# Strategic Environmental Assessment Report

**Environmental Report for Consultation**

East Airdrie Link Road Scheme
North Lanarkshire Council

15th August 2022

Delivering a better world

## Quality information

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## Revision History

| Revision | Revision date | Details | Authorized | Name | Position |
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# 1. Introduction

## 1.1. Background

1.1.1. The East Airdrie Link Road scheme is a significant sub-project of the Pan-Lanarkshire Orbital Transport Corridor Project. As part of Glasgow City Region City Deal, a £1.13bn infrastructure investment programme, the Pan Lanarkshire orbital transport corridor ('Pan-Lan') will create new and upgraded transport infrastructure in North Lanarkshire.

1.1.2. The Pan-Lanarkshire Orbital Transport Corridor Project seeks to deliver the transport infrastructure needed to improve connectivity between centres of population and employment sites in North Lanarkshire, unlocking the economic development potential of the former steelworks site of Ravenscraig, now a strategic economic investment location with national development status[1].

1.1.3. The Pan-Lanarkshire Orbital Transport Corridor Project will provide:

- New and upgraded road infrastructure on an orbital route from the M74 at Motherwell, through the strategic economic investment site of Ravenscraig to the M8 at Eurocentral/Newhouse Industrial Estate/Chapelhall and onward past Airdrie via a new link road, to connect with the A73 to the south of Cumbernauld.
- An improved public transport interchange at Motherwell train station, incorporating access improvements, enhanced public realm, park and ride expansion and active travel links.
- The spine of North Lanarkshire's Active Travel Network (north/south).

1.1.4. Together with South Lanarkshire's planned City Deal investment to upgrade Stewartfield Way and Greenhills Road/A736, and SPT's Bus Investment Programme to improve sustainable transport options and orbital connections, the Pan-Lanarkshire Orbital Transport Corridor Project will play a key role in providing the links needed to unlock commercial and housing development across the Local Authority area.

1.1.5. Together it is expected that these projects will enhance the economic growth potential of North Lanarkshire and the larger Glasgow City Region.

1.1.6. AECOM has been commissioned to undertake a Strategic Environmental Assessment (SEA) of North Lanarkshire Council's emerging East Airdrie Link Road scheme.

[1] See Annex A ('National Developments') of the National Planning Framework (NPF3) (Scottish Government, 2014)

# 2. Background to the SEA

## 2.1. Strategic Environmental Assessment (SEA)

2.1.1. Strategic Environmental Assessment (SEA) is a mechanism for considering and communicating the potential impacts of emerging plans and programmes, and potential alternatives in terms of key environmental (and more broadly, 'sustainability' issues).

2.1.2. The Environmental Assessment (Scotland) Act 2005 transposes the requirements of the European Community SEA Directive (2001/42/EC). Under the Environmental Assessment (Scotland) Act 2005, those bodies preparing qualifying Scottish plans are required to undertake a SEA of plans that are likely to have significant environmental effects, if implemented.

2.1.3. SEA Guidance and specific environmental theme guidance will be used in conjunction with the SEA objectives to assess the Scheme Options. The assessment will be summarised for each SEA theme with a colour-coded scoring of each corridor option, and accompanied by a narrative that provides the rationale to the scoring. Due to the strategic nature of the SEA and the significant land area covered by the study, the assessment and narrative will necessarily be high-level.

2.1.4. Following the assessment, any potentially negative impacts identified will be discussed with the project team to consider a reasonable alternative in the context of the scheme objectives, and effective mitigation or enhancement recommendations. Recommendations will respond not only to direct impacts but also indirect, secondary, and cumulative impacts.

2.1.5. Cumulative impacts will be considered at both intra-plan (the impact of a combination of interventions) and the inter-plan (the impact of the plan alongside other plans and policies). The inter-plan assessment will be undertaken towards the end of the assessment when the preferred Scheme Option is available to consider alongside relevant national level policy/strategy.

2.1.6. The SEA aims to offer greater protection to the environment by ensuring public bodies (in this case, North Lanarkshire Council) and those organisations preparing plans of a 'public character' consider and address the likely significant environmental effects.

2.1.7. The SEA is developed to incorporate the feedback from statutory Consultation Authorities. The Scottish statutory Consultation Authorities are:

- Scottish Environment Protection Agency (SEPA);
- NatureScot; and
- Historic Environment Scotland (HES).

2.1.8. The role of the Consultation Authorities within SEA is to bring their individual environmental expertise to the assessment process. This can help to ensure that the future consultation process undertaken by a Responsible Authority (in this case North Lanarkshire Council) is more robust. This in turn means that the public can gain a better understanding of the likely effect of

a plan on the environment and meaningfully contribute to the plan's preparation process by offering an informed view (Scottish Government, 2013).

2.1.9. In the case of the East Airdrie Link Road Scheme an SEA was not previously carried out for the Scheme at an emerging plan or programme level and as such this SEA has been undertaken at a scheme level to ensure the Scheme is compliant with the requirements of the Environmental Assessment (Scotland) Act 2005.

2.1.10. An environmental options assessment for the Scheme was previously carried out in line with the Design Manual for Roads and Bridges (DMRB) guidance documents[2]. In 2020, eight strategies underwent DMRB Stage 1 'Preliminary Assessment'. A DMRB Stage 2 'Route Options Assessment' assessment of five shortlisted options is currently being carried out.

## 2.2. Strategic Environmental Assessment (SEA) Scoping

2.2.1. The purpose of the SEA scoping stage was to describe the environmental context, by establishing the relevant baseline information, reviewing other plans, programmes, and strategies (PPS) and identifying environmental problems and opportunities. The scoping stage was informed by environmental workshops and engagement carried out as part of the scheme development and DMRB options assessment, as described in Section 4 (Consultation and Stakeholder Engagement).

2.2.2. The Scoping Report was intended to provide sufficient information about the East Airdrie Link Road Scheme and the relevant environmental baseline and PPS to allow the Consultation Authorities to provide an informed view regarding the environmental themes to be included in the SEA. The Scoping Report also provided a proposed methodology to be used for assessing these potential environmental effects.

2.2.3. The Scoping Report was submitted to Scotland's SEA Gateway for a statutory five-week consultation in January 2022. Section 4 (Consultation and Stakeholder Engagement) describes this and other SEA consultation requirements.

2.2.4. Feedback from the Consultation Authorities on the baseline, PPS and proposed methodology provided in the Scoping Report have been responded to in this Environmental Report and the responses are summarised in Appendix A 'Summary of Consultation'.

2.2.5. The approach to the remaining SEA stages after scoping, including this Environmental Report stage, is described in Section 7 (SEA Approach and Methodology).

## 2.3. SEA Requirements

2.3.1. The primary purpose of this SEA is to explore the potential for the East Airdrie Link Road scheme to lead to positive or negative significant environmental effects. The key stages of SEA for the East Airdrie Link road scheme are:

- SEA Scoping (complete)

[2] The full suite of Design Manual for Roads and Bridges (DMRB) guidance documents can be found here: https://www.standardsforhighways.co.uk/dmrb/

- Draft Environmental Report (this stage) - The assessment stage establishes the likely significant (positive and negative) environmental effects of implementing the East Airdrie Link Road scheme. As well as any potential reasonable alternatives considered at this stage, along with viable mitigation measures to avoid, reduce or offset adverse effects. The assessment and a summary of key findings have been included in the Draft Environmental Report (this document), which will be available for consultation.
- SEA Post Adoption Statement – This statement will be produced after the East Airdrie Link Road scheme has been adopted. It will outline how the assessment and consultation responses relating to the SEA have been considered within the finalised East Airdrie Link Road scheme. It will also include the final environmental monitoring programme for the East Airdrie Link Road scheme implementation.
- Monitoring - Any significant environmental effects predicted in the SEA will need to be monitored, according to the monitoring programme set out in the Post Adoption Statement, and remedial action taken in response to the monitoring, where required.

## 2.4. Purpose of the Environmental Report

2.4.1. The Environmental Report includes an assessment of the likely significant effects of the scheme and described the reasons for selecting the preferred route option compared to the alternatives. It also includes mitigation measures and a monitoring framework.

2.4.2. The Environmental Report needs to describe any potentially significant effects on sites designated under Council Directive 79/409/EEC on the conservation of wild birds and Council Directive 92/43/EEC on the conservation of natural habitats and of wild flora and fauna, as amended. However, the Habitats Regulation Appraisal of the Proposed Scheme will describe these effects in more detail.

2.4.3. The Environmental Report must provide an appropriate level of detail, and consider how best to provide consultees with a clear insight into the relevant environmental information that has emerged from the assessment.

2.4.4. This Environmental Report responds to feedback received from the consultation on the Scoping Report, and includes an appendix that shows how each feedback suggestion has been responded to. This is provided as Appendix A (Summary of Consultation) to this report.

## 2.5. Related Assessments

***Habitat Regulations Appraisal (HRA)***

2.5.1. The EU Council Directive 92/43/EEC on the Conservation of Natural Habitats and of Wild Fauna and Flora (hereafter referred to as the Habitats Directive) was adopted in 1992 (as amended). The primary aim of the Habitats Directive is to promote the maintenance of biodiversity by requiring Member States to take measures to maintain or restore natural habitats and wild species of European interest listed in the Annexes to the Directive at a favourable conservation status. It also introduces robust protection for those habitats and species of European importance.

2.5.2. Article 6(3) of the EC Habitats Directive requires that any plan which is not directly connected with or necessary to the management of a European site, but may be likely to have a significant effect on such a site, either individually or in combination with other plans or projects, shall be subject to an 'appropriate assessment' of its implications for the European site in view of the site's conservation objectives. The application of the precautionary principle is implicit in the Habitats Directive, which requires that the conservation objectives of Natura 2000 should prevail where there is uncertainty (European Commission 2001). Where scientific information is insufficient, inconclusive, or uncertain, the precautionary principle is applied. This procedure is applied in Scotland through The Conservation (Natural Habitats, &c.) Regulations 1994 (as amended), and is known as the 'Habitats Regulations Appraisal' (HRA) of plans. These regulations will remain in place post 31st December 2020 with only minor changes being introduced by the Conservation (Natural Habitats, &c.) (EU Exit) (Scotland) (Amendment) Regulations 2019.

2.5.3. These European sites include Special Areas of Conservation (SACs) designated under the Habitats Directive (92/43/EEC) and Special Protection Areas (SPAs) designated under the Birds Directive (2009/147/EEC). In addition, Candidate and Possible SACs, Potential SPAs and Ramsar wetlands (designated under the Convention on Wetlands of International Importance) should be included in appraisals as they are afforded the same level of protection as European sites under domestic policy. European sites are designated due to the presence of specific habitats and species of internationally important biodiversity value, otherwise known as 'qualifying interest features.'

