most deprived in Scotland and the relatively high house prices, indicates strong economic health within the area. This is further evidenced by the high car availability levels, with over <b>30%</b> of households within the Ravenscraig Masterplan site having access to 3 or more cars, which is <b>7 times</b> the local, regional and national rates</li> </ul> <p>From analysis of the demographic data it can be seen that the Ravenscraig development area is a particularly attractive location to reside. The increase in population, particularly in the working age category, since 2011 demonstrates a strong trend in in-migration to the area. The fact there are no zones within the 20% most deprived and the relatively high house prices indicate strong economic health within the area. These current trends and profiles can be linked to the current housing mix on the site, however, with a broader mix of housing types planned for the future development of the masterplan, these trends could potentially change, introducing an increased demand for public transport.</p>
Economic Context:	<p>As expected from the trends witnessed from the analysis of the social context data, Ravenscraig also demonstrates a healthy economic context:</p> <ul style="list-style-type: none"> <li>• Analysis of economic datasets identified that the majority of the Ravenscraig residents were young working professionals, with the economic activity rate (77.4%) almost <b>10%</b> higher than the regional and national levels;</li> <li>• Ravenscraig has a higher proportion of people employed in higher skilled industries, which is reflected in the weekly household income data analysis with Ravenscraig residents earning <b>45%</b> more than the regional and <b>44%</b> more than the national rates;</li> <li>• Residents of Ravenscraig claim the lowest level of Job Seekers Allowance at 1.2%, <b>2%</b> lower the Local Authority and <b>1.2%</b> lower than the national levels.</li> </ul> <p>From analysis of the economic data it would appear that the Ravenscraig development area has a high proportion of young working professionals. With a higher economic activity rate and lower claimant rate than all other areas, it could potentially indicate that Ravenscraig residents may travel further for work, either in or out with North Lanarkshire. This is further evidenced by the greater number of people in the Ravenscraig area who are employed in higher skilled industries.</p> <p>The future masterplan has identified several areas of land for employment opportunities. This will provide both current and future residents with employment opportunities close to home. It was also provide other residents within North</p>

	Lanarkshire job opportunities and could, therefore, have a positive impact on the local and regional economy.
<b>Planning Objectives</b>	
Objective:	Performance against planning objective:
<b>TPO1:</b> <i>Improve public transport connectivity between Ravenscraig and other areas within North Lanarkshire, in particular to improve north-south connectivity and reduce average journey times between these locations to 30 – 45 minutes.</i>	<b>Performance against Transport Planning Objective: Minor Benefit</b> This option would assist in providing reliable journey times to public transport users within the Ravenscraig site, with the infrastructure in place to encourage local bus services to operate within the Ravenscraig site, enabling connectivity between the site and other key locations in the local area. This option would also facilitate the opportunity to interchange to other services providing north-south access at Motherwell.
<b>TPO2:</b> <i>To increase mode share of public transport for journeys to work and leisure activities over the masterplan build out period from 7% to 14% (based on minimum PT mode share from the comparator settlements).</i>	<b>Performance against Transport Planning Objective: Minor Benefit</b> This option would assist in providing reliable journey times to public transport users and in particular, encourage bus services to operate within and through the Ravenscraig site, enabling connectivity between the site and other locations in the local area. This option would also facilitate the opportunity to interchange to other services.
<b>TPO3:</b> <i>To increase travel by active modes over the masterplan build out period, including walking and cycling from 2% to 7% (based on the North Lanarkshire average walking and cycling numbers).</i>	<b>Performance against Transport Planning Objective: Minor Benefit</b> The active travel measure to support the core option would improve cycling and walking infrastructure in the local area, in addition to increasing cycle storage at rail and bus interchanges. Providing direct linkages would encourage increased use of these facilities. The new link road to Merry Street would bring a further positive impact on this option as it will enable direct linkages towards Motherwell town centre.
<b>TPO4:</b> <i>To connect Ravenscraig with a reliable strategic public transport network to provide access to destinations of work and leisure including Glasgow and Edinburgh to help support current travel patterns and reduce overall commuting times.</i>	<b>Performance against Transport Planning Objective: Minor Benefit</b> This option would assist in providing reliable journey times to public transport users and in particular encourage bus services to operate within the Ravenscraig site, enabling connectivity between the site and other locations in the local area. This option would also facilitate the opportunity to interchange to other services, such as at Motherwell station to provide ongoing travel options to both Glasgow and Edinburgh for employment or leisure opportunities.

Rationale for Selection or Rejection of Proposal:	This option has the potential to assist in delivering against the TPOs as well as deliver against the aim of the Ravenscraig masterplan as a sustainable community. The option is likely to be implementable and makes a positive contribution towards the STAG criteria. It is recommended that elements of this option are taken forward within the new masterplan for the site and the supporting Transport Assessment but due to its wider benefits that it is considered by North Lanarkshire Council and SPT as part of a wider public transport package linked to the current City Deal schemes.
<b>Implementability Appraisal</b>	
Technical:	This option is similar in nature to the above, however, takes into account a much wider section of network. As with option 1 there are no current issues that make this option not feasible. A study along the corridor would be required to identify those sections that need improvements to the bus infrastructure such as shelters and kerbing. However, this option would involve introducing bus priority measures on the road network to enable reliable transit for buses without the detrimental effects of traffic congestion to timetable run times. As such systems such as BIAS would be looked at to be introduced where possible to the network to enable buses to have priority. The introduction of such systems would involve identifying where possible it is feasible to add the system in. Again, all measures would be carried out in line with SPT guidance to ensure the best practices are implemented.
Operational:	Once the bus stop infrastructure is in place, there would be a requirement for ongoing maintenance of the bus stops such as cleaning and repairs to damaged or vandalised shelters. Additionally, if there is a need to introduce systems such as BIAS, then there would need to be backroom capabilities which would require ongoing operation and maintenance of the systems.
Financial:	<p>As with option 1, this option would involve much of the same costs, except on a greater scale due to the wider network that would be included. This would also involve the same amount of ongoing maintenance, however, the costs would only be additional for new shelters and bus stops. If bus priority systems are introduced to the network this would involve increased investment, not only for the technology itself but also for its ongoing maintenance and operation. These costs would not be restrictive to the implementation of this option. The potential bus only link to Merry Street would involve significant costs, but this will be absorbed in the development costs of the site.</p> <p>Enhancements to the active travel network including new lighting and additional links, would again involve a low level of investment and are relatively very low risk.</p>
Public:	During the consultation process undertaken by the developer, it was made apparent that residents felt it was important that a bus service was needed within the site. This option, although not currently made available to the public, would be likely to be well received by the public as it would highlight the developer's commitment to providing the necessary infrastructure and facilities necessary to encourage local operators to enter the site and



serve the key locations of housing at the north end, sports centre and the college. As it would also provide further benefits to the local bus network, it would also gather public support from the wider local area.

STAG Criteria		
Criterion	Assessment Summary	Supporting Information
Environment:	=	<p>The following impacts of option 2 have been identified in terms of environmental sub-criteria:</p> <ul style="list-style-type: none"> <li>• <b>Noise &amp; vibration:</b> Currently there are no bus movements through the site. If this option was implemented and attracts bus services to operate through the site, then there could be a potential for minor noise impact for existing residents.</li> <li>• <b>Local air quality:</b> Access to more sustainable modes of transport and enhanced active travel links could lead to a shift in mode share towards sustainable transport modes, thus taking more cars off the road. Potential to have a minor benefit to local air quality.</li> <li>• <b>Water quality, drainage &amp; flood defence:</b> No impact on any watercourses or likely to be affected by any watercourses.</li> <li>• <b>Geological features:</b> No impact on geology.</li> <li>• <b>Biodiversity &amp; habitats:</b> No impact on biodiversity and habitats.</li> <li>• <b>Landscape:</b> No impact on landscape.</li> <li>• <b>Visual amenity:</b> No impact on visual amenity.</li> <li>• <b>Agriculture and Soils:</b> No impact on agriculture and soils.</li> <li>• <b>Cultural heritage:</b> No impact on cultural heritage.</li> </ul>
Safety:	✓✓	<p>Travelling by public transport tends to be an inherently safer mode of transport, therefore, passengers on public transport experience a lower level of risk. This option could potentially see a reduction in accidents due to a mode shift away from car. Additionally, improving bus infrastructure would improve the feeling of security for many bus passengers, with appropriate shelters and lighting in place.</p> <p>Active travel users will also receive a minor benefit through the introduction of enhanced provision of cycling infrastructure, reducing the risk of interactions with cars.</p>
Economy:	✓	<p><b>Transport Economic Efficiency (TEE):</b> Option 2 could provide several economic efficiency benefits for the local area. Bus users from/to the site, could potentially receive both journey time savings and journey time reliability as a result of this option. Journey quality for bus users could also increase through improved infrastructure such as shelters and bus timetable information. There is also the potential for bus farebox increases due to increased patronage levels on local services as a result of the option. For bus operators, there could be an increase in vehicle operating costs as a result of</p>

		<p>increased vehicle kilometres and an increase in operating and maintenance costs, such as bus vehicle operation costs and maintenance costs associated with maintaining the bus shelters.</p> <p><b>EALI / Wider Benefits:</b> this option could have a positive impact on EALIs by providing the opportunity for further transport integration within the site for both residents and visitors to the site. With the improved infrastructure in place, there is a potential that this could attract local services to operate in the site, providing links between the local area and the site. This could make the site more accessible to the local area and encourage travel to the site for employment and leisure opportunities as well as travel to the college for educational purposes.</p>
Integration:	✓	<p>This option has the potential to bring a minor positive benefit to the integration criteria. The option has the potential to encourage local bus services to operate within the Ravenscraig site, integrating the site into the local transport network and integrating land-use with transport infrastructure. Additionally, the option would also perform well against the Government's five high level and secondary criteria, by improving integration and social inclusion.</p>
Accessibility and Social Inclusion:	✓	<p>Option 2 has the potential to improve both current accessibility of the site and improve social inclusion through integrating local bus services into the site, providing key links to the local surrounding areas. Buses operating through the site provides the ability to link into other bus services or rail services to access key employment, leisure and health opportunities. This enables Ravenscraig residents to become a part of the local network and provides them with direct links to key towns such as Motherwell and Wishaw.</p>

## Part 1 Appraisal Summary Tables

Proposal Details			
Name and address of authority or organisation promoting the proposal:  (Also provide name of any subsidiary organisations also involved in promoting the proposal)		TBC	
Proposal Name:	Option 3 – Circular Service (Rail Bus) and enhancement of Active Travel and marketing of Active Travel (PTP).	Name of Planner:	Steven Reid, Jacobs UK Ltd
Proposal Description:	This option would require the introduction of either a new bus service completing a circular route linking the Ravenscraig Masterplan area with the local rail stations of Carfin, Shieldmuir and Motherwell or extending current local services into the Ravenscraig masterplan area. Active travel enhancement would include building on the existing cycling infrastructure within the masterplan area, such as additional cycle routes, direct linkages into the main areas and surrounding towns and cycle storage.	Estimated Total Public Sector Funding Requirement:	Capital costs/grant: TBC
			<i>Current revenue support</i> TBC
			<i>Annual revenue support</i>  TBC
Funding Sought From: (if applicable)		Amount of Application:	<i>Present Value of Cost to Govt.</i>  TBC
Background Information			

<p>Geographic Context:</p>	<p>The former Ravenscraig Steelworks closed in 1992 and is now one of the largest brownfield redevelopment opportunities in Europe, measuring over 450 hectares. Development on the site began in 2006; however, there have been subsequent revisions to the Ravenscraig Masterplan following the original version. Certain aspects of the previous masterplan such as the level of residential and employment mix are now seen as undeliverable and instead the masterplan is now targeted at delivering realistic opportunities while implementing best practice in placemaking and sustainability.</p> <p>The Ravenscraig Masterplan site itself is situated within the North Lanarkshire local authority boundary and is located between the towns of Motherwell and Wishaw. The total site area is 466.1 hectares and currently contains a mix of housing, the Sports City leisure complex and the largest of six campuses of the New College Lanarkshire.</p> <p>The site is in close proximity to the M74, which is approximately 5km to the southwest, and the M8, which is approximately 5km to the north. The site is currently accessed from the north via a roundabout which connects New Craig Road to the A723, leading to the M8 in the north and Motherwell to the west, and the B7029, leading to Newhouse and Cleland.</p> <p>From the south, the site is accessed via a roundabout connecting Robberhall Road with the A721, leading to Motherwell in the west and Wishaw in the east.</p> <p>The site is also bounded by two rail lines, the West Coast Mainline to the south and west, and the Wishaw Deviation line to the east and south.</p>
<p>Social Context:</p>	<p>The Ravenscraig Masterplan area is currently undergoing development, with further development, subject to planning permission, phased over a build-out period from 2018 to 2045. Currently on site there are approximately 500 houses, with a further 3,500 expected over the build-out period. At the time of the census in 2011, there was less housing on-site, thus some of the data analysis currently only reflects upon this sample size. The following points were, however, extracted from this data analysis:</p> <ul style="list-style-type: none"> <li>• The Ravenscraig site has witnessed a growth in population of <b>56%</b> from 2011 to 2015, far exceeding local, regional and national growth rates. This is directly linked to the increased development over this same time period;</li> <li>• Ravenscraig has a relatively young age structure with <b>72%</b> of the population within the working age category. This demonstrates a strong trend in in-migration to the area and confidence behind the area as being a particularly attractive location in which to reside;</li> </ul>