2.5.4. Each stage in the development of the East Airdrie Link Road scheme will be reviewed to determine if there might be any potential indirect or direct significant effects on European sites. Discussions with NatureScot and refinement of the HRA approach will continue throughout the progression of the East Airdrie Link Road scheme. Any HRA reports would be produced independently of the SEA.

***Equality Impact Assessment (EqIA)***

2.5.5. The public sector equality duty was created by the Equality Act 2010, and replaces the race, disability and gender equality duties. It is supported by the specific duties contained in The Equality Act 2010 (Specific Duties) (Scotland) Regulations 2012 as amended. Section 149 of the Act imposes a duty on 'public authorities' and other bodies when exercising public functions to have due regard to the need to:

1. eliminate discrimination, harassment, victimisation and any other conduct that is prohibited by or under the Act
2. advance equality of opportunity between persons who share a relevant protected characteristic and persons who do not share it
3. foster good relations between persons who share a relevant protected characteristic and persons who do not share it.

2.5.6. Scottish Government guidance is that an Equality Impact Assessment (EqIA) should be undertaken to assess the impact of new or revised policies, practices or services against the requirements of the public sector equality duty.

2.5.7. At each stage in the development of the East Airdrie Link Road scheme the EqIA will be reviewed to determine if there might be any additional potential negative impacts should be identified along with how these might be best eliminated or mitigated, and opportunities to advance equality of opportunity.

## 2.6. Report Structure

2.6.1. The information in this Environmental Report has been presented through the following SEA themes:

- Biodiversity, Flora and Fauna;
- Population and Human Health;
- Water;
- Soil;
- Air;
- Climatic Factors;
- Material Assets;
- Cultural Heritage; and,
- Landscape.

2.6.2. The selected SEA themes incorporate the SEA 'issues' suggested by Schedule 3 (6) of the Environmental Assessment (Scotland) Act 2005 Regulations. All of the SEA Directive 'issues' have been "scoped-in" to the SEA and are considered in this report. Inter-relationships between the SEA themes have also been considered in this report.

2.6.3. The Environmental report has been structured as follows:

- **Section 1** (Introduction) - Summarises the general background to the East Airdrie Link Road scheme.
- **Section 2** (Background to the SEA) - Sets out the background to SEA, SEA scoping and the structure of this report.
- **Section 3** (Legislative and Policy Context) - Shows the key relationships between the East Airdrie Link Road scheme and other Plans, Policies and Strategies (PPS), including their associated environmental requirements.
- **Section 4** (Consultation and Stakeholder Engagement) - Described the approach to stakeholder engagement throughout the development of the East Airdrie Link Road scheme.
- **Section 5** (Development of Options) – Provides an overview of the preliminary appraisal process and its outcomes, including details of the methodology and scoring criteria for each environmental theme.
- **Section 6** (Description of Options) – Provides a description of the Scheme Options.
- **Section 7** (SEA Approach and Methodology) – Sets out the approach for undertaking the SEA.
- **Section 8** (Environmental Assessment) - Summarises the impact assessments undertaken for each Scheme Option according to each environmental theme.

- **Section 9** (Inter-relationships and Cumulative Effects) - Outlines key inter-relationships between SEA themes and presents the cumulative effects assessment undertaken for the project.
- **Section 10** (SEA Findings and Recommendations) - Summarises the outcomes of the SEA process, including key mitigation and enhancement recommendations
- **Section 11** (SEA Mitigation and Monitoring) - Proposes measures to mitigate the effects of the environmental impacts set out in Section 8.
- **Section 12** (Next Steps)

# 3. Legislative and Policy Context

## 3.1. Policy Context

3.1.1. The East Airdrie Link Road Scheme is being developed in the context of plans, policies, and strategies (PPS) from national, regional and local strategic levels in Scotland. A comprehensive review of PPS from national, regional and local strategic levels is provided in Appendix B (Plans, Policies and Strategies Review).

3.1.2. At a national and regional level, the most relevant and closely linked PPS are summarised below.

## 3.2. National Plans, Policies and Strategies

***National Planning Framework 3 (NPF3) (Scottish Government, 2014a)***

3.2.1. The National Planning Framework 3 (NPF3) was published in 2014 by the Scottish Government and outlines the key principles that guide the wider planning system in Scotland. NPF3 guides Scotland's spatial development for the next 20 to 30 years, setting out strategic development priorities to support the Scottish Government's central purpose of promoting sustainable economic growth. NPF3 directly influences the goals and themes of regional and local planning policy due to the planning policy hierarchy.

3.2.2. With regard to transport and infrastructure, NPF3 acknowledges that improved internal transport links are necessary to facilitate growth and highlights under its key theme "A Connected Place" that the Scottish road network in some cases requires *"upgrading to provide sufficient capacity, reduce congestion and address safety issues"* (Page 52).

3.2.3. A new National Planning Framework, NPF4, is currently in development. NPF4 will incorporate Scottish Planning Policy (SPP) in order to address both spatial and thematic planning policies in one cohesive document. Consultation on the draft NPF4 concluded on 31st March 2022.

3.2.4. It is anticipated that a final version of NPF4 will be adopted in Summer 2022. NPF3 and SPP will remain as current policy until final approval of NPF4.

***Infrastructure Investment Plan (IIP) (Scottish Government, 2015a)***

3.2.5. The Infrastructure Investment Plan (IIP) published in 2015 sets out why the Scottish Government invests, how it invests and where it intends to invest in up to 2035 by sector. It is intended to support the objectives set out in Scotland's Economic Strategy and the Programme for Government. The IIP recognises that *"investment in transport across Scotland will deliver the best possible connectivity across the roads and public transport network, improving journey times and tackling inequality by improving accessibility of services and opportunities"* (Page 21).

***Scotland's Economic Strategy (Scottish Government, 2015b)***

3.2.6. The Scottish Government's Economic Strategy sets out four principles, with associated actions, to ensure economic growth is shared and sustainable.

3.2.7. A key strategic priority in the policy is 'investing in our people, infrastructure and assets in a sustainable way', this priority recognises the importance of investment in infrastructure to drive competitiveness and create opportunities.

3.2.8. It also recommends that "investment must be sustainable, not only in terms of tackling emissions, enhancing our natural capital and supporting the transition to a low carbon economy, but also through ensuring the sustainability of our communities" (Page 37).

***National Transport Strategy 2 (NTS2) (Transport Scotland, 2020)***

3.2.9. The National Transport Strategy (NTS2) provides a vision and associated long-term key strategy objectives and outcomes for transport in Scotland over the next 20 years.

3.2.10. NTS2 sets the following vision for transport in Scotland: "We will have a sustainable, inclusive, safe and accessible transport system, helping deliver a healthier, fairer and more prosperous Scotland for communities, businesses and visitors" (Page 5).

3.2.11. The vision is underpinned by four Priorities:

- Reducing inequalities through the provision of fair, easy and affordable access to transport services.
- Taking climate action by ensuring Scotland's transport system helps deliver the Scottish Government's net-zero carbon emission target by 2045, adapts to the effects of climate change and promotes the use of sustainable travel options.
- Delivering inclusive economic growth by ensuring Scotland's transport network and services will be effectively integrated with spatial and land use planning and economic development, adapt to the changing requirements of citizens, businesses and visitors, provide reliable journey times, and use new and innovative products, services and technologies.
- Improving health and wellbeing by prioritising the prevention and reduction of incidents, promoting active travel and creating cleaner and greener places and networks within the transport system.

***The Infrastructure Commission for Scotland Findings Report (Infrastructure Commission for Scotland, 2020)***

3.2.12. The Infrastructure Commission for Scotland (ICS) was established in early 2019 to provide independent advice to Scottish Ministers on a 30-year vision of infrastructure for Scotland by the end of 2019, and to consider options for delivery by June 2020.

3.2.13. ICS' commission was to focus primarily on infrastructure's role to achieve an inclusive net zero carbon economy. This supports the holistic goal of enhancing wellbeing over more narrowly defined measures of economic success such as Gross Value Added (GVA) or Gross Domestic Product (GDP).

3.2.14. The Phase 1: Key Findings Report provides context and key policy drivers, sector summaries and cross-cutting recommendations.

3.2.15. The Transport Sector Summary, states that "there are currently some 48 billion vehicle kilometres driven on Scotland's roads annually" and that "private cars account for the highest

users of the network (75% of distance travelled) followed by light goods vehicles (17%), heavy goods vehicles (5%) and public transport (2%)" (Page 58).

3.2.16. The key challenge that is faced by the transport sector is "ensuring an appropriate level of effective and efficient connectivity in Scotland to enable: people to move around; business to access markets; and, the movement of goods, but in a way that delivers a net-zero carbon inclusive growth economy" (Page 60). In order to achieve these goals "policies focused on delivering an inclusive net zero carbon economy must not focus solely on zero emission vehicles or connected and autonomous vehicles, but for also on the opportunities for shared mobility and on-demand services as well as a much greater role for evolved public transport in the overall provision of mobility" (Page 62).

3.2.17. The Phase 2: Delivery Findings Report further discusses the key recommendations of the Phase 1 Report and considers the options for their delivery. Three particular areas were identified for *"detailed investigation during Phase 2, namely: prioritising an inclusive net zero carbon economy and a long-term approach to infrastructure strategy, how best to optimise the impact of infrastructure in enabling sustainable places; and, delivering a thriving construction sector through enhancing the interaction between the public sector and industry"* (Page 4).

## 3.3. Regional Plans, Policies and Strategies

***A Catalyst for Change: Regional Transport Strategy for the west of Scotland 2008-21 (SPT, 2008)***

3.3.1. Strathclyde's Partnership for Transport's (SPT) Regional Transport Strategy (RTS) provides a strategic framework for transport management and investment in the SPT area over a 13-year period. The RTS sets the following vision for Transport in the SPT area: "a world class sustainable transport system that acts as a catalyst for an improved quality of life for all" (Page 5).

3.3.2. The SPT RTS has four Strategy Outcomes with associated indicators to measure achieve towards these outcomes:

- "Improved Connectivity: The west of Scotland has a transport system that underpins a strong, sustainable economy.
- Access for All: The west of Scotland has a transport system that is safe, secure and accessible to all.
- Reduced Emissions: The west of Scotland has a transport system that promotes sustainable travel for a cleaner environment and healthier lives.
- Attractive, Seamless, Reliable Travel: The west of Scotland has a transport system that provides attractive, seamless, reliable travel." (Page 7)

3.3.3. One of the Strategic Priorities as set out to support the 'Improved Connectivity' Strategy Outcome, within the current RTS Delivery Plan 2018/19 – 2020/21, is 'Promoting Sustainable Development'. One of the key actions which supports this Strategic Priority is *"4. Support the objectives of Glasgow City region City Deal, Ayrshire Growth Deal and emerging Argyll & Bute Rural Deal"* (Page 7) (SPT, 2018).

***Glasgow City Region City Deal (Scottish Government, 2014b)***

3.3.4. In 2014, the Glasgow and Clyde Valley Local Authorities (including North Lanarkshire Council) entered into a City Deal with both the Scottish and UK Governments. Together the UK Government and Scottish Government are investing £1.13 billion into creating growth in the region through the improvement of transportation links and the regeneration/development of key sites over the next 20 years.

3.3.5. The City Deal encompasses 27 projects across three key themes. These themes are: 'Infrastructure', 'Skills & Employment' and 'Innovation and Business Growth'.

3.3.6. The Pan Lanarkshire Orbital Transport Corridor is one of the key infrastructure projects named in the City Deal. The City Deal states that the *"Pan Lanarkshire Orbital Transport Corridor includes a new East Airdrie Link Road, improved access into Motherwell from the M74 and improved road and pedestrian links within Motherwell town centre. This £93.6m project links with similar road infrastructure investment planned within South Lanarkshire as part of City Deal*".

3.3.7. East Airdrie Link Road will create a new road link providing *"a more direct north-south link between the M8 and Cumbernauld"* (North Lanarkshire Council, 2020a). In order to support growth in the region *"the new road infrastructure will: improve journey times and transport reliability; improve connections between residential areas, town centres, business centres, employment and education; improve air quality, by relieving congestion along the existing A73"* (North Lanarkshire Council, 2020b).

***Glasgow and the Clyde Valley Strategic Development Plan (Clydeplan, 2017)***

3.3.8. The Glasgow and the Clyde Valley Strategic Development Planning Authority's (Clydeplan) Strategic Development Plan (SDP) sets out a vision and spatial strategy to tackle *"major economic, social and environmental challenges facing… whilst reflecting the variety of the areas towns and villages and their diverse roles and functions"* (Page 1).

3.3.9. Policy 3 – Glasgow and Clyde Valley City Deal notes support of *"the City Deal Programme and related projects"* (Page 17) and highlights the Pan Lanarkshire Orbital Transport Corridor as key infrastructure project which will support the following Strategic Priorities: Ravencraig; Improved strategic connectivity; Strategic Economic Investment Location (SEIL); and, Motherwell Strategic Centre (Page 18).

3.3.10. BioCity Enterprise Area and Eurocentral Scotland are both identified within the Clydeplan SDP as a Strategic Economic Investment Locations (SEILs) as a *"priority locations to promote the Scottish Government's key economic sector and Scottish Enterprise's locational priorities"* (Page 37). Both SEILs are located directly to the south of Airdrie adjacent to the M8 (Edinburgh – Glasgow Motorway).

3.3.11. The Proposed Scheme would provide a key connection from the BioCity Enterprise Area and Eurocentral Scotland north towards the M80 (Glasgow – Stirling) and the north of Scotland.

3.3.12. Eurocentral Scotland primarily accommodates production and distribution businesses and as such it is also identified as a Strategic Freight Transport Hub in the SDP. The Eurocentral

Scotland Strategic Freight Transport Hub has an agreed freight mode of both road and rail (Page 44). Policy 6 – Strategic Freight Transport Hubs notes that *"Local Authorities should safeguard and promote investment in the Strategic Freight Transport Hubs to support to agreed freight mode and, where appropriate, associated passenger facilities"* (Page 45).

3.3.13. Policy 17 – Promoting Sustainable Transport states support for "the planned and programme investment in the city regions transport network as set out in the Strategic Transport Projects Review, Regional Transport Strategy, Glasgow and Clyde Valley City Deal Infrastructure Fund, Local transport Strategies and related programmes" (Page 84).

3.3.14. A non-radial corridor from Cumbernauld to Motherwell (connecting Cumbernauld, Gartcosh, Airdrie, Coatbridge, and Ravenscraig) is highlighted, in the SDP, as a core transport corridor which provides an opportunity to promote modal shift through the following measures: *"improved heavy rail services; quality bus corridor; park and ride; improved interchanges"* (Page 85).

3.3.15. Policy 18 – Strategic Walking and Cycling Network states that development proposals are "to maintain and enhance the strategic walking and cycling network, including where applicable the Glasgow and Clyde Valley City Deal projects and the Central Scotland Green Network Development" (Page 87).

3.3.16. The Planning (Scotland) Act 2019 (Scottish Parliament, 2019) will remove the requirement for Strategic Development Plans in the four largest city regions and instead will introduce a requirement for all authorities to prepare Regional Spatial Strategies. It is anticipated that statutory guidance will be produced for regional spatial strategies by October – December 2021. Until such time as Regional Spatial Strategies are established the general principles established through Strategic Development Plans will remain relevant.

## 3.4. Relationship with other PPS

3.4.1. SEA consideration of the East Airdrie Link Road Scheme, within the context of the most relevant PPS, supports the identification of wider environmental protection objectives and issues that the Scheme should take cognisance of, and might support with its delivery.

3.4.2. A wide range of national and regional level policies from various PPS need to be considered in the development of the SEA. The other relevant plans, policies and strategies that the Scheme affects, and is affected by, are set out below and the key relevant aspects of these policies are included in Appendix B (Plans, Policies and Strategies Review).

3.4.3. A summary matrix of the PPS shown in Appendix B in relation to relevant SEA themes is provided in Table 3.1 below.

## Table 3.1 Summary of Plans, Policies and Strategies against SEA Themes

| PPS | SEA Theme | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | Biodiversity, Flora and Fauna | Population & Human Health | Water | Soil | Air | Climatic Factors | Material Assets | Cultural Heritage | Landscape |
| **National** | | | | | | | | | |
| National Transport Strategy 2 (NTS2) | | ✓ | ✓ | | ✓ | ✓ | | | |
| National Transport Strategy 2 Delivery Plan 2020 to 2022 | | ✓ | ✓ | | ✓ | ✓ | | | |
| National Planning Framework 3 (NPF3) | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| Scottish Planning Policy (SPP) | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| Scotland's Fourth National Planning (NPF4) Framework Position Statement | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| Indicative Regional Spatial Strategies – Summary of Emerging Work | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| Protecting Scotland, Renewing Scotland: The Scottish Government Programme for Scotland 2020-2021 | ✓ | ✓ | ✓ | | ✓ | ✓ | ✓ | | |
| Planning Advice Notes (PANs) | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| Climate Change Plan – Third Report on Proposals and Policies 2018-2032 | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | | ✓ |
| Update to the Climate Change Plan 2018-2032 | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | | ✓ |
| A National Mission with Local Impact – Infrastructure Investment Plan for Scotland 2021-22 to 2025-26 | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | | |
| Scotland's Third Land Use Strategy 2021-2026 – Getting the best from our land. | ✓ | ✓ | ✓ | ✓ | | | | | ✓ |
| Scotland's Biodiversity – It's in Your Hands | ✓ | | ✓ | ✓ | ✓ | ✓ | | | ✓ |
| 2020 Challenge for Scotland's Biodiversity | ✓ | | ✓ | ✓ | ✓ | ✓ | ✓ | | ✓ |
| Scottish Biodiversity Strategy Post-2020: A Statement of Intent | ✓ | | ✓ | | | | | | |

| PPS | SEA Theme | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | Biodiversity, Flora and Fauna | Population & Human Health | Water | Soil | Air | Climatic Factors | Material Assets | Cultural Heritage | Landscape |
| Cleaner Air for Scotland (CAFS) | | | | ✓ | | | | | |
| A More Active Scotland: Scotland's Physical Activity Delivery Plan | | ✓ | | | | | | | |
| Scotland's Forestry Strategy 2019-2029 | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| Historic Environment Policy for Scotland | | | | | | | | ✓ | ✓ |
| **Regional** | | | | | | | | | |
| A Catalyst for Change: Regional Transport Strategy for the west of Scotland 2008-21 | | ✓ | | | | | | | ✓ |
| Glasgow City Region City Deal | | ✓ | | | | | | | |
| Glasgow and the Clyde Valley Strategic Development Plan | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| **Local** | | | | | | | | | |
| North Lanarkshire Local Transport Strategy 2010 | | ✓ | | | ✓ | ✓ | | | |
| North Lanarkshire Local Plan | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| North Lanarkshire Local Development Plan Modified Proposed Plan | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| North Lanarkshire Biodiversity Action Plan (NLBAP) 2021 – 2015 | ✓ | | | | | | | | |
| North Lanarkshire Climate Emergency | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |

3.4.4. A summary of the key environmental requirements and objectives identified through the review is presented in Table 3.2 below.

3.4.5. A review of the associated environmental protection objectives highlights existing and potential problems, as well as opportunities for enhancement and benefits, and has served as an important base upon which to build the SEA objectives and assessment framework.

**Table 3.2 Key Environmental Requirements and Objectives from PPS Review**

| Theme | Key Environmental Requirements |
|---|---|
| Biodiversity, Flora and Fauna | • Protect and enhance the natural environment, wildlife, its habitats and other natural features, including internationally and nationally designated sites. |
| Population and Human Health | • Promote sustainable and active travel<br>• Improve the quality and connection of transport options to reduce inequality and promote inclusivity<br>• Protect citizens from the harmful effects of air pollution |
| Water | • Minimise flooding as a result of development<br>• Protect and enhance the water environment through minimising and mitigating impacts upon physical, chemical and biological quality |
| Soil | • Safeguard and maximise the multiple benefits and functions of carbon rich soils and peat |
| Air | • Promote sustainable and active travel<br>• Enhance wellbeing, health, environment, placemaking and sustainable economic growth through improved air quality<br>• Reduce greenhouse gas emissions to align with net zero targets and national/international climate commitments |
| Climatic Factors | • Promote sustainable and active travel<br>• Enhance wellbeing, health, environment, placemaking and sustainable economic growth through improved air quality<br>• Reduce greenhouse gas emissions to align with net zero targets and national/international climate commitments |
| Material Assets | • Promote sustainable design and innovation to reduce material consumption<br>• Minimise waste generation through recycling and reusing materials<br>• Maintain and enhance transport infrastructure |
| Cultural Heritage | • Minimise detrimental impact upon and support the preservation of the historic environment |
| Landscape | • Protect and enhance the landscape (including the Green Belt and Countryside) due to its multitude of benefits<br>• Ensure that visual amenity and important views are safeguarded<br>• Encourage green infrastructure |

# 4. Consultation and Stakeholder Engagement

## 4.1. SEA Consultation Requirements

4.1.1. Consultation specific to the SEA is required at several stages in line with the Scottish Government's SEA Guidance (2013). As a minimum, the statutory SEA Consultation Authorities listed in Section 2.1 (Strategic Environmental Assessment (SEA)) are consulted on the need for SEA and the scope of the SEA. The findings of the assessment are outlined in the Environmental Report and a public consultation on the plan and the report must be carried out before any plan can be adopted. The principal consultation requirements are outlined in Table 4.1 'SEA Consultation Requirements' below. The Draft Environmental Report and SEA Post Adoption Statement will all be consulted on via the SEA Gateway. Consultation on the Scoping Report was previously carried out in January and February 2022.