	<ul style="list-style-type: none"> <li>• The population of Ravenscraig has a higher academic attainment level than both the regional and national levels, with <b>85%</b> of the population having gained a level 1 qualification or above, compared to 67% for North Lanarkshire and 73% for Scotland;</li> <li>• The fact that no parts of the Ravenscraig area are within the 20% most deprived in Scotland and the relatively high house prices, indicates strong economic health within the area. This is further evidenced by the high car availability levels, with over <b>30%</b> of households within the Ravenscraig Masterplan site having access to 3 or more cars, which is <b>7 times</b> the local, regional and national rates</li> </ul> <p>From analysis of the demographic data it can be seen that the Ravenscraig development area is a particularly attractive location to reside. The increase in population, particularly in the working age category, since 2011 demonstrates a strong trend in in-migration to the area. The fact there are no zones within the 20% most deprived and the relatively high house prices indicate strong economic health within the area. These current trends and profiles can be linked to the current housing mix on the site, however, with a broader mix of housing types planned for the future development of the masterplan, these trends could potentially change, introducing an increased demand for public transport.</p>
Economic Context:	<p>As expected from the trends witnessed from the analysis of the social context data, Ravenscraig also demonstrates a healthy economic context:</p> <ul style="list-style-type: none"> <li>• Analysis of economic datasets identified that the majority of the Ravenscraig residents were young working professionals, with the economic activity rate (77.4%) almost <b>10%</b> higher than the regional and national levels;</li> <li>• Ravenscraig has a higher proportion of people employed in higher skilled industries, which is reflected in the weekly household income data analysis with Ravenscraig residents earning <b>45%</b> more than the regional and <b>44%</b> more than the national rates;</li> <li>• Residents of Ravenscraig claim the lowest level of Job Seekers Allowance at 1.2%, <b>2%</b> lower the Local Authority and <b>1.2%</b> lower than the national levels.</li> </ul> <p>From analysis of the economic data it would appear that the Ravenscraig development area has a high proportion of young working professionals. With a higher economic activity rate and lower claimant rate than all other areas, it could potentially indicate that Ravenscraig residents may travel further for work, either in or out with North Lanarkshire. This is further evidenced by the greater number of people in the Ravenscraig area who are employed in higher skilled industries.</p> <p>The future masterplan has identified several areas of land for employment opportunities. This will provide both current and future residents with employment opportunities close to home. It was also provide other residents within North</p>

	Lanarkshire job opportunities and could, therefore, have a positive impact on the local and regional economy.
<b>Planning Objectives</b>	
Objective:	Performance against planning objective:
<b>TPO1:</b> <i>Improve public transport connectivity between Ravenscraig and other areas within North Lanarkshire, in particular to improve north-south connectivity and reduce average journey times between these locations to 30 – 45 minutes.</i>	<b>Performance against Transport Planning Objective: Minor Benefit</b> This option would assist in providing reliable journey times to public transport users within the Ravenscraig site, providing access to a regular bus service linking into the local rail stations. In particular, this option would help facilitate the north-south travel by providing residents and visitors to the site access to Motherwell station to access rail services north to Coatbridge and Cumbernauld.
<b>TPO2:</b> <i>To increase mode share of public transport for journeys to work and leisure activities over the masterplan build out period from 7% to 14% (based on minimum PT mode share from the comparator settlements).</i>	<b>Performance against Transport Planning Objective: Moderate Benefit</b> This option would enable Ravenscraig residents to access key local rail stations for onward travel throughout the local area and further afield. In particular linking into Motherwell rail station provides both residents and visitors to the site with services not only to the local area but to stations towards both Glasgow and Edinburgh and even cross border journeys.
<b>TPO3:</b> <i>To increase travel by active modes over the masterplan build out period, including walking and cycling from 2% to 7% (based on the North Lanarkshire average walking and cycling numbers).</i>	<b>Performance against Transport Planning Objective: Minor Benefit</b> The active travel measure to support the core option would improve cycling and walking infrastructure in the local area, in addition to increasing cycle storage at rail and bus interchanges. Providing direct linkages would encourage increased use of these facilities. The new link road to Merry Street would bring a further positive impact on this option as it will enable direct linkages towards Motherwell town centre.
<b>TPO4:</b> <i>To connect Ravenscraig with a reliable strategic public transport network to provide access to destinations of work and leisure including Glasgow and Edinburgh to help support current travel patterns and reduce overall commuting times.</i>	<b>Performance against Transport Planning Objective: Moderate Benefit</b> This option would enable Ravenscraig residents to access key local rail stations for onward travel throughout the local area and further afield. Improved connections to Motherwell station would allow residents to interchange onto services towards Edinburgh and south across border in addition to Glasgow.

Rationale for Selection or Rejection of Proposal:	This option has the potential to assist in delivering against the TPOs as well as deliver against the aim of establishing the Ravenscraig masterplan as a sustainable community. The option may prove slightly harder to implement without sufficient funding but is likely to be implementable and makes a positive contribution towards the STAG criteria. This should be considered within the Transport Assessment for the new masterplan and ongoing discussions between the Council, the Developer and SPT on potential financial support.
<b>Implementability Appraisal</b>	
Technical:	<p>The introduction of a circular rail-bus onto the local bus network would be very feasible. The option would involve running a new service through the masterplan area and linking into a few of the existing rail stations, to open up opportunities of travel to and from the Ravenscraig masterplan area. Additional bus infrastructure would be necessary as the Ravenscraig site develops such as new bus stops designed to SPT standards.</p> <p>Additionally, for the second half of the option, enhancement of active travel, again there are no issues affecting the feasibility of these enhancements. Key elements of high quality cycling infrastructure already exists within the masterplan site, and so provide a good base for further enhancement of the internal network. This would include providing new links that directly link the site with the local network, providing both cyclists and pedestrians with direct and easy access to and from the surrounding areas. Further construction of these path networks would be required and the responsibility of these within the site would lay primarily with the developer. However, due to the existence of these key paths already within the site and the best design practice that has been applied, it is thought this would continue throughout the further development of the site and as such there are no foreseen issues affecting the feasibility of the option.</p>
Operational:	Once the bus stop infrastructure is in place, there would be a requirement for ongoing maintenance of the bus stops such as cleaning and repairs to damaged or vandalised shelters. It would be prudent to believe that initially this bus service would need to be subsidised and, therefore, the operation of the service would be carried out by the successful applicant to SPT. The overall operation of the option is likely to be closely monitored by SPT throughout its operation. It would also be necessary to limit the service to drop-off only out with the Ravenscraig site, with exception at the rail stations, due to the competitive nature of the bus network in and around the area. With these restrictions applied then this option becomes highly feasible.
Financial:	In the situation that no existing operator believes it economically viable to operate a commercial bus service in the short term, until the level of demand increase, then a subsidy would be required. It is highly likely that this subsidy would be required for a period of two to three year, by which time, there could be potentially enough development to have established a sufficient level of demand for the service to become commercially viable. These revenue costs would not be significant but would be higher than both options 1 and 2. There would be a level of risk associated with this option relating to the establishment of a suitable level of demand. Timing to start subsidising a service is critical as if the funding begins too soon, the costs could increase significantly if the development does not build out at the expected rate. On the other hand, if it is left too late, then residents both



	<p>new and existing during this time may develop a travel pattern and behaviour that could be difficult to change further downstream when a service does enter the market.</p> <p>Enhancements to the active travel network including new lighting and additional links, would again involve a relatively low level of investment and are also low risk.</p>	
Public:	<p>This option would be likely to receive a positive reception from the public as it would provide residents and visitors to the site a greater choice of transport options. By providing direct linkages from the site to the local rail network it would be extremely beneficial to residents as it reduces the need for multiple interchanges and reduces the need for car dependency.</p>	
STAG Criteria		
Criterion	Assessment Summary	Supporting Information
Environment:	=	<p>The following impacts of option 3 have been identified in terms of environmental sub-criteria:</p> <ul style="list-style-type: none"> <li>• <b>Noise &amp; vibration:</b> Currently there are no bus movements through the site. If this option was implemented and attracts bus services to operate through the site, then there could be a potential for minor noise impact for existing residents.</li> <li>• <b>Local air quality:</b> Access to more sustainable modes of transport and enhanced active travel links could lead to a shift in mode share towards sustainable transport modes, thus taking more cars off the road. Potential to have a minor benefit to local air quality.</li> <li>• <b>Water quality, drainage &amp; flood defence:</b> No impact on any watercourses or likely to be affected by any watercourses.</li> <li>• <b>Geological features:</b> No impact on geology.</li> <li>• <b>Biodiversity &amp; habitats:</b> No impact on biodiversity and habitats.</li> <li>• <b>Landscape:</b> No impact on landscape.</li> <li>• <b>Visual amenity:</b> No impact on visual amenity.</li> <li>• <b>Agriculture and Soils:</b> No impact on agriculture and soils.</li> <li>• <b>Cultural heritage:</b> No impact on cultural heritage.</li> </ul>
Safety:	✓✓	<p>Travelling by public transport tends to be an inherently safer mode of transport, therefore, passengers on public transport experience a lower level of risk. This option could potentially see a reduction in accidents due to a mode shift away from car. Passengers could then further benefit by completing the remainder of their journey by rail, which is again an even safer mode of travel. Additionally, improving bus infrastructure would improve the feeling of security for many bus passengers, with appropriate shelters and lighting in place.</p>

		Active travel users will also receive a minor benefit through the introduction of enhanced provision of cycling infrastructure, reducing the risk of interactions with cars.
Economy:	✓	<p><b>Transport Economic Efficiency (TEE):</b> Option 3 could provide several economic efficiency benefits for the local area. Bus users from/to the site, could potentially receive both journey time savings and journey time reliability as a result of a regular service provided by this option. Journey quality for bus users could also increase through improved infrastructure such as shelters and bus timetable information. Additionally, journey times, reliability and quality could all see improvements as a result of the longest leg of the journey being undertaken by rail, made possible by this option. There is also the potential for bus and rail farebox increases due to increased patronage levels on both local bus services and rail services as a result of the option. For bus operators, there could be an increase in vehicle operating costs as a result of increased vehicle kilometres and an increase in operating and maintenance costs, such as bus vehicle operation costs and maintenance costs associated with maintaining the bus shelters.</p> <p><b>EALI / Wider Benefits:</b> this option could have a positive impact on EALIs by providing the opportunity for further transport integration within the site for both residents and visitors to the site. With the improved infrastructure in place and a regular bus service linking key rail stations to the site, there is the ability for improved transport connectivity and access to the site for both local residents and residents of the wider North Lanarkshire council area. This could potentially lead to the spread of wealth and economic impacts throughout the local area, with land unlocked due to the introduction of a regular and reliable public transport option. This could make the site more accessible to the local area and encourage travel to the site for employment and leisure opportunities as well as travel to the college for educational purposes. Additionally, residents could potentially see increased earnings with access to higher skilled employment, which could see the local economy benefit from increased spending in the area.</p>
Integration:	✓	This option has the potential to bring a minor positive benefit to the integration criteria. The option has the potential to further integrate the Ravenscraig site into the local area and transport network by providing a reliable public transport link into key stations for travel within and out with North Lanarkshire. The option would also help facilitate integration of land-use by providing these links for both residents and visitors to the site, making the site more accessible. Additionally, the option would also perform well against the Government's five high level and secondary criteria, by improving integration and social inclusion in particular as it would open up links to Motherwell rail station to facilitate north-south movement in North Lanarkshire.
Accessibility and Social Inclusion:	✓✓	Option 3 has the potential to improve both current accessibility of the site and improve social inclusion through integrating the rail-bus into the local bus network. This bus would not only benefit residents of the Ravenscraig site but also assist in providing visitors to the site with a reliable and accessible

		public transport option. Access to key services such as leisure and health could be made easier through implementation of this option, integrating Ravenscraig into the local community and providing access and linkages to other key towns within North Lanarkshire and beyond.
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## Part 1 Appraisal Summary Tables

Proposal Details			
Name and address of authority or organisation promoting the proposal:  (Also provide name of any subsidiary organisations also involved in promoting the proposal)		TBC	
Proposal Name:	Option 4 – Local Bus Service and enhancement of Active Travel and marketing of Active Travel (PTP).	Name of Planner:	Steven Reid, Jacobs UK Ltd
Proposal Description:	Option 4 would involve introducing a new local bus service operating along the A723 and through the site linking Eurocentral in the north to Wishaw hospital to the south of the site. This option would provide connectivity for residents to access key employment areas such as Eurocentral and health services at Wishaw hospital. Onward rail connectivity is also provided for with the service stopping at Shieldmuir rail station. The service would operate a strict pick-up / drop-off policy to ensure the service does not compete with any other existing service along certain stretches of the corridor. Active travel enhancement would include building on the existing cycling infrastructure within the masterplan area, such as additional cycle routes, direct linkages into the main areas and surrounding towns	Estimated Total Public Sector Funding Requirement:	Capital costs/grant: TBC
			<i>Current revenue support</i> TBC
			<i>Annual revenue support</i>  TBC

	and cycle storage.		
Funding Sought From: (if applicable)		Amount of Application:	<i>Present Value of Cost to Govt.</i> TBC
<b>Background Information</b>			
Geographic Context:	<p>The former Ravenscraig Steelworks closed in 1992 and is now one of the largest brownfield redevelopment opportunities in Europe, measuring over 450 hectares. Development on the site began in 2006; however, there have been subsequent revisions to the Ravenscraig Masterplan following the original version. Certain aspects of the previous masterplan such as the level of residential and employment mix are now seen as undeliverable and instead the masterplan is now targeted at delivering realistic opportunities while implementing best practice in placemaking and sustainability.</p> <p>The Ravenscraig Masterplan site itself is situated within the North Lanarkshire local authority boundary and is located between the towns of Motherwell and Wishaw. The total site area is 466.1 hectares and currently contains a mix of housing, the Sports City leisure complex and the largest of six campuses of the New College Lanarkshire.</p> <p>The site is in close proximity to the M74, which is approximately 5km to the southwest, and the M8, which is approximately 5km to the north. The site is currently accessed from the north via a roundabout which connects New Craig Road to the A723, leading to the M8 in the north and Motherwell to the west, and the B7029, leading to Newhouse and Cleland.</p> <p>From the south, the site is accessed via a roundabout connecting Robberhall Road with the A721, leading to Motherwell in the west and Wishaw in the east.</p> <p>The site is also bounded by two rail lines, the West Coast Mainline to the south and west, and the Wishaw Deviation line to the east and south.</p>		
Social Context:	<p>The Ravenscraig Masterplan area is currently undergoing development, with further development, subject to planning permission, phased over a build-out period from 2018 to 2045. Currently on site there are approximately 500 houses, with a further 3,500 expected over the build-out period. At the time of the census in 2011, there was less housing on-site, thus some of the data analysis currently only reflects upon this sample size. The following points were, however, extracted from this data analysis:</p> <ul style="list-style-type: none"> <li>• The Ravenscraig site has witnessed a growth in population of <b>56%</b> from 2011 to 2015, far exceeding local, regional and national growth rates. This is directly linked to the increased development over this same time</li> </ul>		