**Table 4.1 SEA Consultation Requirements**

| Steps in the SEA | Consultation requirements in Scotland | Approximately (Consecutive) Timescales for the Project |
|---|---|---|
| Decision on scope and level of detail of the assessment (SEA scoping Report) | Consult Consultation Authorities (5 week statutory minimum). | Five Weeks (completed) |
| Draft Environmental Report | Consult Consultation Authorities (6 – 8 weeks)<br>Consult the public | Six Weeks |
| Preparation of plan or programme | Taking account of opinions expressed on Environmental Report (produce second draft of Environmental Report if substantial changes are required) | Four Weeks |
| Adopted plan or programme: Statement and Measures concerning monitoring (SEA Post Adoption Statement) | It is not a formal consultation. The SEA Post Adoption Statement only needs to be made available to consultees 'as soon as reasonably practicable after the adoption of a qualifying plan or programme'. | As soon as practicable after the adoption of the EALR. Given it is not a formal consultation, there is no set consultation period. |

## 4.2. Previous Consultations

4.2.1. Consultation is an iterative process that continues throughout the different stages of the environmental assessment and design process. This section discusses the previous environmental consultation that has been carried out in relation to the East Airdrie Link Road Scheme, outside of the SEA process, as part of the DMRB Stage 1 and Stage 2 assessments.

***Workshops and Public Exhibitions***

4.2.2. Following the conclusion of the DMRB Stage 1 Assessment, a stakeholder workshop was held on the 3 February 2020 to present the shortlist options for assessment to key stakeholders. Representatives from Glasgow & Clyde Valley City Region Deal, North Lanarkshire Council and the AECOM Design Team attended the workshop.

4.2.3. Public exhibitions were scheduled to be held at three locations; however, due to the Coronavirus Pandemic these events were cancelled, and the public exhibition was moved online.

4.2.4. The online public exhibition presented the shortlist options under consideration and provided an opportunity for members of the public to provide comment and feedback. Queries and comments raised by the public during the public exhibition consultation period have, where appropriate, been considered during the development of the design and the environmental assessment process at DMRB Stage 2.

4.2.5. The public exhibition materials are available to the public online (with feedback being accepted through an associated online form) at the following address:

http://www.northlanarkshire.gov.uk/east-airdrie-link-road.

4.2.6. An active travel workshop was held on the 30 July 2020 to present the shortlist options and possible options for active travel provision to key active travel stakeholders. Representatives from the Glasgow & Clyde Valley Green Network Partnership, Central Scotland Green Network Trust, Sustrans, GoBike, SPT, NHS Lanarkshire, North Lanarkshire Council and the AECOM Design Team attended the workshop.

***DMRB Environmental Stakeholder Engagement***

4.2.7. A number of consultation letters were issued to a range of environmental stakeholder consultees in May 2020 to gather information to support the DMRB Stage 2 Assessment. The responses received are summarised in Table 4.2 'Summary of Environmental Consultation Responses' below.

**Table 4.2 Summary of Environmental Consultation Responses**

| Consultee | Summary of Response |
|---|---|
| Central Scotland Green Network Trust (CSGNT) | Response states "it is essential that this work considers the following issues in relation to the three route options: 1. How connectivity of the route maximises the reduction in traffic along the existing A73 corridor; 2. How to ensure current active travel routes are connected into any new infrastructure and are not physically compromised by the link road; 3. How active travel can be enhanced as an experience by this project, especially through the greening of the active travel corridor4.How habitat connections are created and improved, and not adversely impacted upon, by the route". Further details on how these issues relate to the Scheme Options are set out in the response. Dated 20 May 2020. |
| Cycling Scotland | Response notes that the existing A73 "could be made more cycling friendly through separated cycle lanes". Dated 18 May 2020. |
| First Bus | Response states support for the new road and show no preference between the proposed options. Response also highlights delays experienced by Service 201 on the A73 due to traffic congestion. Dated 18 May 2020. |
| Glasgow & Clyde Valley Green Network Partnership (GCVCNP) | Response highlights the GCVGNP Blueprint and the identification of an opportunity for a key "Green Active Travel" access connection between Airdrie and Cumbernauld. Dated 28 May 2020. |
| Go Bike | Response notes a willingness to engage with the Proposed Scheme design and assessment going forward. Dated 26 May 2020. |
| Historic Environment Scotland (HES) | Response requests further information on the Scheme Options in order to provide specific information on the impacts of the Proposed Scheme. Dated 29 May 2020. |
| NatureScot (Previously Scottish Natural Heritage (SNH)) | Response highlights two environmental issues to consider going forward: "Option B is adjacent to Lady Bell's Moss SSSI. This site is designated for its raised bog. It is particularly sensitive to changes in hydrology so this must be assessed to avoid damage to the site. - Option C is adjacent to Brownsburn Community Park Local Nature Reserve. The presence of water voles has been recorded at the reserve. Water voles receive partial protection under Schedule 5 of the Wildlife and Countryside Act 1981 (as amended)". Dated 1 June 2020. |
| NHS Lanarkshire | Response notes support for the Proposed Scheme as "the enhancement of the north-south corridor will deliver a number of significant benefits for economic growth". The response notes Option C as the preferred option and identifies the connection north of Riggend (Options A1, B1 and C1) as important to deliver the fully benefit of the new route. |

| Consultee | Summary of Response |
|---|---|
| | Reponse notes that two potential sites for the new University Hospital Monklands (Glenmavis and Wester Moffat) would be impacted by the Scheme Options. Dated 2 July 2020. |
| Scottish Environment Protection Agency (SEPA) | Response notes that the part of the Study Area "lies within the medium likelihood fluvial flood extent of the SEPA Flood Map, and may therefore be at medium to high risk of flooding (from the North Calder Water and Shotts Burn)" and states that "the infrastructure should be designed and constructed to remain operational during floods and not impede water flow". Response recommends that new watercourse crossings should be designed to comply with the principles of SPP and have a neutral or better effect on flood risk. Dated 11 August 2020. |
| Strathclyde's Partnership for Transport (SPT) | Response that Options A or B are "preferable in respect of their southern integration with the trunk road network. Option C takes a route through Chapelhall, which is already congested and is an AQMA. Option A & B would be most preferable in respect of reducing traffic through Chapelhall town centre and for the benefit of public transport, active travel, air quality and noise". Response also states that "it essential that in further developing these proposals it is clearly demonstrated that not only does the project enhance pedestrian and cycle infrastructure in the area, but enhancements to the road network also support the increased attractiveness of the local bus network" and that "it is essential that the opportunity is utilised to repurpose Airdrie town centre, make it more attractive, improve from the perspective of place-making, active travel, but critically, offering some benefits to bus, if they have not been delivered already by then". |
| Sustrans | Response notes that Sustrans "do not support the chosen strategy to build a new road to the east of the A73"; however, the response does make the following recommendations "to deliver the beneficial outcomes for climate, equalities, health and economy the project should not result in an overall increase in road capacity across the network…, significant enhancements should be made to the route of NCN 75 between Plains and Drumgelloch…, all active travel links should be designed to integrate the very best practice walking and cycling infrastructure…, junctions should be designed to fully integrate safe and accessible active travel…, east-west active travel links across the carriageway should be provided to go some way to mitigate issue of severance and enable connections to the core path network…, the redirection of traffic away from Chapellhall and East Ardrie should be used to improve public transport links and the walking and cycling environment…, soft measures should be included in proposals to complement active travel infrastructure." Dated 1 July 2020. |

# 5. Development of Options

## 5.1. Introduction

5.1.1. As the assessment has been undertaken in parallel with the wider DMRB scheme assessment, it has aligned with the approach set out in the DMRB guidance documents[3]. The DMRB is a suite of documents which contain requirements and advice relating to works on motorway and all-purpose trunk roads. The DMRB guidance is published by Highways England with oversight from Transport Scotland the Welsh Government and the North Irish Department for Infrastructure.

5.1.2. The assessment of the East Airdrie Link Road scheme options therefore has been carried out in two stages:

- DMRB Stage 1 'Preliminary Assessment' – An initial assessment considering eight different strategies, with the objective of identifying which strategies should be taken forward for further development into route options at DMRB Stage 2.
- DMRB Stage 2 'Route Options Assessment' (Concurrent with the SEA) - Following the conclusion of Stage 1, a significant level of design development was undertaken to refine options for routes of the preferred strategy.

## 5.2. Scheme Objectives

5.2.1. A Project Inception Workshop for the Proposed Scheme was held on 25 October 2019. The workshop was attended by North Lanarkshire Council and the AECOM Design Team. At this workshop the following Project Objectives were established:

'To provide enhanced North/South infrastructure through North Lanarkshire to the north of the M8 by 2026, contributing to a co-ordinated and strategic approach to upgrade transport infrastructure and promote economic regeneration through the Pan-Lanarkshire Orbital Transport Corridor project.

- **Traffic** – Improve journey times, reliability and resilience between Cumbernauld and M8.
- **Connectivity** – Facilitate improved connectivity between residential areas and centres of economic activity, improving access to employment, education and training opportunities.
- **Public Transport** – Facilitate improvements to public transport infrastructure and reliability, encouraging modal shift[4].
- **Active Travel** – Provide active travel infrastructure linking to existing networks, encouraging modal shift.

[3] The full suite of Design Manual for Roads and Bridges (DMRB) guidance documents can be found here: https://www.standardsforhighways.co.uk/dmrb/

[4] "Modal shift means a switch from a given transport mode to another, as a result of a modified choice" (Pastori et al., 2018)). In this context, modal shift refers to reducing reliance on the private car and travelling by other means.

- **Air Quality** – Reduce levels of traffic-related air pollution within the Chapelhall Air Quality Management Area (AQMA).
- **Development** – Support development opportunities for existing businesses and assist in unlocking stalled development sites.'