	<p>period;</p> <ul style="list-style-type: none"> <li>• Ravenscraig has a relatively young age structure with <b>72%</b> of the population within the working age category. This demonstrates a strong trend in in-migration to the area and confidence behind the area as being a particularly attractive location in which to reside;</li> <li>• The population of Ravenscraig has a higher academic attainment level than both the regional and national levels, with <b>85%</b> of the population having gained a level 1 qualification or above, compared to 67% for North Lanarkshire and 73% for Scotland;</li> <li>• The fact that no parts of the Ravenscraig area are within the 20% most deprived in Scotland and the relatively high house prices, indicates strong economic health within the area. This is further evidenced by the high car availability levels, with over <b>30%</b> of households within the Ravenscraig Masterplan site having access to 3 or more cars, which is <b>7 times</b> the local, regional and national rates</li> </ul> <p>From analysis of the demographic data it can be seen that the Ravenscraig development area is a particularly attractive location to reside. The increase in population, particularly in the working age category, since 2011 demonstrates a strong trend in in-migration to the area. The fact there are no zones within the 20% most deprived and the relatively high house prices indicate strong economic health within the area. These current trends and profiles can be linked to the current housing mix on the site, however, with a broader mix of housing types planned for the future development of the masterplan, these trends could potentially change, introducing an increased demand for public transport.</p>
Economic Context:	<p>As expected from the trends witnessed from the analysis of the social context data, Ravenscraig also demonstrates a healthy economic context:</p> <ul style="list-style-type: none"> <li>• Analysis of economic datasets identified that the majority of the Ravenscraig residents were young working professionals, with the economic activity rate (77.4%) almost <b>10%</b> higher than the regional and national levels;</li> <li>• Ravenscraig has a higher proportion of people employed in higher skilled industries, which is reflected in the weekly household income data analysis with Ravenscraig residents earning <b>45%</b> more than the regional and <b>44%</b> more than the national rates;</li> <li>• Residents of Ravenscraig claim the lowest level of Job Seekers Allowance at 1.2%, <b>2%</b> lower the Local Authority and <b>1.2%</b> lower than the national levels.</li> </ul> <p>From analysis of the economic data it would appear that the Ravenscraig development area has a high proportion of young working professionals. With a higher economic activity rate and lower claimant rate than all other areas, it could potentially indicate that Ravenscraig residents may travel further for work, either in or out with North Lanarkshire. This is</p>

	<p>further evidenced by the greater number of people in the Ravenscraig area who are employed in higher skilled industries.</p> <p>The future masterplan has identified several areas of land for employment opportunities. This will provide both current and future residents with employment opportunities close to home. It was also provide other residents within North Lanarkshire job opportunities and could, therefore, have a positive impact on the local and regional economy.</p>
<p><b>Planning Objectives</b></p>	
<p>Objective:</p>	<p>Performance against planning objective:</p>
<p><b>TPO1:</b> <i>Improve public transport connectivity between Ravenscraig and other areas within North Lanarkshire, in particular to improve north-south connectivity and reduce average journey times between these locations to 30 – 45 minutes.</i></p>	<p><b>Performance against Transport Planning Objective: Minor Benefit</b></p> <p>A new local bus operating along a north-south axis from Eurocentral to Wishaw would provide the opportunity for residents to undertake this movement, although it is acknowledged this is restricted to south of the M8 corridor. Interchange opportunities to continue further north are, however, provided at Eurocentral by other bus services.</p>
<p><b>TPO2:</b> <i>To increase mode share of public transport for journeys to work and leisure activities over the masterplan build out period from 7% to 14% (based on minimum PT mode share from the comparator settlements).</i></p>	<p><b>Performance against Transport Planning Objective: Moderate Benefit</b></p> <p>This option would provide residents of the site the opportunity to travel to employment locations along the route including interchange opportunities at Shieldmuir Rail Station and connections to other bus services at both Eurocentral and Wishaw hospital.</p>
<p><b>TPO3:</b> <i>To increase travel by active modes over the masterplan build out period, including walking and cycling from 2% to 7% (based on the North Lanarkshire average walking and cycling numbers).</i></p>	<p><b>Performance against Transport Planning Objective: Minor Benefit</b></p> <p>The active travel measure to support the core option would improve cycling and walking infrastructure in the local area, in addition to increasing cycle storage at rail and bus interchanges. Providing direct linkages would encourage increased use of these facilities.</p>
<p><b>TPO4:</b> <i>To connect Ravenscraig with a reliable strategic public transport network to provide access to destinations of work and leisure including Glasgow and Edinburgh to help support current travel patterns and reduce overall commuting times.</i></p>	<p><b>Performance against Transport Planning Objective: Minor Benefit</b></p> <p>This option would allow Ravenscraig residents the opportunity to interchange to rail at Shieldmuir rail station for onward travel to both Glasgow and Edinburgh. Additionally, it would provide an opportunity to interchange to the direct bus services at Eurocentral to both Glasgow and Edinburgh.</p>



<p>Rationale for Selection or Rejection of Proposal:</p>	<p>This option has the potential to assist in delivering against the TPOs as well as deliver against the aim of the Ravenscraig masterplan as a sustainable community. The option may prove slightly harder to implement without sufficient funding but is likely to be implementable and makes a positive contribution towards the STAG criteria. This should be considered within the Transport Assessment for the new masterplan and ongoing discussions between the Council, the Developer and SPT on potential financial support.</p>
<p><b>Implementability Appraisal</b></p>	
<p>Technical:</p>	<p>A new local bus service on the local bus network would be feasible. The option would involve running a new service through the masterplan area and linking Eurocentral to the north and Wishaw hospital to the south, with an interchange opportunity at Shieldmuir station. Additional bus infrastructure would be necessary as the Ravenscraig site develops such as new bus stops designed to SPT standards.</p> <p>Additionally, for the second half of the option, enhancement of active travel, again there are no issues affecting the feasibility of these enhancements. Key elements of high quality cycling infrastructure already exists within the masterplan site, and so provide a good base for further enhancement of the internal network. This would include providing new links that directly link the site with the local network, providing both cyclists and pedestrians with direct and easy access to and from the surrounding areas. Further construction of these path networks would be required and the responsibility of these within the site would lay primarily with the developer. However, due to the existence of these key paths already within the site and the best design practice that has been applied, it is thought this would continue throughout the further development of the site and as such there are no foreseen issues affecting the feasibility of the option.</p>
<p>Operational:</p>	<p>Once the bus stop infrastructure is in place, there would be a requirement for ongoing maintenance of the bus stops such as cleaning and repairs to damaged or vandalised shelters. It would be prudent to believe that initially this bus service would need to be subsidised and, therefore, the operation of the service would be carried out by the successful applicant to SPT. The overall operation of the option is likely to be closely monitored by SPT throughout its operation. It would also be necessary to limit the service to drop-off only out with the Ravenscraig site, with exception at the rail stations, due to the competitive nature of the bus network in and around the area. With these restrictions applied then this option becomes highly feasible.</p>
<p>Financial:</p>	<p>In the situation that no existing operator believes it economically viable to operate a commercial bus service in the short term, until the level of demand increase, then a subsidy would be required. It is highly likely that this subsidy would be required for a period of two to three year, by which time, there could be potentially enough development to have established a sufficient level of demand for the service to become commercially viable. These revenue costs would not be significant but would be higher than both options 1 and 2. There would be a level of risk associated with this option relating to the establishment of a suitable level of demand. Timing to start subsidising a service is critical as if the funding begins too soon, the costs could increase significantly if the development does not build out at the expected rate. On the other hand, if it is left too late, then residents both</p>

		<p>new and existing during this time may develop a travel pattern and behaviour that could be difficult to change further downstream when a service does enter the market.</p> <p>Enhancements to the active travel network including new lighting and additional links, would again involve a relatively low level of investment and are also low risk.</p>
Public:		<p>This option would be likely to receive a positive reception from the public as it would provide residents and visitors to the site a greater choice of transport options. By providing direct linkages from the site to the local rail network it would be extremely beneficial to residents as it reduces the need for multiple interchanges and reduces the need for car dependency. It would also provide the opportunity to connect to key services such as Wishaw hospital and other employment opportunities at Eurocentral.</p>
STAG Criteria		
Criterion	Assessment Summary	Supporting Information
Environment:	=	<p>The following impacts of option 4 have been identified in terms of environmental sub-criteria:</p> <ul style="list-style-type: none"> <li>• <b>Noise &amp; vibration:</b> Currently there are no bus movements through the site. If this option was implemented and attracts bus services to operate through the site, then there could be a potential for minor noise impact for existing residents.</li> <li>• <b>Local air quality:</b> Access to more sustainable modes of transport and enhanced active travel links could lead to a shift in mode share towards sustainable transport modes, thus taking more cars off the road. Potential to have a minor benefit to local air quality.</li> <li>• <b>Water quality, drainage &amp; flood defence:</b> No impact on any watercourses or likely to be affected by any watercourses.</li> <li>• <b>Geological features:</b> No impact on geology.</li> <li>• <b>Biodiversity &amp; habitats:</b> No impact on biodiversity and habitats.</li> <li>• <b>Landscape:</b> No impact on landscape.</li> <li>• <b>Visual amenity:</b> No impact on visual amenity.</li> <li>• <b>Agriculture and Soils:</b> No impact on agriculture and soils.</li> <li>• <b>Cultural heritage:</b> No impact on cultural heritage.</li> </ul>
Safety:	✓✓	<p>Travelling by public transport tends to be an inherently safer mode of transport, therefore, passengers on public transport experience a lower level of risk. This option could potentially see a reduction in accidents due to a mode shift away from car. Passengers could then further benefit by completing the remainder of their journey by rail, which is again an even safer mode of travel. Additionally, improving bus infrastructure would improve the feeling of security for many bus passengers, with</p>

		<p>appropriate shelters and lighting in place.</p> <p>Active travel users will also receive a minor benefit through the introduction of enhanced provision of cycling infrastructure, reducing the risk of interactions with cars.</p>
Economy:	✓	<p><b>Transport Economic Efficiency (TEE):</b> Option 4 could provide several economic efficiency benefits for the local area. Bus users from/to the site, could potentially receive both journey time savings and journey time reliability as a result of a regular service provided by this option. Journey quality for bus users could also increase through improved infrastructure such as shelters and bus timetable information. Additionally, journey times, reliability and quality could all see improvements as a result of the longest leg of the journey being undertaken by rail, made possible by this option. There is also the potential for bus and rail farebox increases due to increased patronage levels on both local bus services and rail services as a result of the option. For bus operators, there could be an increase in vehicle operating costs as a result of increased vehicle kilometres and an increase in operating and maintenance costs, such as bus vehicle operation costs and maintenance costs associated with maintaining the bus shelters.</p> <p><b>EALI / Wider Benefits:</b> this option could have a positive impact on EALIs by providing the opportunity for further transport integration within the site for both residents and visitors to the site. With the improved infrastructure in place and a regular bus service linking to Shieldmuir rail station to the site, there is the ability for improved transport connectivity and access to the site for both local residents and residents of the wider North Lanarkshire council area. This could potentially lead to the spread of wealth and economic impacts throughout the local area, with land unlocked due to the introduction of a regular and reliable public transport option. This could make the site more accessible to the local area and encourage travel to the site for employment and leisure opportunities as well as travel to the college for educational purposes and Wishaw hospital for health care. Additionally, residents could potentially see increased earnings with access to higher skilled employment, which could see the local economy benefit from increased spending in the area.</p>
Integration:	✓	<p>This option has the potential to bring a minor positive benefit to the integration criteria. The option has the potential to further integrate the Ravenscraig site into the local area and transport network by providing a reliable public transport link into key stations for travel within and out with North Lanarkshire. The option would also help facilitate integration of land-use by providing these links for both residents and visitors to the site, making the site more accessible and providing links to Eurocentral. Additionally, the option would also perform well against the Government's five high level and secondary criteria, by improving integration and social inclusion in particular as it would open up links to interchange at Eurocentral to provide a north-south movement in North Lanarkshire.</p>
Accessibility and Social Inclusion:	✓✓	<p>Option 4 has the potential to improve both current accessibility of the site and improve social inclusion through integrating the rail links into the local bus network. This bus would not only benefit residents</p>

		<p>of the Ravenscraig site but also assist in providing visitors to the site with a reliable and accessible public transport option. Access to key services such as leisure and health could be made easier through implementation of this option, integrating Ravenscraig into the local community and providing access and linkages to other key towns within North Lanarkshire and beyond.</p>
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## Part 1 Appraisal Summary Tables

Proposal Details			
Name and address of authority or organisation promoting the proposal:  (Also provide name of any subsidiary organisations also involved in promoting the proposal)		TBC	
Proposal Name:	Option 7 – Ravenscraig Rail Station and enhancement of Active Travel and marketing of Active Travel (PTP).	Name of Planner:	Steven Reid, Jacobs UK Ltd
Proposal Description:	Option 7 would involve building a rail station on the Wishaw Deviation Line within the Ravenscraig masterplan site, providing access to both Glasgow and Edinburgh and the re-timetabling and rerouting of the Lanark-Glasgow existing service. The station would include secure cycle storage to encourage active mode travel. Active travel enhancement would include building on the existing cycling infrastructure within the masterplan area, such as additional cycle routes, direct linkages into the main areas and surrounding towns and cycle storage.	Estimated Total Public Sector Funding Requirement:	Capital costs/grant: TBC
			<i>Current revenue support</i> TBC
			<i>Annual revenue support</i>  TBC
Funding Sought From: (if applicable)		Amount of Application:	<i>Present Value of Cost to Govt.</i>  TBC
Background Information			