## 5.3. Overview of Preliminary Assessment Process and Outcomes

***Preliminary Assessment Strategies***

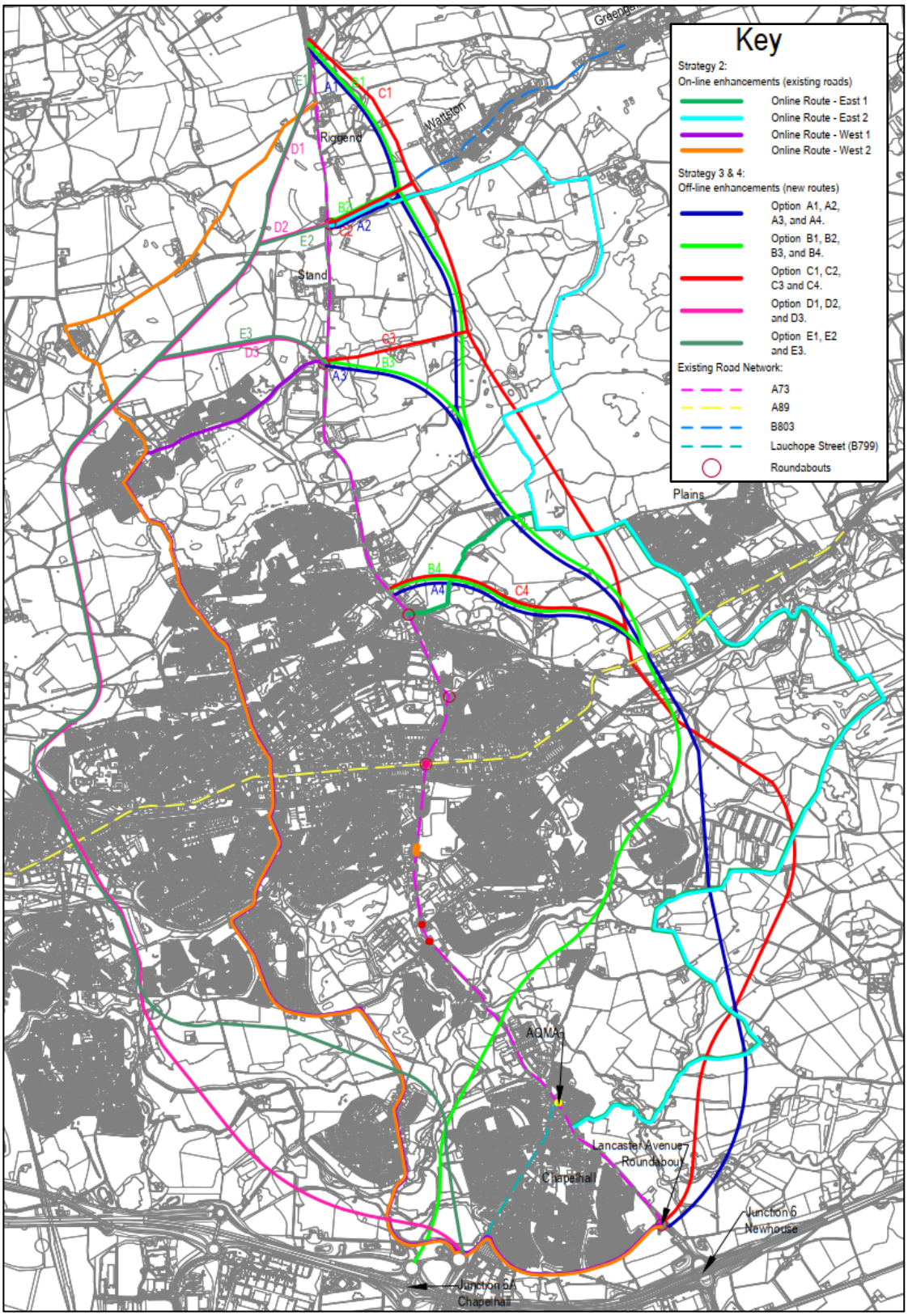
5.3.1. Part 1 ('Engineering Assessment') of the Stage 2 Options Assessment Report provides a detailed description of the development of the options assessed at Stage 2, however a brief description has also been provided here.

5.3.2. Eight strategies (and their associated options) underwent DMRB Stage 1 Scheme Assessment. The strategies that were considered at Stage 1 were:

- **Strategy 1:** On-line enhancements – A73.
  - Upgrade A73 from Chapelhall to Stand.
  - Upgrade the congested and constrained (urban) sections and junctions.
- **Strategy 2:** On-line enhancements – alternative north south routes.
  - Upgrades of selected sections of the network to the east of the A73.
  - Upgrades of selected sections of the network to the west of the A73.
- **Strategy 3**: Off-line enhancements – new routes west of the A73.
  - New north-south link road to the west of the A73.
- **Strategy 4:** Off-line enhancements – new routes east of the A73.
  - New north-south link road to the east of the A73.
- **Strategy 5:** New/ improved bus provision options.
  - Public transport co-ordination package.
  - Increased frequency of daytime bus services.
  - Extended bus operating hours (evenings and weekends).
  - Improve public transport infrastructure and vehicles.
  - Improve public transport information provision and marketing.
  - Express bus park and ride.
  - New north-south bus routes.
  - Subsidised bus services.
- **Strategy 6:** Traffic management options.
  - Restrict HGV movements.
  - Reduce speed limits.
  - Limit the number of turning movements onto and from the A73.
- **Strategy 7:** Active travel options on existing A73.
  - Improved pedestrian and cycle crossing facilities.
  - New/improved pedestrian and cycleways.
- **Strategy 8:** New/ Improved railway options.
  - New north-south railway.

- Increased frequency of services within the Study Area.
- New railway linking Glasgow-Edinburgh line with Motherwell-Cumbernauld line.
- Coatbridge Central-Coatbridge Sunnyside pedestrian link.

**Image 5.1 Preliminary Assessment Strategies**



5.3.3. A full description of the eight strategies is provided in the East Airdrie Link Road DMRB Stage 1 – Options Generation and Appraisal Report (North Lanarkshire Council, 2020).[5]

***Preliminary Assessment Process and Outcomes***

5.3.4. The eight strategies considered in the Preliminary Assessment were tested to determine compliance with the six scheme objectives, set out in Section 5.2. 'Scheme Objectives' above. This provided an initial assessment of the options to identify those that can be rejected at an early stage without further assessment. Options were sifted out and not progressed to the appraisal stage where it was apparent that a particular option will clearly not achieve the Project Objectives or is not feasible. A summary of which options have been rejected and which have been retained for further development is presented in Table 5.1 below.

5.3.5. From the initial sifting exercise, the following options were retained for further consideration:

- **Strategy 1** - Upgrade the congested and constrained (urban) sections and junctions
- **Strategy 4** - New north-south link road to the East of the A73 (12 route options)
- **Strategy 5** - New/ improved bus provision options (6 options)
- **Strategy 7** – Pedestrian and cycle ways (2 options)
- **Strategy 8** – New rail link and/or new pedestrian link (2 options)

[5] This can be accessed at: https://www.northlanarkshire.gov.uk/regeneration-and-investment/glasgow-city-region-city-deal/pan-lanarkshire-orbital-transport-corridor/east-airdrie-link-road/what-have-we-done

## Table 5.1 Initial Sifting Table

| Option | Scheme Objective | | | | | | Comment | Initial Sift Outcome |
|---|---|---|---|---|---|---|---|---|
| | Traffic | Connectivity | Public Transport | Active Travel | Air Quality | Development | | |
| **Strategy 1** On-line enhancements - A73 | | | | | | | | |
| Upgrade A73 from Chapelhall to Stand | ✓ | ✓ | ✓ | ✓ | ✗ | ✗ | Very limited opportunities to re-align or widen. Large sections are constrained by adjacent land-use, i.e. businesses and housing. | Reject |
| Upgrade the congested and constrained (urban) sections and junctions | ✓ | ✓ | ✓ | ✓ | ✗ | ✗ | Retain for further consideration as a potential enhancement to another strategy, i.e. signalisation upgrades without additional land may be possible. | Retain |
| **Strategy 2** On-line enhancements - alternative north-south routes | | | | | | | | |
| Upgrades of selected sections of the network east of the A73 | ✗ | ✓ | ✗ | ✗ | ✗ | ✓ | Very limited opportunities to re-align or widen. Volume of traffic removed from the A73 likely to be minimal. | Reject |
| Upgrades of selected sections of the network west of the A73 | ✗ | ✓ | ✗ | ✗ | ✓ | ✗ | Very limited opportunities to re-align or widen. Volume of traffic removed from the A73 likely to be minimal. | Reject |
| **Strategy 3** Off-line enhancements – new routes west of the A73 | | | | | | | | |
| New north - south link road to the west of the A73 | ✓ | ✓ | ✓ | ✓ | ✓ | ✗ | A link road to the west wouldn't assist in unlocking stalled development sites. No feasible alignments to the west can be identified, i.e. largely urban built up area and there is no intention to acquire buildings to facilitate construction of a route. | Reject |
| **Strategy 4** Off-line enhancements – new routes east of the A73 | | | | | | | | |
| New north - south link road to the East of the A73 | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | Performs well against all project objectives and numerous potential routes through largely rural landscape can be identified. | Retain |
| **Strategy 5** New/ improved bus provision options | | | | | | | | |
| Public transport co-ordination package | ✗ | ✓ | ✓ | ✗ | ✗ | ✗ | Retain for further consideration as a potential enhancement to another strategy. | Retain |
| Increased frequency of daytime bus services | ✗ | ✗ | ✓ | ✗ | ✗ | ✗ | Retain for further consideration as a potential enhancement to another strategy. | Retain |

| Option | Scheme Objective | | | | | | Comment | Initial Sift Outcome |
|---|---|---|---|---|---|---|---|---|
| | Traffic | Connectivity | Public Transport | Active Travel | Air Quality | Development | | |
| Extended bus operating hours (evenings and weekends) | ✓ | ✓ | ✓ | ✗ | ✗ | ✓ | Retain for further consideration as a potential enhancement to another strategy. | Retain |
| Improve public transport infrastructure and vehicles | ✗ | ✗ | ✓ | ✗ | ✗ | ✗ | High capital cost compared to the small contribution towards objectives. | Reject |
| Improve public transport information provision and marketing | ✗ | ✗ | ✓ | ✗ | ✗ | ✓ | Retain for further consideration as a potential enhancement to another strategy. | Retain |
| Express bus park and ride | ✗ | ✗ | ✓ | ✗ | ✗ | ✗ | High capital cost compared to the small contribution towards objectives. | Reject |
| New north-south bus routes | ✓ | ✓ | ✓ | ✗ | ✗ | ✓ | Retain for further consideration as a potential enhancement to another strategy. | Retain |
| Subsidised bus services | ✗ | ✓ | ✓ | ✗ | ✗ | ✓ | Retain for further consideration as a potential enhancement to another strategy. | Retain |
| **Strategy 6** Traffic management options | | | | | | | | |
| Restrict HGV movements | ✓ | ✗ | ✗ | ✗ | ✓ | ✗ | High acceptability risk, i.e. negative impact on numerous business and communities along A73. | Reject |
| Reduce speed limits | ✗ | ✗ | ✗ | ✗ | ✗ | ✗ | Although the increased journey time could discourage some through traffic, it is unlikely to be feasible, or achieve support from the Police. | Reject |
| Limit the number of turning movements onto and from the A73 | ✓ | ✗ | ✗ | ✗ | ✗ | ✗ | Little scope to rationalise, particularly around Airdrie where majority of congestion occurs. | Reject |
| **Strategy 7** Active travel Options on existing A73 | | | | | | | | |
| Improved pedestrian and cycle crossing facilities | ✗ | ✓ | ✗ | ✓ | ✗ | ✗ | Retain for further consideration as a potential enhancement to another strategy. | Retain |
| New/ improved pedestrian and cycle ways | ✗ | ✓ | ✗ | ✓ | ✗ | ✗ | Retain for further consideration as a potential enhancement to another strategy. | Retain |
| **Strategy 8** New/ Improved railway options | | | | | | | | |
| New north-south railway | ✗ | ✓ | ✓ | ✗ | ✗ | ✓ | Very high capital cost compared to the limited contribution towards objectives, i.e. existing north south railway line (Motherwell –Cumbernauld) within 3 miles of the A73. | Reject |

| Option | Scheme Objective | | | | | | Comment | Initial Sift Outcome |
|---|---|---|---|---|---|---|---|---|
| | Traffic | Connectivity | Public Transport | Active Travel | Air Quality | Development | | |
| Increased frequency of services within the Study Area | ✗ | ✗ | ✓ | ✗ | ✗ | ✗ | Little benefit against objectives compared to existing. | Reject |
| New railway linking Glasgow-Edinburgh line with Motherwell-Cumbernauld line | ✗ | ✓ | ✓ | ✗ | ✗ | ✗ | Prevailing topography and land-use in this area will present major obstacles. Significant land/property acquisition would be required. New structures would be required, resulting in high costs and alternative funding sources would need to be identified. Retain for further consideration. | Retain |
| Coatbridge Central-Coatbridge Sunnyside pedestrian link | ✗ | ✓ | ✓ | ✓ | ✗ | ✗ | Retain for further consideration as a potential enhancement to another strategy. | Retain |

5.3.6. Following on from the assessment of strategies against the scheme objectives, the objectives were extended into a range of Appraisal Criteria (including environmental criteria). In addition, Critical Success Factors were also determined.