<p>Geographic Context:</p>	<p>The former Ravenscraig Steelworks closed in 1992 and is now one of the largest brownfield redevelopment opportunities in Europe, measuring over 450 hectares. Development on the site began in 2006; however, there have been subsequent revisions to the Ravenscraig Masterplan following the original version. Certain aspects of the previous masterplan such as the level of residential and employment mix are now seen as undeliverable and instead the masterplan is now targeted at delivering realistic opportunities while implementing best practice in placemaking and sustainability.</p> <p>The Ravenscraig Masterplan site itself is situated within the North Lanarkshire local authority boundary and is located between the towns of Motherwell and Wishaw. The total site area is 466.1 hectares and currently contains a mix of housing, the Sports City leisure complex and the largest of six campuses of the New College Lanarkshire.</p> <p>The site is in close proximity to the M74, which is approximately 5km to the southwest, and the M8, which is approximately 5km to the north. The site is currently accessed from the north via a roundabout which connects New Craig Road to the A723, leading to the M8 in the north and Motherwell to the west, and the B7029, leading to Newhouse and Cleland.</p> <p>From the south, the site is accessed via a roundabout connecting Robberhall Road with the A721, leading to Motherwell in the west and Wishaw in the east.</p> <p>The site is also bounded by two rail lines, the West Coast Mainline to the south and west, and the Wishaw Deviation line to the east and south.</p>
<p>Social Context:</p>	<p>The Ravenscraig Masterplan area is currently undergoing development, with further development, subject to planning permission, phased over a build-out period from 2018 to 2045. Currently on site there are approximately 500 houses, with a further 3,500 expected over the build-out period. At the time of the census in 2011, there was less housing on-site, thus some of the data analysis currently only reflects upon this sample size. The following points were, however, extracted from this data analysis:</p> <ul style="list-style-type: none"> <li>• The Ravenscraig site has witnessed a growth in population of <b>56%</b> from 2011 to 2015, far exceeding local, regional and national growth rates. This is directly linked to the increased development over this same time period;</li> <li>• Ravenscraig has a relatively young age structure with <b>72%</b> of the population within the working age category. This demonstrates a strong trend in in-migration to the area and confidence behind the area as being a particularly attractive location in which to reside;</li> </ul>

	<ul style="list-style-type: none"> <li>• The population of Ravenscraig has a higher academic attainment level than both the regional and national levels, with <b>85%</b> of the population having gained a level 1 qualification or above, compared to 67% for North Lanarkshire and 73% for Scotland;</li> <li>• The fact that no parts of the Ravenscraig area are within the 20% most deprived in Scotland and the relatively high house prices, indicates strong economic health within the area. This is further evidenced by the high car availability levels, with over <b>30%</b> of households within the Ravenscraig Masterplan site having access to 3 or more cars, which is <b>7 times</b> the local, regional and national rates</li> </ul> <p>From analysis of the demographic data it can be seen that the Ravenscraig development area is a particularly attractive location to reside. The increase in population, particularly in the working age category, since 2011 demonstrates a strong trend in in-migration to the area. The fact there are no zones within the 20% most deprived and the relatively high house prices indicate strong economic health within the area. These current trends and profiles can be linked to the current housing mix on the site, however, with a broader mix of housing types planned for the future development of the masterplan, these trends could potentially change, introducing an increased demand for public transport.</p>
Economic Context:	<p>As expected from the trends witnessed from the analysis of the social context data, Ravenscraig also demonstrates a healthy economic context:</p> <ul style="list-style-type: none"> <li>• Analysis of economic datasets identified that the majority of the Ravenscraig residents were young working professionals, with the economic activity rate (77.4%) almost <b>10%</b> higher than the regional and national levels;</li> <li>• Ravenscraig has a higher proportion of people employed in higher skilled industries, which is reflected in the weekly household income data analysis with Ravenscraig residents earning <b>45%</b> more than the regional and <b>44%</b> more than the national rates;</li> <li>• Residents of Ravenscraig claim the lowest level of Job Seekers Allowance at 1.2%, <b>2%</b> lower the Local Authority and <b>1.2%</b> lower than the national levels.</li> </ul> <p>From analysis of the economic data it would appear that the Ravenscraig development area has a high proportion of young working professionals. With a higher economic activity rate and lower claimant rate than all other areas, it could potentially indicate that Ravenscraig residents may travel further for work, either in or out with North Lanarkshire. This is further evidenced by the greater number of people in the Ravenscraig area who are employed in higher skilled industries.</p> <p>The future masterplan has identified several areas of land for employment opportunities. This will provide both current and future residents with employment opportunities close to home. It was also provide other residents within North</p>



	Lanarkshire job opportunities and could, therefore, have a positive impact on the local and regional economy.
<b>Planning Objectives</b>	
Objective:	Performance against planning objective:
<b>TPO1:</b> <i>Improve public transport connectivity between Ravenscraig and other areas within North Lanarkshire, in particular to improve north-south connectivity and reduce average journey times between these locations to 30 – 45 minutes.</i>	<b>Performance against Transport Planning Objective: Moderate Negative Impact</b>  This option would have a negative impact on this TPO as it would result in the current Lanark service being rerouted dropping a call at Motherwell station, which provides interchange opportunities to the north-south service to Coatbridge, Whifflet and Cumbernauld.
<b>TPO2:</b> <i>To increase mode share of public transport for journeys to work and leisure activities over the masterplan build out period from 7% to 14% (based on minimum PT mode share from the comparator settlements).</i>	<b>Performance against Transport Planning Objective: Moderate Benefit</b>  This option would provide Ravenscraig residents with a rail station to enable access towards Glasgow and towards Lanark. It would, however, eliminate interchange opportunities at Motherwell, for north-south travel.
<b>TPO3:</b> <i>To increase travel by active modes over the masterplan build out period, including walking and cycling from 2% to 7% (based on the North Lanarkshire average walking and cycling numbers).</i>	<b>Performance against Transport Planning Objective: Minor Benefit</b>  The active travel measure to support the core option would improve cycling and walking infrastructure in the local area, in addition to increasing cycle storage at rail and bus interchanges. Providing direct linkages would encourage increased use of these facilities.
<b>TPO4:</b> <i>To connect Ravenscraig with a reliable strategic public transport network to provide access to destinations of work and leisure including Glasgow and Edinburgh to help support current travel patterns and reduce overall commuting times.</i>	<b>Performance against Transport Planning Objective: Minor Benefit</b>  This option would provide improved access for residents of Ravenscraig towards Glasgow, however, would require additional interchanges to access Edinburgh and to access Motherwell for north-south rail links.

Rationale for Selection or Rejection of Proposal:	This option would have a significant negative impact against TPO1 and performs poorly against three of the STAG criteria. At present, it would be difficult to develop a positive economic case for this option which faces several difficult barriers to implementation including operational and financial.
<b>Implementability Appraisal</b>	
Technical:	<p>A feasibility study would need to be undertaken to gauge the suitability of the site currently identified for a potential rail station in the Ravenscraig masterplan site. Although from a high level there does not seem to be too many issues highlighted with constructing a station on the chosen site, there would be engineering challenges with the location. Track suitability, signalling, OLE would all need to be investigated and possibly upgraded in order to deliver a functioning station on the site.</p> <p>In addition to any engineering work on the rail line, there would also need to be extensive engineering works to build the station itself. This would involve land contamination studies, construction of the station to deliver platforms long enough to accommodate six carriage train sets, passenger shelters, ticket machines, CCTV and lighting and walkways between platforms. A car park and bus stop facilities may also be a necessary inclusion to the delivery of the station due to the location of the site and its distance from the main hub of the Ravenscraig site.</p> <p>To deliver a rail line in the appropriate condition for frequent use and a rail station would require significant engineering, all of which would be carried out to standard rail engineering techniques and guidance. As the site lies on an existing rail line, the technical delivery of a station should be achievable subject to the findings of a detailed feasibility investigation.</p> <p>Additionally, for the second half of the option, enhancement of active travel, again there are no issues affecting the feasibility of these enhancements. Key elements of high quality cycling infrastructure already exists within the masterplan site, and so provide a good base for further enhancement of the internal network. This would include providing new links that directly link the site with the local network, providing both cyclists and pedestrians with direct and easy access to and from the surrounding areas. Further construction of these path networks would be required and the responsibility of these within the site would lay primarily with the developer. However, due to the existence of these key paths already within the site and the best design practice that has been applied, it is thought this would continue throughout the further development of the site and as such there are no foreseen issues affecting the feasibility of the option.</p>
Operational:	In operation terms, the serving of the station may prove to be unfeasible at least in the short and medium term. Initial discussions with both Abellio ScotRail and Network Rail have identified several issues which could impact the feasibility of a potential station at Ravenscraig. These issues mainly link to the servicing of the station and the impacts to the wider local rail network and surrounding locations. Due to capacity issues at Glasgow Central

	<p>station, it would be highly unlikely that a new service could be introduced to the network, thus a rerouting of an existing service would be required to serve Ravenscraig. This would have significant detrimental impacts to the success of the current Lanark service which after receiving significant investment over recent years has seen momentous increases in patronage at stations along the line, in particular at Shieldmuir. Both Abellio ScotRail and Network Rail in addition to other bodies are highly reluctant to sacrifice the improvements and gains on this line to serve Ravenscraig, which would not have significant patronage levels for a very significant period of time.</p> <p>If a station was indeed constructed, it would require ongoing maintenance to keep the station up-to standard, with cleaning and repairs, in addition to operating and maintaining ticket machines and digital signage. There would also be ongoing operational costs associated with stopping a service at Ravenscraig.</p>	
Financial:	<p>A new rail station in Ravenscraig would involve a significant level of investment. Initial discussions with Abellio ScotRail and Network Rail suggested that Robroyston station should be used as a proxy for estimating costs for a station at Ravenscraig. It is estimated that a new station would cost in the region of £11.5 million without parking facilities and £13.5-14 million for a station including parking. The majority of this cost would fall to the developer of the site, with the potential for some funding from the Scottish Stations Fund. This would be a significant outlay and both Abellio and Network Rail feel that in addition to the station costs, any train service that needs to be rerouted to serve the station would need to be heavily subsidised due to the loss of patronage from current stations at Shieldmuir and Motherwell.</p> <p>There would, therefore, be significant risk in this option as not only would the capital outlay be significant, ongoing maintenance costs of the station, stopping costs of a service at the station and the subsidising of a service would amount to a considerable capital investment for which there may not be sufficient patronage.</p> <p>Enhancements to the active travel network including new lighting and additional links, would again involve a low level of investment and are low risk.</p>	
Public:	<p>A rail station at Ravenscraig has been on the agenda for a significant period of time and was seen as an important aspect during the consultation period. It would therefore be likely to receive a very positive reaction from the residents of the site and potentially those who travel to the site for leisure and educational purposes. However, to serve the station it would be necessary to reroute an existing service which is highly likely to receive negative feedback from existing passengers of this service and residents of Shieldmuir and Motherwell.</p>	
<b>STAG Criteria</b>		
<b>Criterion</b>	<b>Assessment Summary</b>	<b>Supporting Information</b>

<p>Environment:</p>	<p>=</p>	<p>The following impacts of option 7 have been identified in terms of environmental sub-criteria:</p> <ul style="list-style-type: none"> <li>• <b>Noise &amp; vibration:</b> Noise and vibration likely to be experienced in the short term during construction of a station. Potential for minor noise and vibration impacts as a result of trains stopping at starting at the station.</li> <li>• <b>Local air quality:</b> Access to more sustainable modes of transport and enhanced active travel links could lead to a shift in mode share towards sustainable transport modes, thus taking more cars off the road. Potential to have a minor benefit to local air quality.</li> <li>• <b>Water quality, drainage &amp; flood defence:</b> No impact on any watercourses or likely to be affected by any watercourses.</li> <li>• <b>Geological features:</b> There could be minor impacts to the landscape due to groundwork during construction, including disturbing contaminated land. Both effects are likely to be temporary and impacts mitigated through proper management.</li> <li>• <b>Biodiversity &amp; habitats:</b> Minor negative impact as a result of cutting down trees and vegetation to construct a station. Also, potential to disturb wildlife along the railway as it currently is not serviced.</li> <li>• <b>Landscape:</b> No impact on landscape.</li> <li>• <b>Visual amenity:</b> No impact on visual amenity.</li> <li>• <b>Agriculture and Soils:</b> No impact on agriculture and soils.</li> <li>• <b>Cultural heritage:</b> No impact on cultural heritage.</li> </ul>
<p>Safety:</p>	<p>✓✓</p>	<p>Travelling by public transport tends to be an inherently safer mode of transport, therefore, passengers on public transport experience a lower level of risk. This option could potentially see a further reduction in risk as rail related accidents are far less common than all other modes of transport. A reduction in overall accidents in the local area, could be possible if a station was in place on the Ravenscraig site, to encourage residents and visitors to the site to use rail instead of car.</p> <p>Security is also regarded highly on rail, with CCTV and train guards present. Stations are also felt to be more secure, with CCTV, call assistance buttons and rail station staff present.</p> <p>Active travel users will also receive a minor benefit through the introduction of enhanced provision of cycling infrastructure, reducing the risk of interactions with cars.</p>
<p>Economy:</p>	<p>✘</p>	<p><b>Transport Economic Efficiency (TEE):</b> Option 7 could provide several economic efficiency benefits for residents and visitors to the Ravenscraig site, but have significant negative impacts on the wider rail network and existing passengers. As a consequence of rerouting the Lanark-Glasgow service. Journey times will be longer for existing customers from Lanark and Carluke and significantly longer for residents of Shieldmuir with a loss of a reliable and frequent service. This rerouting would leave</p>