5.3.7. The Appraisal Criteria (AC) for the second stage of option appraisal were as follows:

- **AC 1** - Improve journey times, reliability and resilience between Cumbernauld and M8.
- **AC2** - Support development opportunities for existing businesses and assist in unlocking stalled development sites.
- **AC3** - Improve road safety for all users.
- **AC4** - Reduce levels of traffic-related air pollution within the Chapelhall AQMA.
- **AC5** - Minimise intrusion of works on natural environment, cultural heritage and people whilst enhancing the local environment where opportunities arise.
- **AC6** - Facilitate improvements to public transport infrastructure and reliability, encouraging modal shift.
- **AC7** - Facilitate improved connectivity between residential areas and centres of economic activity, improving access to employment, education and training opportunities.
- **AC8** - Provide active travel infrastructure linking to existing networks, encouraging modal shift.

5.3.8. The Critical Success Factors (CSF) are as follows:

- **CSF1** – The options fit with and contribute to key policy priorities and objectives.
- **CSF2** – The practical delivery of the infrastructure works.
- **CSF3** – Capital and ongoing revenue costs.
- **CSF4** – The options ability to maximise returns for the investment.

5.3.9. The retained options were then all rated against the Appraisal Criteria on a simple ‘significant benefit’ to ‘significant disbenefit’ scale, while the Critical Success Factors have been rated either ‘Achieved’ or ‘Not Achieved’.

5.3.10. A summary of the results of the assessment against the Appraisal Criteria and Critical Success Factors is presented in Table 5.2 below.

## Table 5.2 Initial Appraisal

| Option | Appraisal Criteria | | | | | | | | Critical Success Factors | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | AC1 | AC2 | AC3 | AC4 | AC5 | AC6 | AC7 | AC8 | CSF1 | CSF2 | CSF3 | CSF4 |
| **Do Nothing** | | | | | | | | | | | | |
| Status Quo | XX | X | X | XXX | ✓ | X | X | X | X | X | X | X |
| **Strategy 1**<br>On-line enhancements - A73 | | | | | | | | | | | | |
| Upgrade the congested and constrained (urban) sections and junctions | ✓ | X | ✓ | XX | ✓ | ✓ | X | O | X | X | X | X |
| **Strategy 4**<br>Off-line enhancements – new routes east of the A73 | | | | | | | | | | | | |
| New north - south link road to the East of the A73 | ✓✓✓ | ✓✓✓ | ✓✓ | ✓✓✓ | XXX | ✓✓✓ | ✓✓✓ | ✓✓✓ | ✓ | ✓ | ✓ | ✓ |
| **Strategy 5**<br>New/ improved bus provision options | | | | | | | | | | | | |
| Public transport co-ordination package | O | O | O | O | O | ✓✓ | ✓ | O | ✓ | X | X | X |
| Increased frequency of daytime bus services | O | O | O | O | O | ✓✓ | ✓ | O | ✓ | X | X | X |
| Extended bus operating hours (evenings and weekends) | O | O | O | O | O | ✓✓ | ✓ | O | ✓ | X | X | X |
| Improve public transport infrastructure and vehicles | O | O | O | O | O | ✓✓ | ✓ | O | ✓ | X | X | X |
| Improve public transport information provision and marketing | O | O | O | O | O | ✓✓ | ✓ | O | ✓ | X | X | X |
| Express bus park and ride | O | O | O | O | O | ✓✓ | ✓ | O | ✓ | X | X | X |
| New north-south bus routes | ✓ | O | O | O | O | ✓✓✓ | ✓✓ | O | ✓ | X | X | X |
| Subsidised bus services | O | O | O | O | O | ✓✓✓ | ✓ | O | ✓ | X | X | X |
| **Strategy 7**<br>Active travel Options on existing A73 | | | | | | | | | | | | |
| New/ improved pedestrian and cycle ways | ✓ | O | ✓✓ | O | X | O | ✓ | ✓✓✓ | ✓ | X | X | X |
| **Strategy 8**<br>New/ Improved railway options | | | | | | | | | | | | |
| New railway linking Glasgow-Edinburgh line with Motherwell-Cumbernauld line | O | O | O | O | O | ✓✓ | ✓ | O | ✓ | X | X | X |
| Coatbridge Central-Coatbridge Sunnyside pedestrian link | O | O | O | O | O | ✓✓ | ✓ | ✓✓ | ✓ | X | X | X |

5.3.11. As shown above, a new north-south link road to the east of the A73 (Strategy 4) performs extremely well against all appraisal criteria, except for AC5 ('Minimise intrusion of works on natural environment, cultural heritage, and people whilst enhancing the local environment where opportunities arise') and meets all four Critical Success Factors. As a result, the short-listed options identified for further consideration at Stage 2 are Strategy 4: New route to the east of the A73.

5.3.12. The options assessed at Stage 2 were developed over a period of time and evolved following initial development and receipt of further information. The emerging cost estimates resulted in concern that the scheme may not be deliverable within the available budget. As a result, it was agreed that some of the options could not be taken forward to the final short list for full appraisal. The agreed final short list of options for full appraisal was therefore:

- Option B
- Option B2
- Option B3
- Option B4
- Option E

5.3.13. A full description of the DMRB Stage 1 Assessment is provided in the East Airdrie Link Road DMRB Stage 1 – Options Generation and Appraisal Report (North Lanarkshire Council, 2020).

***Preliminary Assessment Environmental Summary***

5.3.14. A preliminary environmental assessment of the remaining five strategies (Strategies 1, 4, 5, 7 and 8) was also carried out as part of the DMRB Stage 1 Preliminary Assessment.

5.3.15. This high-level assessment showed that as Strategy 4 will require a new off-line link road to the east of Airdrie it has the potential to have a more significant effect on the environment than Strategies 1, 5, 7 and 8.

5.3.16. Strategy 4 will potentially result in adverse effects on a scheduled monument, potential coal, peat and alluvium areas, the visual amenity of the area, key landscape features, ancient woodland, ecological habitats, designated environmental sites, and on local surface water, groundwater, and flooding. There is also the potential to impact designated residential, business and community land, most notably Wester Moffat Hospital.

5.3.17. Due to the inclusion of additional active travel or rail infrastructure as part of Strategy 8 there are likely to be adverse effects on the Blairhill and Dunbeath Conservation Area, two Scheduled Monuments, local surface water and minor loss of habitats.

5.3.18. As Strategy 1 follows the existing A73 it will have reduced impacts on the environment compared to the off-line Strategy 4. The A73 passes through Drumgelloch Conservation Area, Airdrie Town Centre and Chapelhall (including Chapelhall AQMA) potentially resulting in slight adverse effects on the visual amenity of the area, buildings within the conservation area, and local surface water, groundwater and flooding, and very minor loss of habitats.

5.3.19. Strategies 5 and 7 will have low land-take requirements and as a result these strategies are expected to have negligible effects on the environment.

5.3.20. Theme.

5.3.21. Table 5.3 below provides a summary of the potential impacts the remaining strategies will have in relation to each SEA Theme.

**Table 5.3 DMRB Stage 1 Preliminary Assessment – Potential Environmental Impacts**

| SEA Theme | Potential Environmental Impacts |
|---|---|
| **Biodiversity, Flora and Fauna** | **Strategies 1, 5, 7 and 8** would result in minimal biodiversity impacts due to little to no land-take requirements.<br>**Strategy 4 is** likely to have impacts on designated sites and habitats. |
| **Population and Human Health** | **Strategies 1, 5** and **8** would have little to no impact on population and human health.<br>**Strategy 4** would have a direct impact on designated community and business land and a negative health impact due caused by landscape amenity impacts.<br>**Strategy 7** would have a positive health impact due to an improved transport network and accessibility. |
| **Water** | **Strategy 1** could result in some impacts upon surface water, groundwater and flooding due to increased traffic on the A73.<br>**Strategy 4** could result in contamination of surface water, increased risk of flooding, impacts on watercourse hydromorphology and impacts on groundwater quality and flow due to the route of the new off-line options.<br>**Strategies 5** could result in some impacts upon surface water, groundwater and flooding due to bus lane operation.<br>**Strategies 7** and **8** would have little to no impact on road drainage or the water environment. |
| **Soil** | **Strategies 1, 5, 7** and **8** would have a limited impact on geology and soils.<br>**Strategy 4** would have potential impacts on Peat and Alluvium. |
| **Air** | **Strategy 1** would result in a reduction in pollutant concentrations at properties adjacent to the A73 and at Chapelhall due to a reduction in congestion on the A73.<br>**Strategy 4** would divert traffic from the A73 onto the new route, decreasing pollutant concentrations at properties near the A73 (including at Chapelhall) but increasing pollutant concentrations at properties near the route option.<br>**Strategies 5** and **8** would have the potential to result in a reduction in pollutant concentrations. However, the details are not yet fully realised resulting in an unknown effect.<br>**Strategy 7** would result in negligible changes in air quality. |
| **Climatic Factors** | **Strategies 1, 5, 7** and **8** are likely to result in minimal GHG emissions during operation.<br>**Strategy 4** would result in energy consumption and GHG emissions for infrastructure operation (lighting, etc.) and routine maintenance, and additional road user emissions. |
| **Material Assets** | Excavated materials and construction and demolition waste is expected to arise as a result of **Strategy 1**.<br>**Strategy 4** would have a potential impact on planned waste management infrastructure and mineral and peat resources.<br>**Strategies 5, 7** and **8** would result in limited material use and waste. |
| **Cultural Heritage** | **Strategy 1** may result in impacts on Conservation Areas.<br>**Strategy 4** would result in direct impacts on scheduled monuments.<br>**Strategies 5, 7** and **8** would result in a neutral impact on cultural heritage. However, there is potential for buried archaeology and the setting of heritage assets to be affected. |
| **Landscape** | **Strategy 1** would result in limited change to landscape character and visual amenity.<br>**Strategy 4** would result in the potential loss of key landscape features.<br>**Strategy 5** would result in localised landscape and visual change.<br>**Strategies 7** and **8** would result in little or no perceptible change to landscape character or visual amenity. |

5.3.22. The full details of the DMRB Stage 1 Environmental Assessment can be found in in Appendix I ‘DMRB Stage 1 Environmental Assessment’ of the East Airdrie Link Road DMRB Stage 1 – Options Generation and Appraisal Report (North Lanarkshire Council, 2020).

5.3.23. As a result of the Stage 1 Scheme Appraisal, the following short list of options was identified for further consideration at Stage 2: Strategy 4: New route to the east of the A73:

- Alignment A
- Alignment B
- Alignment C

## 5.4. Route Options Assessment Process

5.4.1. Following the conclusion of the preliminary assessment (DMRB Stage 1), and the identification of Strategy 4 as the preferred strategy, a significant level of design development was undertaken to refine options for new routes primarily to the east of the A73 (although there is an option which seek to utilise land to the west of the A73 as in Strategy 3). The resulting initial Stage 2 Options for assessment were Options A, B, C, D, E, F, B2, B3, B3 Extension and B4.

5.4.2. Over the course of the DMRB Stage 2 environmental, engineering, traffic, and economic assessments six of the initial options have been discounted and the options assessment has continued with five options. These five shortlisted options are Options B, E, B2, B3 and B4.

5.4.3. Following the completion of the Stage 2 assessment process, an additional three options were developed in order to potentially minimise the impacts of the Scheme on residents at Riggend. These options (Options E1, G and H) follow the same route as Option E with some variation in the north-most section between the B803 and the A73, and are shown in the figures below. Due to the strategic nature of SEAs the combined Options E, E1, G and H are all considered to be covered by the assessment of Option E.

**Image 5.2 Option E**

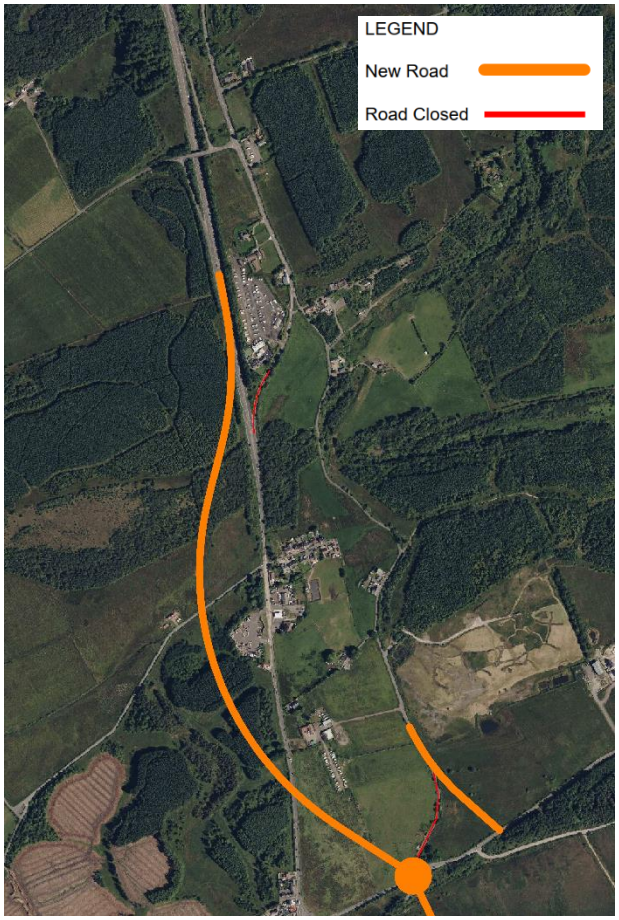
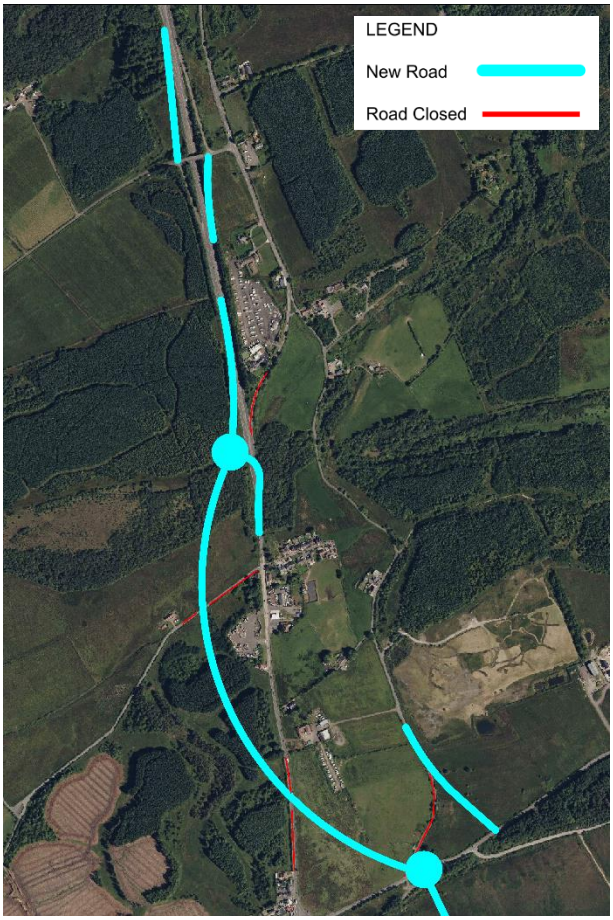
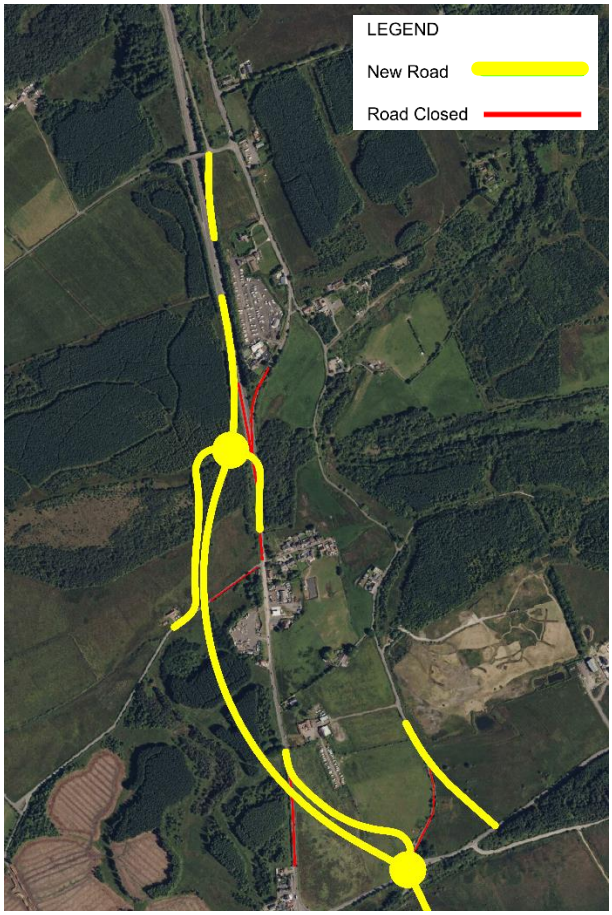