		<p>both Shieldmuir and Motherwell underserved. Residents of Ravenscraig, however, would experience journey time savings to Glasgow and Edinburgh but would witness a negative impact on journey times to other locations within North Lanarkshire as a result of losing the direct connection to Motherwell rail station if using Shieldmuir. Rail farebox revenues are also likely to decrease as a result of a decrease in overall patronage, due to the omission of a stopping call at Shieldmuir and Motherwell. Vehicle operating and maintenance costs could also potential increase as a result of increased vehicle kilometres.</p> <p><b>EALI / Wider Benefits:</b> this option could have a positive impact on EALIs by providing the opportunity for further transport integration within the site for both residents and visitors to the site. A rail station on site could potentially facilitate in opening up the site for further development and economic investment. A rail service would make Ravenscraig more accessible from locations towards Glasgow and vice versa, which could encourage companies to locate in Ravenscraig, providing jobs for the local population, not only within the site but also the wider local area. With this investment and job opportunities, residents could potentially see increased earnings with access to higher skilled employment, which could see the local economy benefit from increased spending in the area.</p> <p>This option could also lead to some redistribution of economic activity away from the Ravenscraig site with residents having greater access to employment opportunities in Glasgow.</p>
Integration:	x	<p>As a consequence of rerouting the Lanark service to serve Ravenscraig, current integration of Shieldmuir and Motherwell stations would be negatively impacted upon as the stations would be underserved and lose direct services to Lanark, Wishaw and Carluke. Due to the position of a station at Ravenscraig, a high proportion of employees and a significant number of residents in Ravenscraig would still be required to interchange between other non-walking modes and rail, as they would to access existing local stations. There would then be a further need for other integration measures such as a local bus service, car parking facilities and active travel provision.</p> <p>A station would allow for better integration of the Ravenscraig site into the local transport network but would negatively impact upon integration of the site into the wider transport network within North Lanarkshire by increasing the number of interchanges necessary to complete a north south journey.</p> <p>Overall a rail station would perform well against the five Government high level objectives and secondary objectives.</p>
Accessibility and Social Inclusion:	xx	<p>As part of the accessibility analysis, this option was broken down into 2 sub-options, 6a which included reducing the Lanark Glasgow service to 1 train per hour with the second train rerouted to serve Ravenscraig and 6b which rerouted the Lanark service in its entirety.</p>

	<p>From the analysis, it is clear that although options 6a and 6b provide journey time benefits to residents and visitors to the Ravenscraig site, they have a significant negative impact on accessibility/social inclusion and journey times for those currently using the Lanark service and those travelling to / from Motherwell and Shieldmuir. The most significant impact is on local accessibility with travel times to Hamilton, Airdrie, Coatbridge and Cumbernauld all increasing, especially for Shieldmuir, where the largest increase in journey time was 53 minutes in the PM to Hamilton under Option 7b. Both of these scenarios have a negative impact on local accessibility and would not help deliver against TPO1. Although in some instances travel times do not increase for Motherwell, the frequency of service is heavily impacted upon, with passengers at the station losing two services per hour.</p>
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## Appendix B. Public Transport Accessibility

### B.1 Introduction

To support the Ravenscraig Part 1 appraisal, analysis was undertaken to comprehend changes to public transport accessibility as part of the implementation of any of the options and also a high-level calculation of likely patronage levels.

#### B.1.1 TRACC

TRACC accessibility software was utilised to measure the change in accessibility as a result of implementing any of the options. TRACC uses current day timetabled data to calculate the travel time between origin and destination points using public transport, including walking and cycling. TRACC calculates the shortest journey time available within the set travel window and presents these results.

For the analysis of the options in this study several runs were identified and undertaken. Due to the nature of Options 1 and 2, which are more infrastructure based than timetable related, any potential benefits derived from these options is difficult to model within TRACC and have thus been omitted from the journey time calculations.

#### B.1.2 Modelled Runs

The following model runs were identified and measured within TRACC.

- **Option 3** – From discussions with local bus operators and SPT, it was identified that the key service provision would fall within the peak periods in the AM and PM. As such a new Rail-Bus service was coded into TRACC, completing a circular route from Carfin rail station, through the Ravenscraig site, Shieldmuir rail station, Motherwell rail station and then back to Carfin. The service would be provided hourly, and take 39 minutes to complete one full circuit, including drop-off/pick-up.
- **Option 4** – From discussions with local bus operators and SPT, it was identified that the key service provision would fall within the peak periods in the AM and PM. As such a new local north-south bus service was coded into TRACC, completing a north-south route from Wishaw Hospital, Shieldmuir rail station, through the Ravenscraig site and onto Eurocentral. The service would be provided hourly (complete the northbound route on the hour hourly and southbound on the half hour hourly, assuming only one vehicle), and take 20 minutes to complete one full northbound route, including drop-off/pick-up (restricted pick-up due to competition).
- **Option 7** – Option 7 was split into 2 sub-options to understand the complications behind serving Ravenscraig station and the likely impacts on the surrounding areas.
  - Option 7a – Currently there is a half hourly service from Lanark that passes through Shieldmuir and Motherwell to Glasgow Central. This option involved adjusting the headway to hourly and rerouting one of the services via a potential Ravenscraig rail station. This, therefore, provided Ravenscraig with one service an hour between 7am and 10am and between 4pm and 7pm, in both directions.
  - Option 7b – As a result of discussions with ScotRail and Network Rai it was believed that the most likely option would be to reroute the Lanark service via Ravenscraig, thus this option takes option 6a one step further and reroutes all Lanark Glasgow services through Ravenscraig, providing Ravenscraig with a half hourly service. This would then leave Shieldmuir with only the Carstairs service stopping here.

#### B.1.3 Accessibility Results

The following section outlines the changes in public transport travel time from each of the above options compared to the current public transport provision. Graphs illustrating the travel time to key locations from / to Ravenscraig, Shieldmuir and Motherwell are also highlighted.

### Option 3:

The key points from the analysis of option 3 are:

- The greatest benefits are felt on travel from the Ravenscraig site under this option. There are journey time savings of 8 minutes to Motherwell, 6 minutes to Glasgow Central and 4 minutes to both Coatbridge and Cumbernauld in the AM peak;
- In the PM peak, the time savings in general are slightly higher, with a 9-minute reduction in travel time to Glasgow and Cumbernauld, 8-minute reduction to Motherwell and 6 minutes to Coatbridge.

### Option 4:

The key points from the analysis of option 4 are:

- This option provides moderate journey time savings to local destinations. There are journey time savings of 6 minutes to Motherwell, 14 minutes to Airdrie and 5 minutes to both Coatbridge and Cumbernauld in the AM peak;
- Access to the site from local areas also see journey time savings, in particular from Airdrie with a reduction in journey time of 20 minutes in the AM peak
- In the PM peak, the time savings in general are slightly higher, with a 10-minute reduction in travel time to Glasgow and Cumbernauld, 8-minute reduction to Motherwell and 13 minutes to Airdrie.
- There is a similar trend to Ravenscraig from other areas. In particular Airdrie which again witnesses a significant journey time saving of 15 minutes and Glasgow Central with a saving of 11 minutes.

### Option 7a:

The key points from the analysis of option 7a are:

#### AM

- From Ravenscraig there are journey time savings to both Glasgow (~21mins) and Edinburgh (7mins);
- There are journey times increases from Ravenscraig to all six local locations including 23 minute increases to Airdrie and Hamilton and 21 minute increases to Coatbridge and Cumbernauld;
- No significant impact on journey times from Motherwell apart from the frequency of services to Glasgow and Edinburgh;
- Increases in journey time to Hamilton from both Motherwell and Shieldmuir of 7 minutes and 12 minutes respectively;
- To Ravenscraig from Glasgow Central is the only journey to witness any reduction in journey time with a saving of 8 minutes;
- 7 of the 12 destinations all show increases in journey time to Ravenscraig including 14 minutes from Hamilton and 9 minutes from Airdrie;
- Journey time from Hamilton to Motherwell increases by 10 minutes, while travel time to Shieldmuir increases by 8 minutes from both Glasgow Central and Hamilton;

#### PM

- From Ravenscraig in the PM reflects a similar pattern as the AM with only the journey time to Glasgow Central displaying a benefit of 22 minutes, 9 of the remaining 11 locations all show journey time increases with the biggest being 27 minutes to Hamilton and 26 to Airdrie;
- Motherwell witnesses an 8-minute increase in travel time to Hamilton, while Shieldmuir witnesses significant increases in travel time to Airdrie 34 minutes and 39 minutes to Hamilton and Cumbernauld;
- To Ravenscraig in the PM peak sees a reduction in travel time of 9 minutes from Glasgow Central to Ravenscraig, but also shows an increase in travel time from Airdrie 20 minutes and Hamilton 15 minutes;



- Travel to Motherwell increases by 11 minutes from both Airdrie and Hamilton and Shieldmuir sees an increase in travel time from Airdrie (7mins), Glasgow Central (5mins) and Hamilton (8mins);

Option 7b:

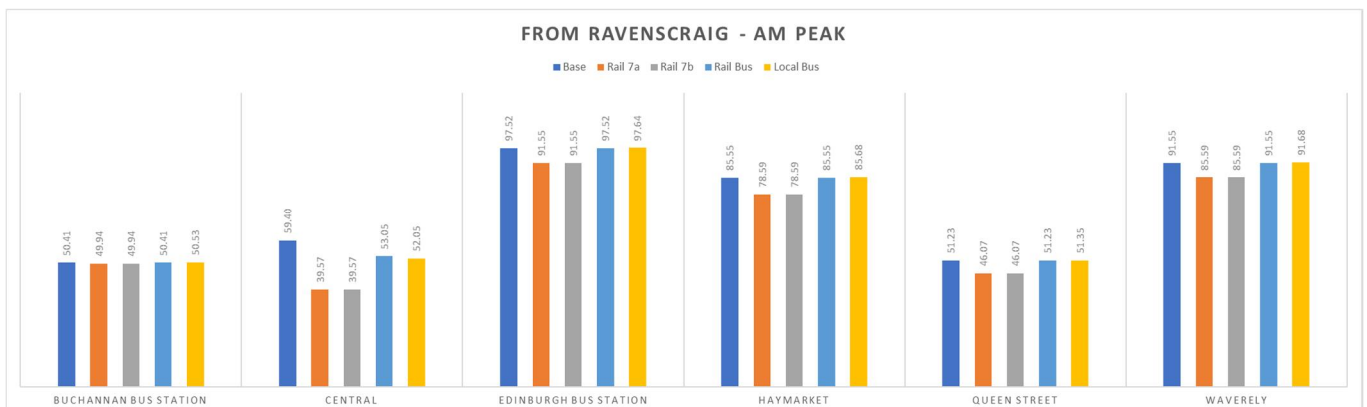
The key points from the analysis of option 7b are:

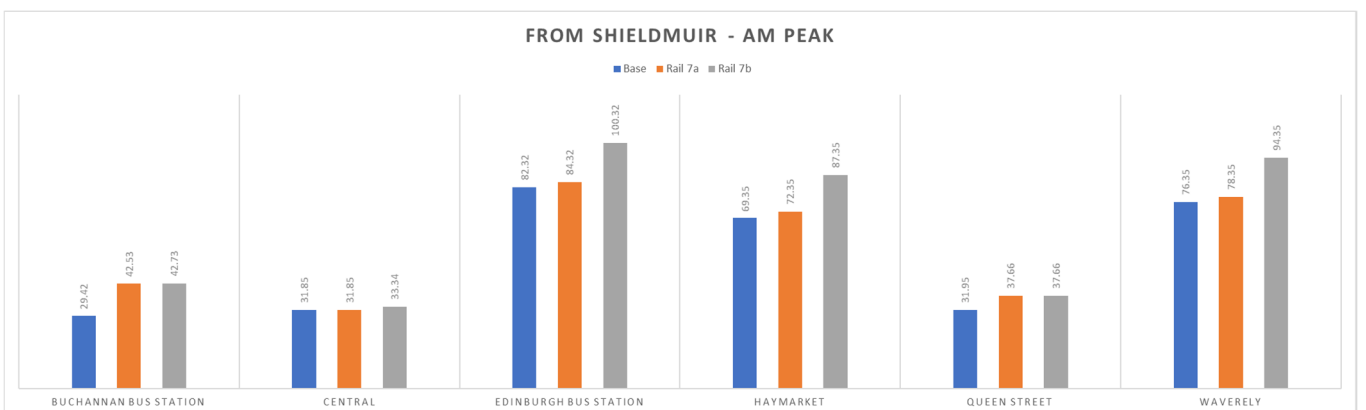
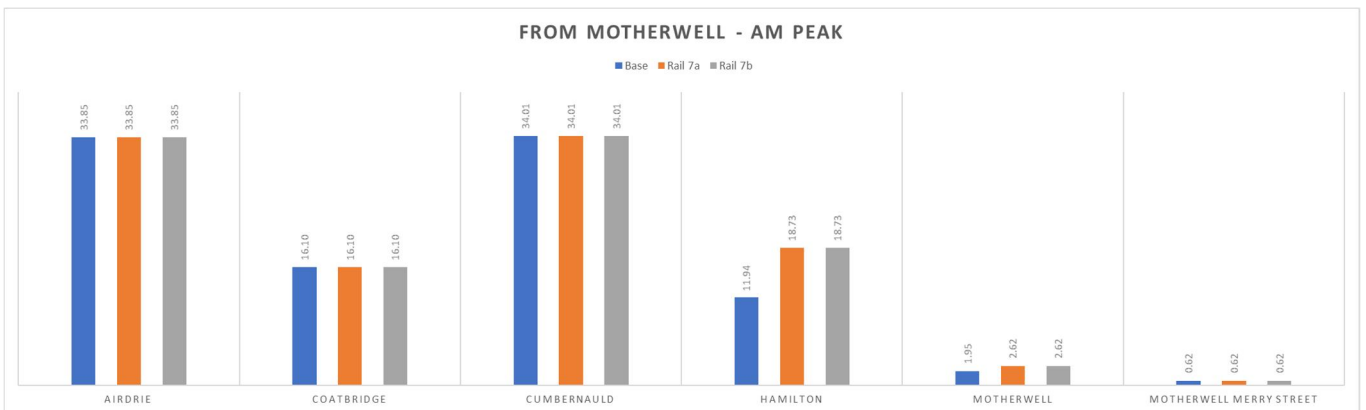
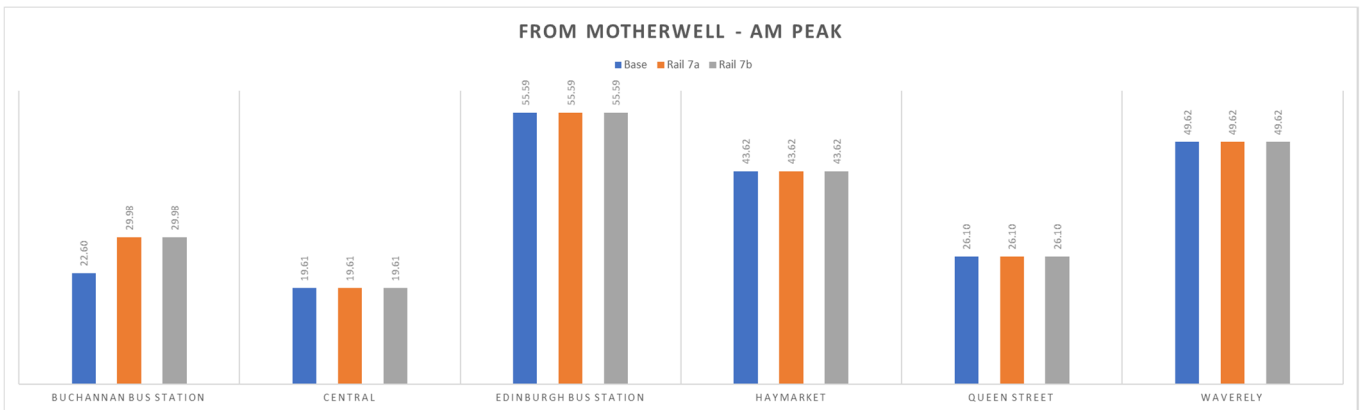
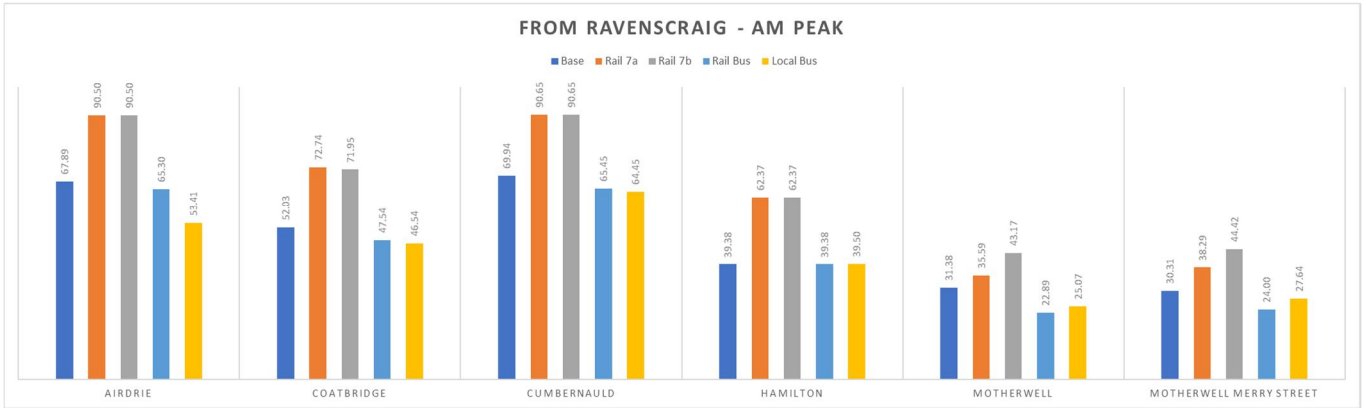
**AM**

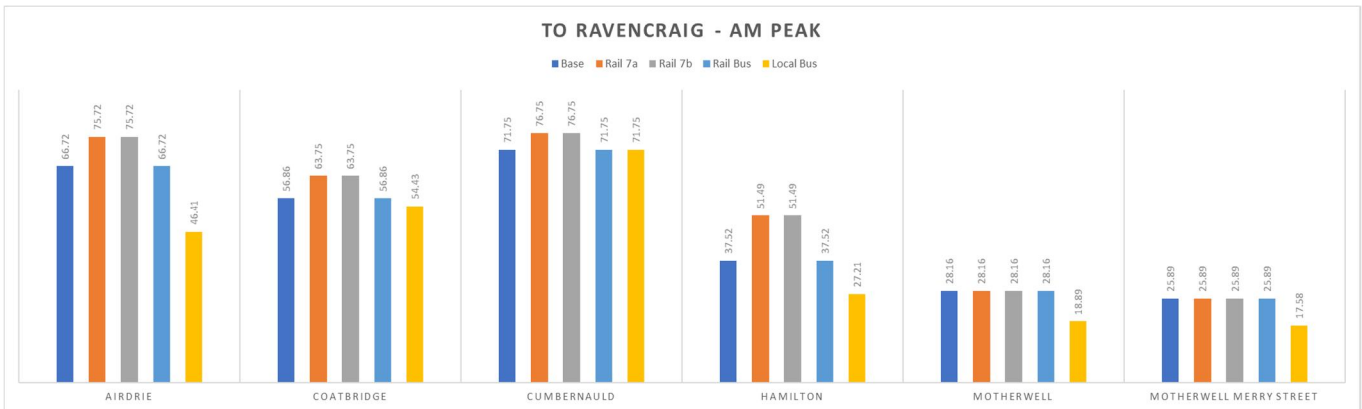
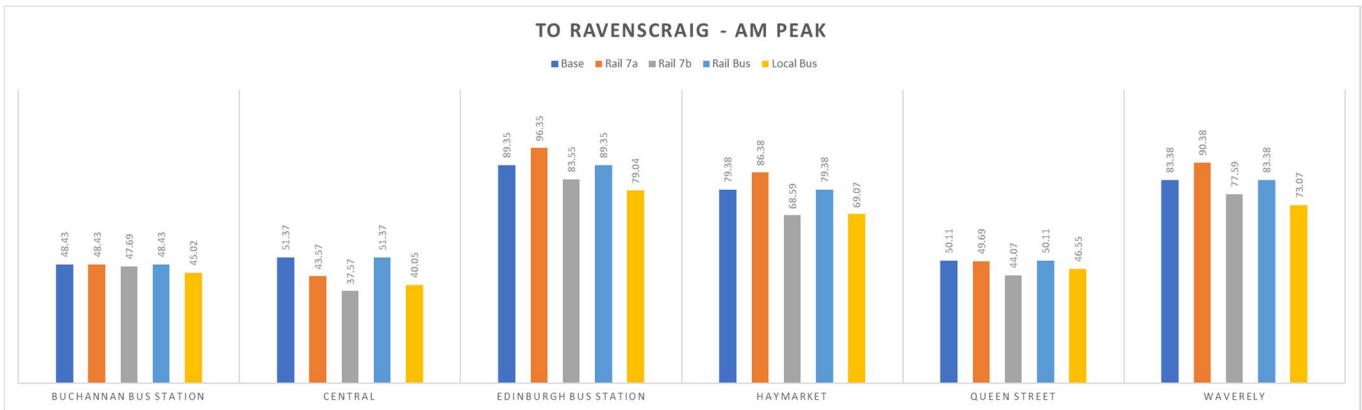
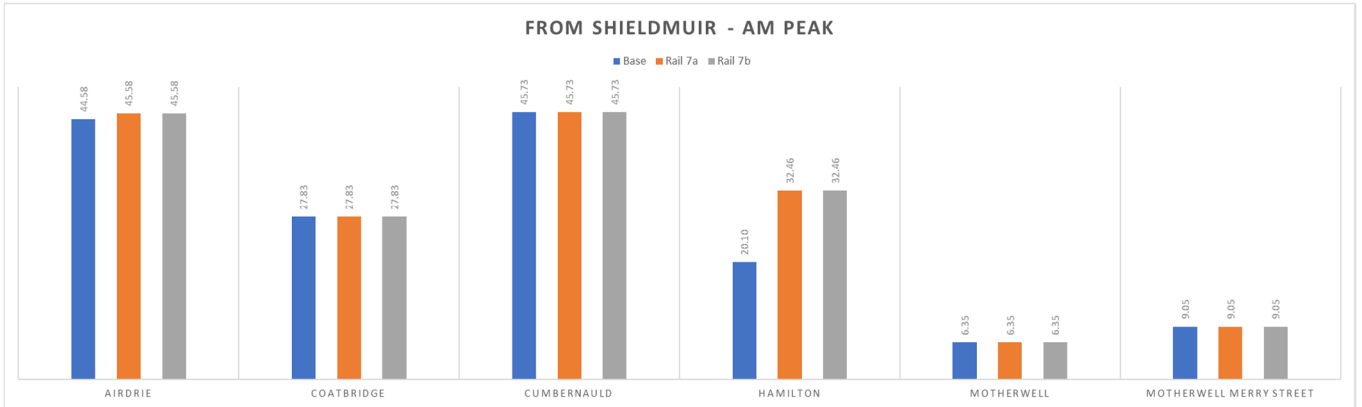
- In general, option 7b reflects a similar picture as option 7a for travel from Ravenscraig with a 14-minute reduction in travel time to Glasgow Central, however, there are also reductions in time from Ravenscraig to Haymarket (11mins) and Waverely (6mins)
- There are still increases in travel times to Airdrie (9mins), Coatbridge (7mins) and Cumbernauld (5mins) from Ravenscraig;
- Times to and from Motherwell are the same as under option 7a with increases from / to Hamilton;
- Shieldmuir witnesses significant changes in travel times both from and to in the AM peak. From Shieldmuir in the AM there are increases of 18 minutes to Edinburgh, and 12 minutes to Hamilton;
- To Shieldmuir in the AM there are increases to 10 of the 12 destinations with the largest of these being 18 minutes from Coatbridge, 14 minutes from both Glasgow Central and Cumbernauld and 13 and 12 minutes from Hamilton and Airdrie respectively.

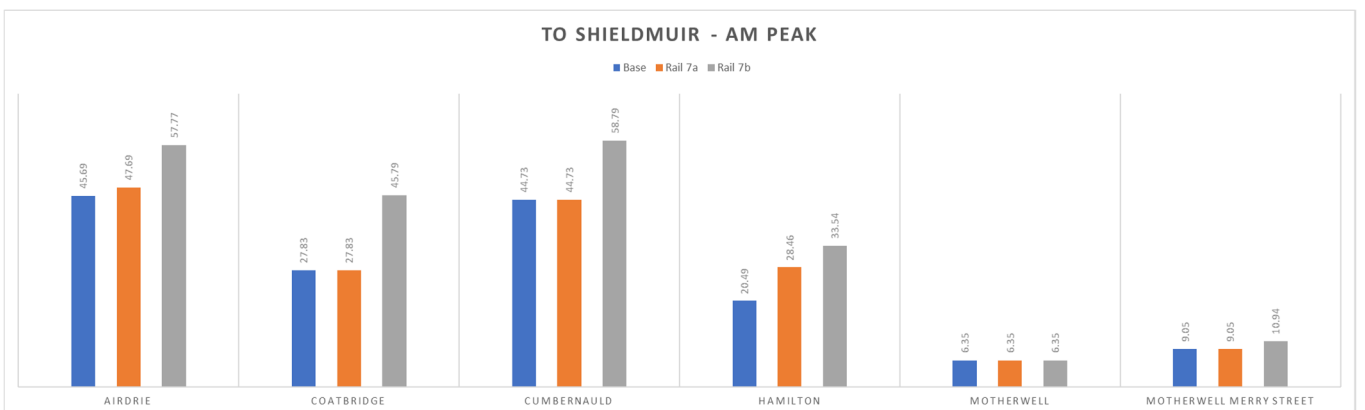
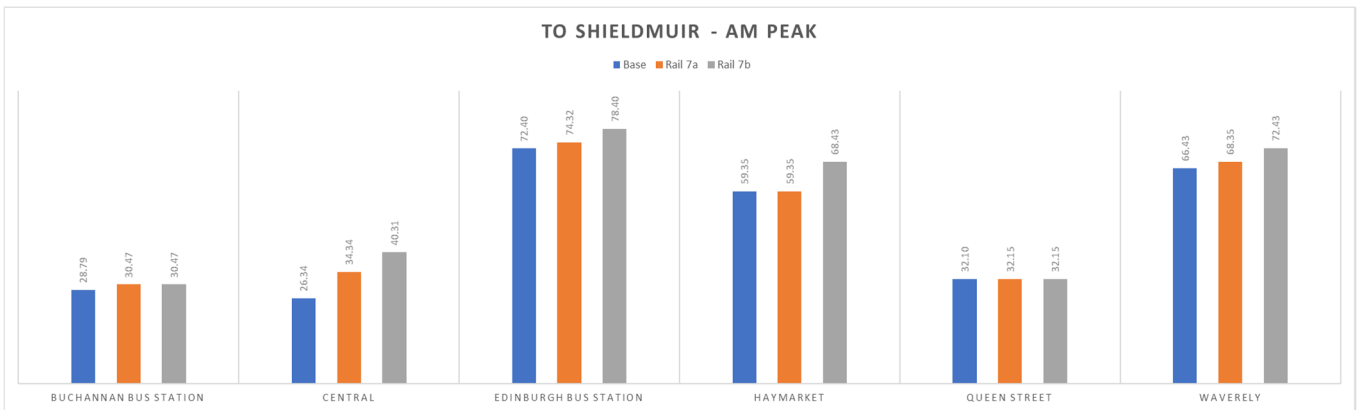
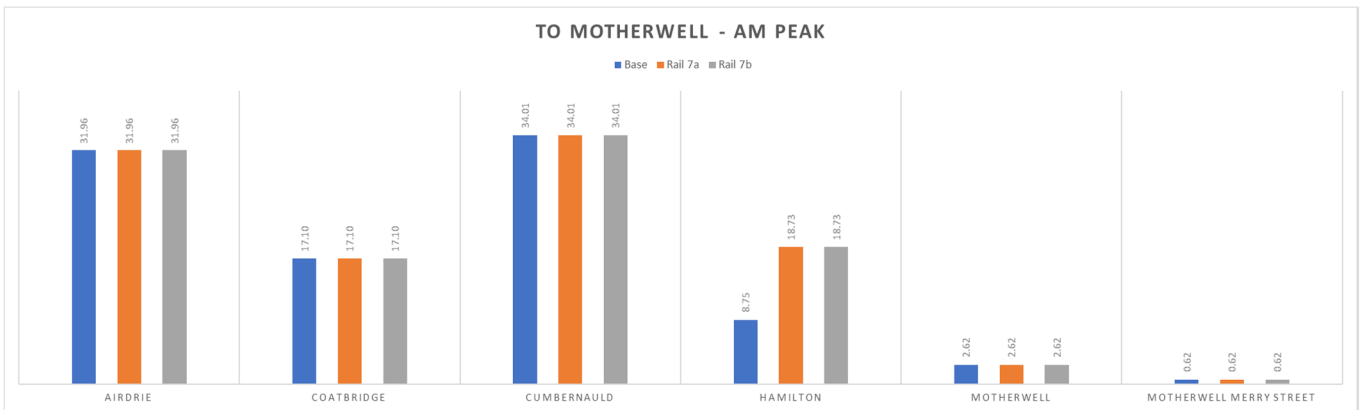
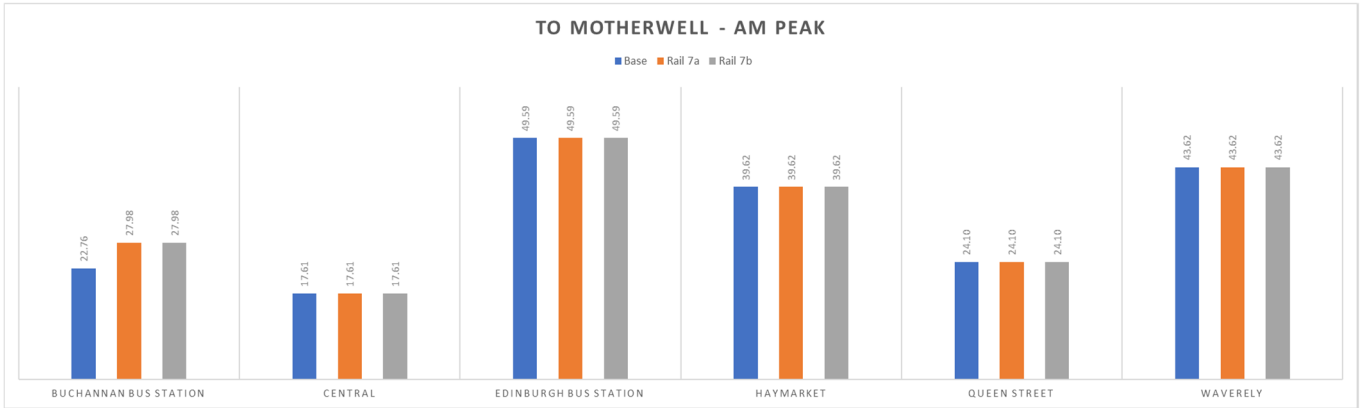
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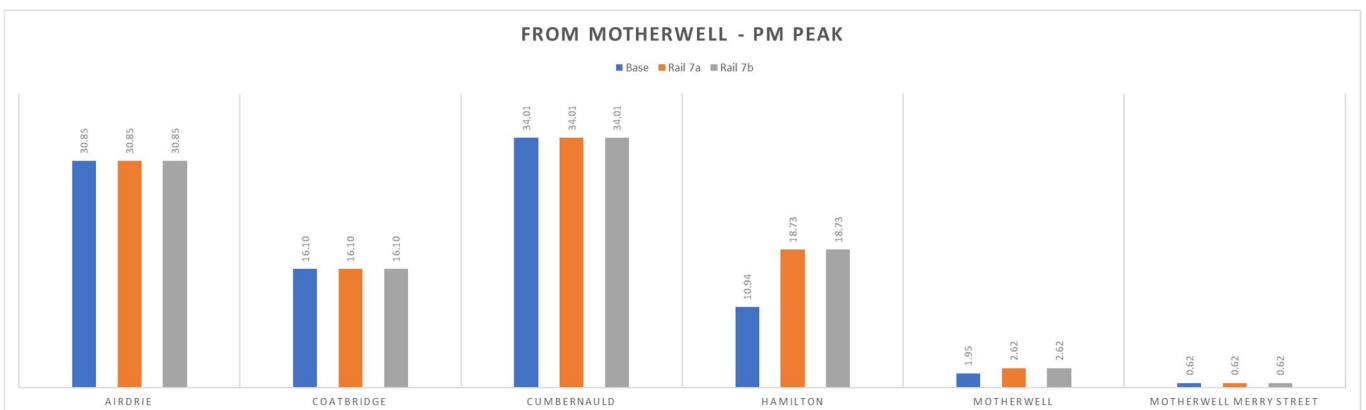
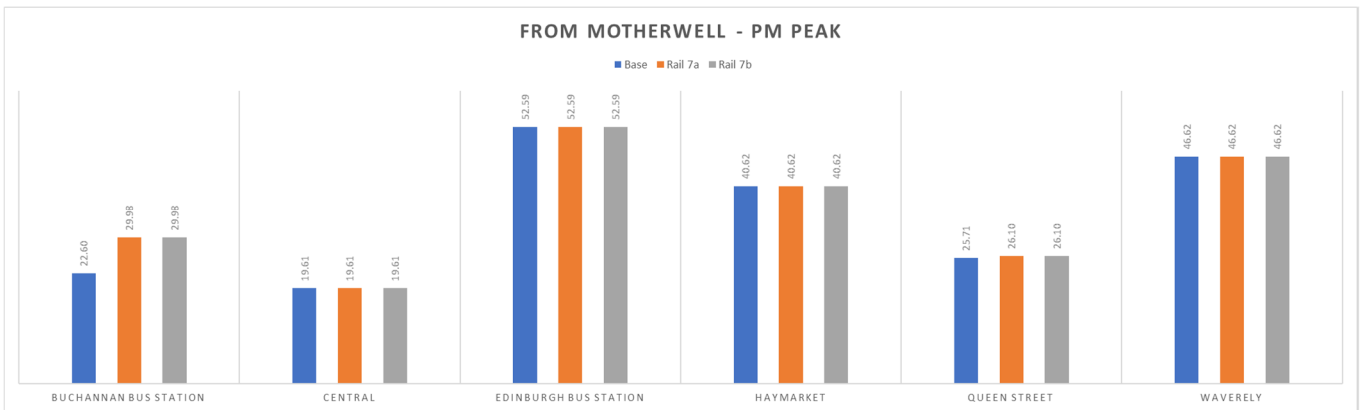
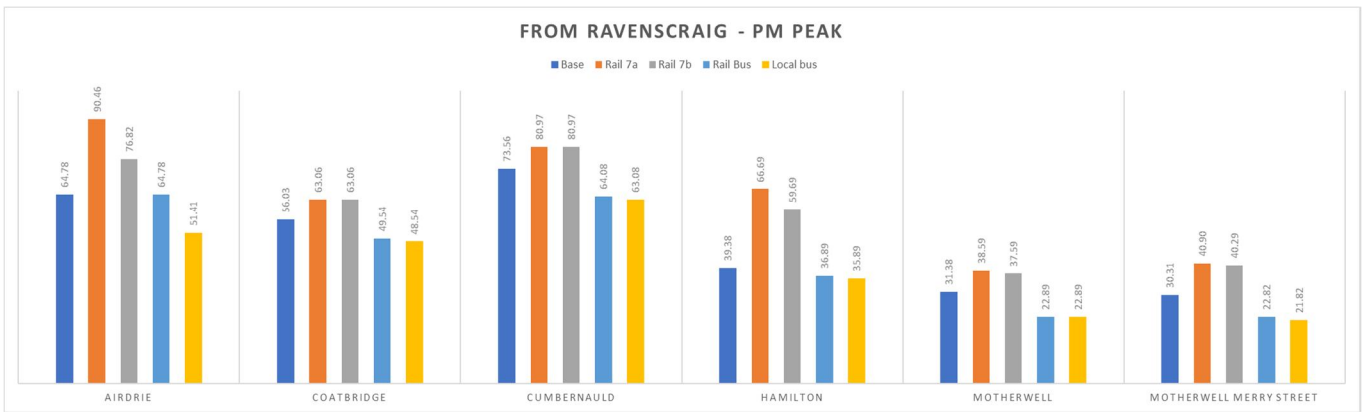
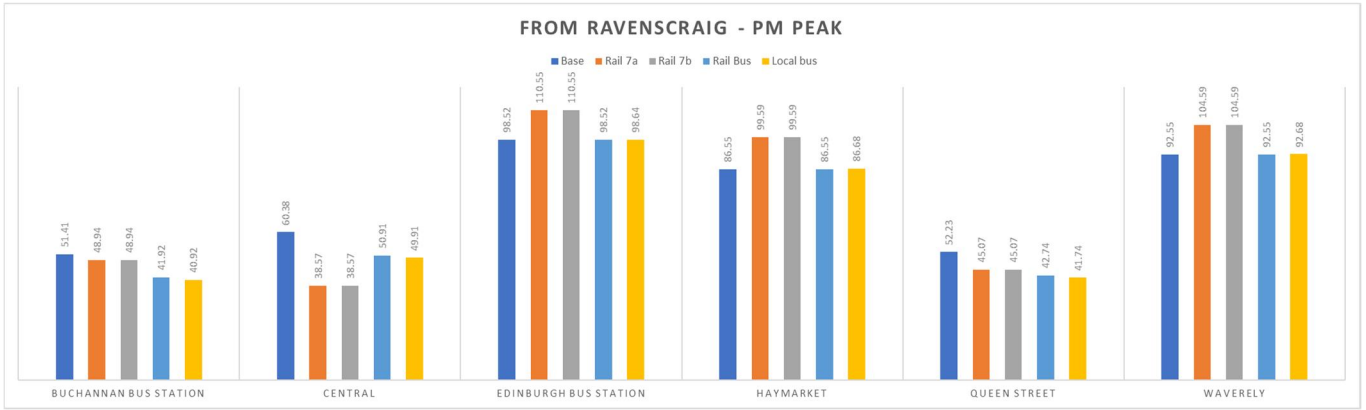
- Travel from Ravenscraig in the PM peak, shows a reduction of 22 minutes to Glasgow Central and increases to 9 of the remaining 11 locations, including 20 minutes increase to Hamilton, 13 minutes increase to Edinburgh and a 12-minute increase to Airdrie;
- To Ravenscraig shows a reduction in travel time from Glasgow (16mins), but increases of 20 minutes to Airdrie and 15 minutes to Hamilton;
- From Motherwell only shows an increase in travel time to Hamilton of 8 minutes, and no change in travel times to Motherwell;
- As with the AM peak, Shieldmuir shows some significant changes in travel times, including an increase of 53 minutes to Hamilton, 42 minutes to Airdrie, 39 minutes to Cumbernauld and 22 minutes to Glasgow Central;
- To Shieldmuir also highlights increases in travel time, with an additional 17 minutes from Airdrie to Shieldmuir, 13 from Hamilton and 10 minutes from both Coatbridge and Cumbernauld.

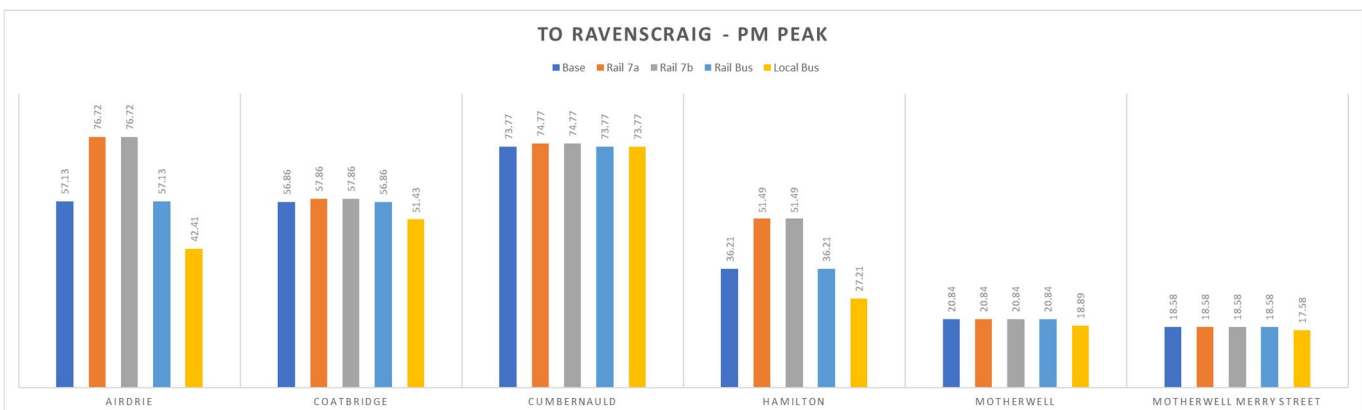
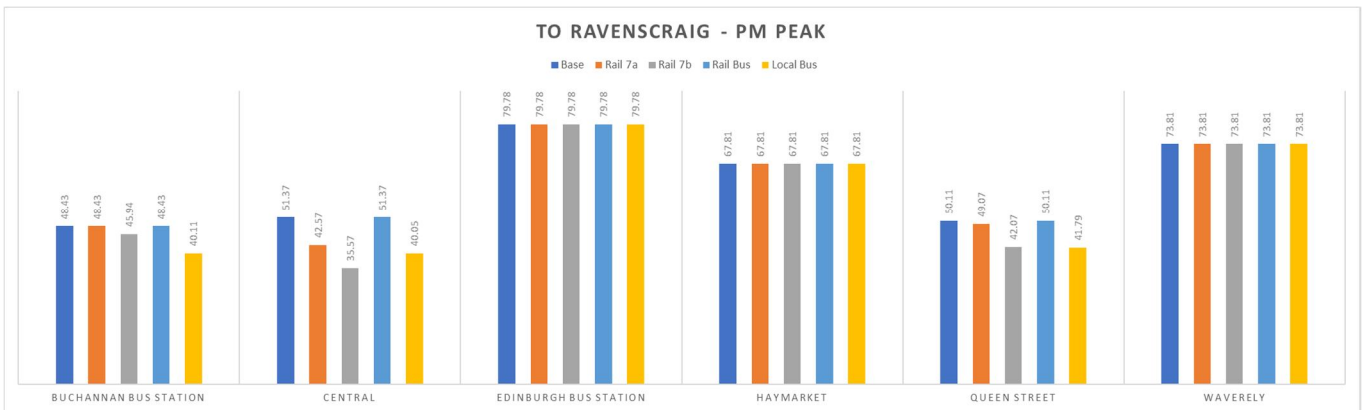
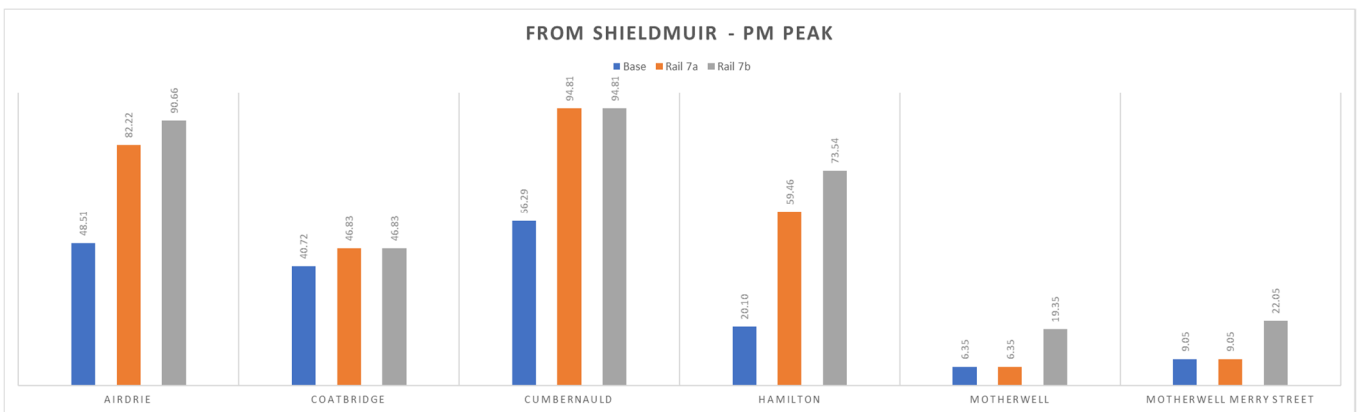
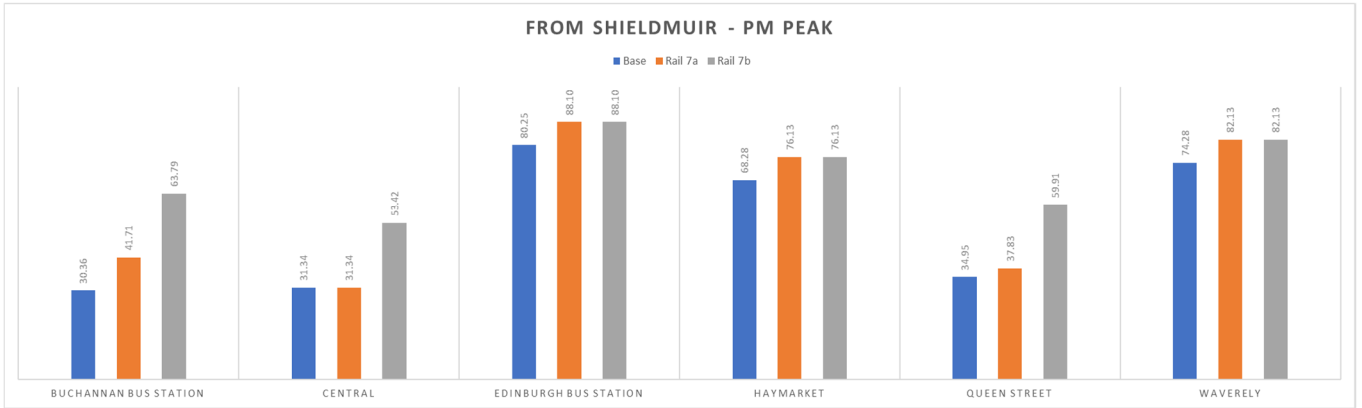


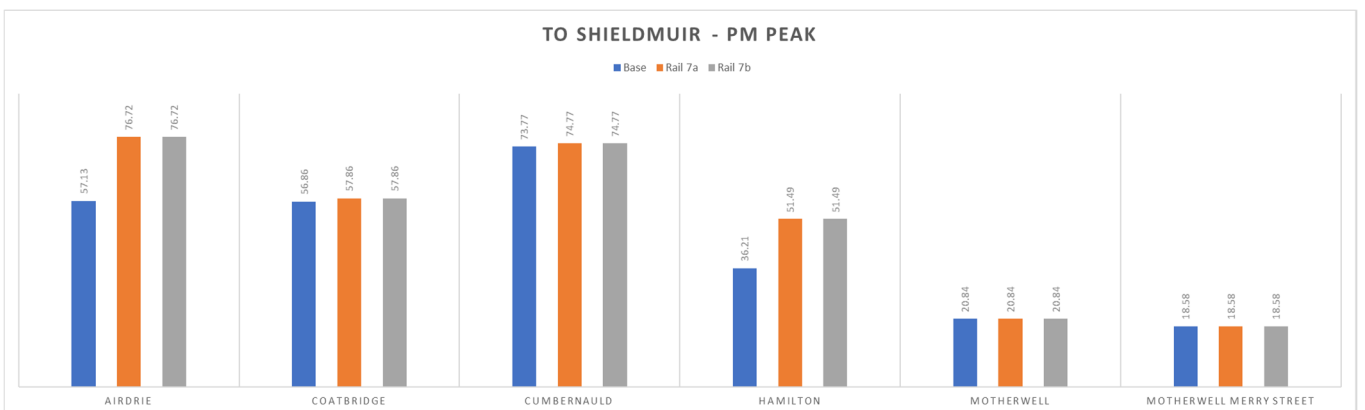
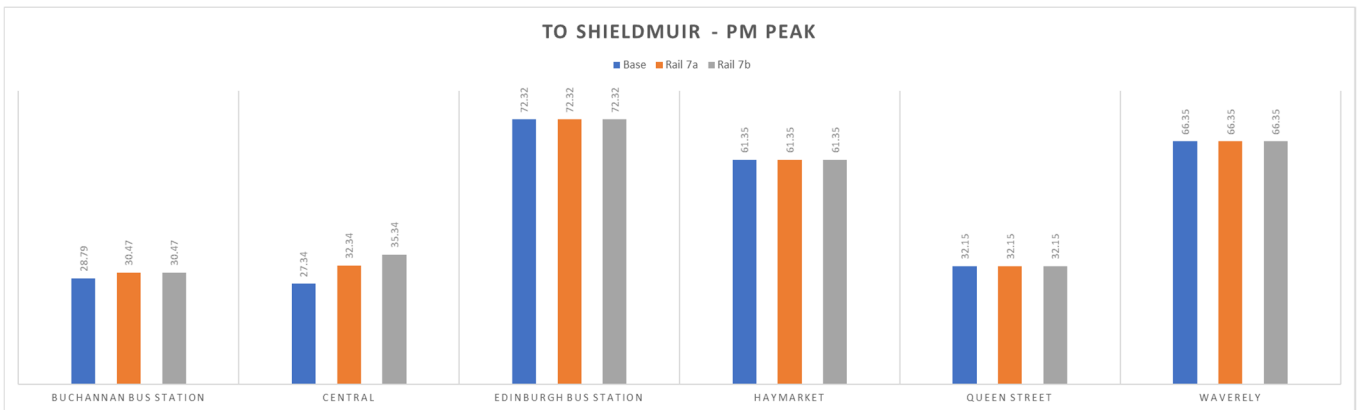
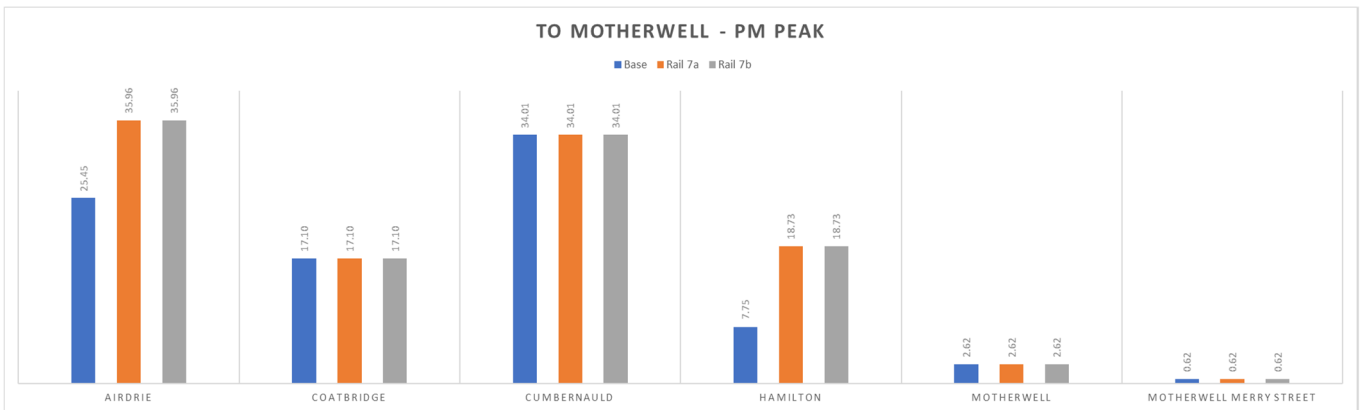
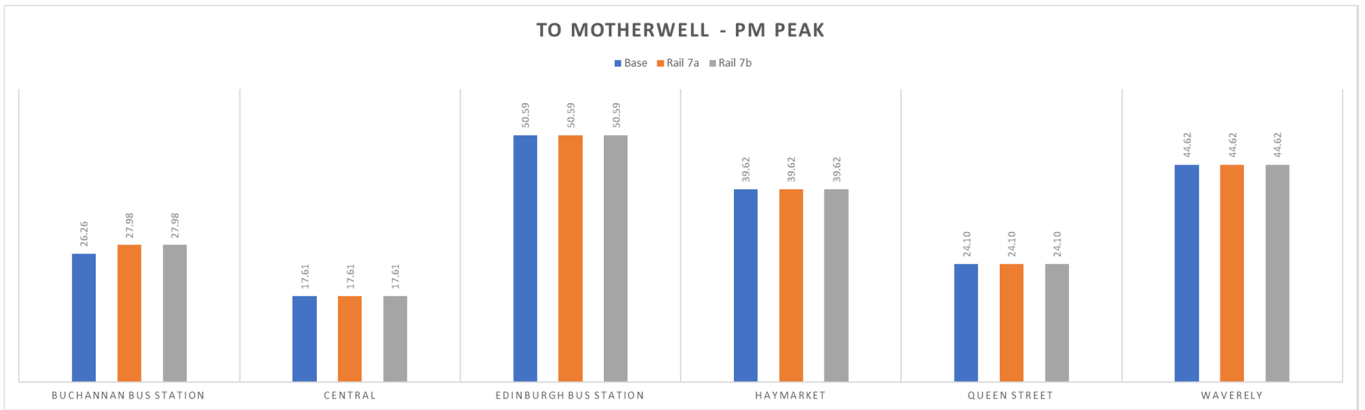












#### **B.1.4 Summary**

In summary, the analysis has shown that both options 7a and 7b have a significant negative impact on local accessibility with increases in journey times evidenced in both directions from / to Ravenscraig, Motherwell and Shieldmuir. If a rail option was to progress this would likely be option 7b and the accessibility analysis has shown that this would have negative impacts on the wider network accessibility. Option 3, Rail-Bus, provides moderate journey time savings for residents of Ravenscraig and Option 4 provides reduced journey times and improved connectivity along the north-south axis which was highlighted as a key problem throughout the appraisal process.



## Appendix C. Potential Demand

### C.1.1 Introduction

To support the Ravenscraig Part 1 appraisal, analysis was undertaken to comprehend changes to public transport accessibility as part of the implementation of any of the options and also a high-level calculation of likely patronage levels.

### C.1.2 Demand Calculations

As part of the Transport Assessment to support the planning application of the Ravenscraig site, two future years were identified as benchmarks to understand the level of impact the development would have on the local transport network. 2028 and 2045 were identified as these years. 2028 as this is when around half the site will be developed, the two new link roads would be in operation and employment would be located on the site. 2045 marks the completion and full build out of the site.

As part of the demand calculations the trip rates used in the TA for both these years were extracted and the number of people trips both to and from the Ravenscraig site for the AM and PM peak periods calculated as shown in the table below.

Year	AM from Ravenscraig (0700-1000)	AM to Ravenscraig (0700-1000)	PM from Ravenscraig (1600-1900)	PM to Ravenscraig (1600-1900)
<b>2028</b>	4,851	4,227	5,843	5,505
<b>2045</b>	9,554	9,384	12,647	12,378

Mode share values of 11% bus and 5% rail from the census 2011 data used in the Pre-Appraisal analysis was then used to calculate potential patronage for both bus and rail based travel from and to Ravenscraig.

2028	AM from Ravenscraig (0700-1000)	AM to Ravenscraig (0700-1000)	PM from Ravenscraig (1600-1900)	PM to Ravenscraig (1600-1900)
<b>Bus</b>	451	517	587	623
<b>Rail</b>	211	243	275	292

2045	AM from Ravenscraig (0700-1000)	AM to Ravenscraig (0700-1000)	PM from Ravenscraig (1600-1900)	PM to Ravenscraig (1600-1900)
<b>Bus</b>	1,001	1,019	1,320	1,349
<b>Rail</b>	469	478	619	632

### C.1.3 Summary

The above patronage values show that bus would be the preferred mode choice if mode share values continue to maintain a similar level as to that of the surrounding areas. Although the percentage share could decrease as a result of active travel enhancements. Based on current rail patronage figures Shieldmuir has approximately 440 passengers daily and Motherwell approximately 5,300 passengers daily. Both stations have witnessed year on year growth and this is likely to continue with further enhancements to the network. As such it demonstrates that even at full build out, Ravenscraig would not produce the same level of trips as both these current stations do combined. This further evidences that option 6 would require subsidies if the Lanark service as to be rerouted and missed out calls at Shieldmuir and Motherwell.