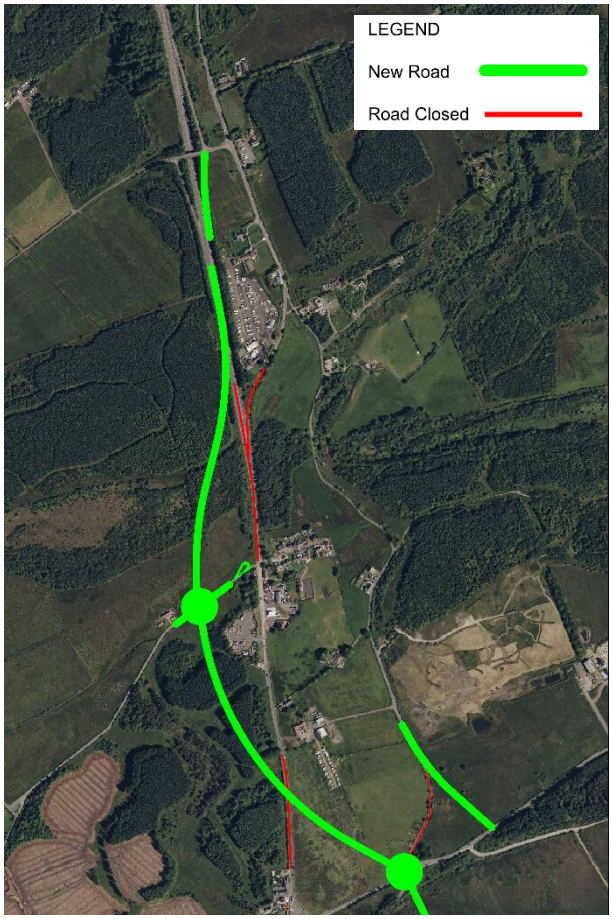

**Image 5.3 Option E1**



## Image 5.4 Option G




## Image 5.5 Option H

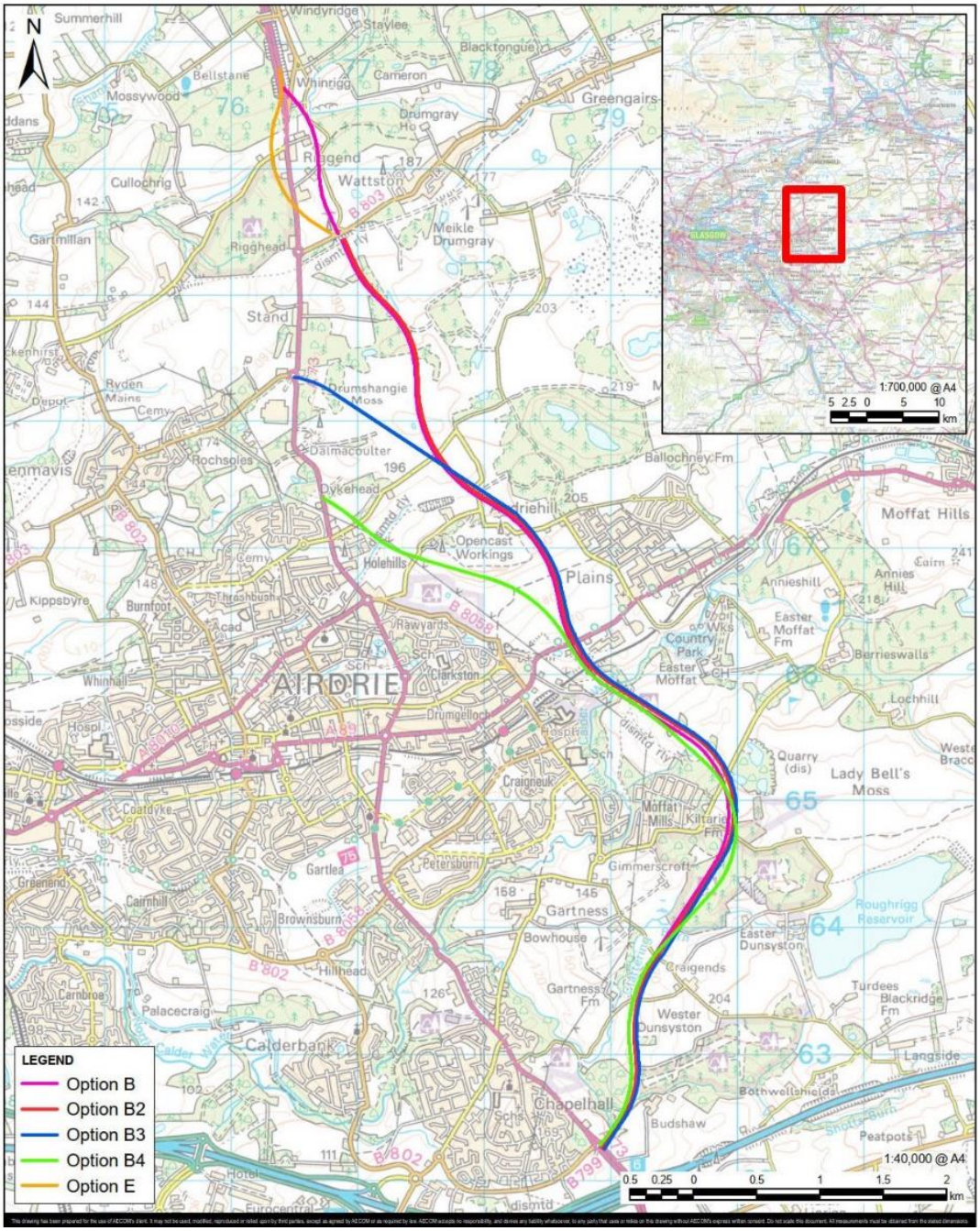


# 6. Description of Options

6.1.1. The preferred scheme, Scheme 4 (and the associated options), all follow the same route to the east of Airdrie, starting at the Lancaster Avenue/A73 roundabout at Chapellhall, to the south of Airdrie. The options then follow a similar route between the A83 at Lancaster Avenue and the A89 at Plains. Once the options pass the A89, the routes diverge to terminate at different sections of the A73 to the north of Airdrie

6.1.2. The five shortlisted options to be assessed as reasonable alternatives through the SEA are shown in Image 6.1 'Scheme Options' below and a brief description of each option is also provided below.

**Image 6.1 Scheme Options Location**



***Option B***

6.1.3. Option B is approximately 10.02 km in length. The route commences at the existing Lancaster Avenue/A73 roundabout and terminates north of Riggend where the A73 is a dual carriageway.

6.1.4. The route exits the Lancaster Avenue/ A73 roundabout in a northeast direction and passes over a watercourse (running north-south) to the west of Bud Shaw Farm, and an area of ancient woodland after 150m. The route continues northwards and passes over another watercourse (running east-west) to the west of Bud Shaw Farm, and another area of ancient woodland.

6.1.5. The route continues north and crosses Gartness Road, Craigens Road and Roughrigg Road where a new Roundabout is proposed. The route exits this proposed roundabout, at Roughrigg Road, to the north before travelling in a northwest direction and crossing Stepends Road.

6.1.6. The route continues northwest over farmland and then crosses over North Calder Water. The route then turns northwards and crosses over the Glasgow to Edinburgh via Bathgate railway line.

6.1.7. The route then continues north crossing the A89 (Forrest Street/Airdrie Road) and Ballochney Road. The route then turns northwest and crosses Ballochney Road again, north of Airdriehill Road junction.

6.1.8. The route continues northward crossing a watercourse and Dykehead Road before continuing across Drumshangie Moss. Here, the route continues in a northward direction with a bend to the east to avoid deep areas of peat.

6.1.9. The route then enters a new B803 Roundabout. Old Biggar Road will be realigned to the east and will join directly to the B803 to the east of the new route.

6.1.10. The new route continues to the north and passes between residential properties and passes to the east of Riggend before finishing at the fifth roundabout, the A73/Old Biggar Road Roundabout.

***Option E***

6.1.11. Option E is approximately 10.41 km in length. The route commences at the existing Lancaster Avenue/A73 roundabout and terminates north of Riggend where the A73 is a dual carriageway.

6.1.12. The route exits the Lancaster Avenue/ A73 roundabout in a northeast direction and passes over a watercourse (running north-south) to the west of Bud Shaw Farm, and an area of ancient woodland after 150m. The route continues northwards and passes over another watercourse (running east-west) to the west of Bud Shaw Farm, and another area of ancient woodland.

6.1.13. The route continues northeast and crosses Gartness Road, Craigens Road and Roughrigg Road where a new Roundabout is proposed. The route exits this proposed roundabout, at Roughrigg Road, to the north before travelling in a northwest direction and crossing Stepends Road.

6.1.14. The route continues northwest over farmland and then crosses over North Calder Water. The route then turns northwards and crosses over the Glasgow to Edinburgh via Bathgate railway line.

6.1.15. The route then continues north crossing the A89 (Forrest Street/Airdrie Road) and Ballochney Road. The route then turns northwest and crosses Ballochney Road again, north of Airdriehill Road junction.

6.1.16. The route continues northward crossing a watercourse and Dykehead Road before continuing across Drumshangie Moss. Here, the route continues in a northward direction with a bend to the east to avoid deep areas of peat.

6.1.17. The route then enters a new B803 Roundabout on the south end and exits to the northwest. The route travels northwest crossing the A73 (Stirling Road) and continues northwards on the westside of the A73.

6.1.18. Here the route crosses over Brackenhirst Road and travels in a northeast direction to join up with the dual carriageway section of the A73.

***Option E Variation (Option E1)***

6.1.19. Option E1 follows the same route as Option E between the existing Lancaster Avenue/A73 roundabout and the new B803 roundabout. The route enters the new roundabout on the south end and exits to the northwest crossing the A73 (Stirling Road) (a section of which will be closed) and continues northwards on the westside of the A73.

6.1.20. Here the route crosses over Brackenhirst Road (a section of which will be closed) and travels in a northeast direction before entering a new A73 roundabout to the south. The route then exits the new roundabout to the north before joining up with the dual carriageway section of the A73. An additional arm of the roundabout is provided to the east to access the A73 (Stirling Road).

***Option E Variation (Option G)***

6.1.21. Option G follows the same route as Option E between the existing Lancaster Avenue/A73 roundabout and the new B803 roundabout. The route enters the new roundabout on the south end and exits to the northwest crossing the A73 (Stirling Road) (a section of which will be closed) and continues northwards on the westside of the A73. An additional arm of the roundabout is provided to the north-east to access the A73 (Stirling Road).

6.1.22. Here the route crosses over Brackenhirst Road (a section of which will be closed) and travels in a northeast direction before entering a new A73 roundabout to the south. The route then exits the new roundabout to the north before joining up with the dual carriageway section of the A73. An additional arm of the roundabout is provided to the east to access the A73 (Stirling Road) and another arm is provided to the west to access Brackenhirst Road.

***Option E Variation (Option H)***

6.1.23. Option H follows the same route as Option E between the existing Lancaster Avenue/A73 roundabout and the new B803 roundabout. The route exits the roundabout to the northwest crossing the A73 (Stirling Road) (a section of which will be closed) and continues northwards on the westside of the A73.

6.1.24. At Brackenhirst Road the route then enters new roundabout on the south end and exits in a northeast direction to join up with the dual carriageway section of the A73. Two additional arms of the roundabout are provided to the east and west to access Brankenhirst Road.

***Option B2***

6.1.25. Option B2 is approximately 8.75 km in length. The route commences at the existing Lancaster Avenue/A73 roundabout and terminates at the B803 (Greengairs Road) east of the A73.

6.1.26. The route exits the Lancaster Avenue/A73 roundabout in a northeast direction and passes over a watercourse (running north-south) to the west of Bud Shaw Farm, and an area of ancient woodland after 150m. The route continues northwards and passes over another watercourse (running east-west) to the west of Bud Shaw Farm, and another area of ancient woodland.

6.1.27. The route continues northeast and crosses Gartness Road, Craigens Road and Roughrigg Road where a new Roundabout is proposed. The route exits this proposed roundabout, at Roughrigg Road, to the north before travelling in a northwest direction and crossing Stepends Road.

6.1.28. The route continues northwest over farmland and then crosses over North Calder Water. The route then turns northwards and crosses over the Glasgow to Edinburgh via Bathgate railway line.

6.1.29. The route then continues north crossing the A89 (Forrest Street/Airdrie Road) and Ballochney Road. The route then turns northwest and crosses Ballochney Road again, north of Airdriehill Road junction.

6.1.30. The route continues northward crossing a watercourse and Dykehead Road before continuing across Drumshangie Moss. The route then continues in a northward direction with a bend to the east to avoid deep areas of peat.

6.1.31. The route finishes at a new B803 Roundabout. Old Biggar Road will be realigned to the east and will join directly to the B803 to the east of the new route.

***Option B3***

6.1.32. Option B3 is approximately 8.02 km in length. The route commences at the existing Lancaster Avenue/A73 roundabout and terminates at the A73/Raebog Road Roundabout.

6.1.33. The route exits the Lancaster Avenue/A73 roundabout in a north east direction and passes over a watercourse (running north-south) to the west of Bud Shaw Farm, and an area of ancient woodland after 150m. The route continues northwards and passes over another watercourse (running east-west) to the west of Bud Shaw Farm, and another area of ancient woodland.

6.1.34. The route continues north east and crosses Gartness Road, Craigens Road and Roughrigg Road where a new Roundabout is proposed. The route exits this proposed roundabout, at Roughrigg Road, to the north before travelling in a north west direction and crossing Stepends Road.

6.1.35. The route continues north west over farmland and then crosses over North Calder Water. The route then turns northwards and crosses over the Glasgow to Edinburgh via Bathgate railway line.

6.1.36. The route then continues north crossing the A89 (Forrest Street/Airdrie Road) and Ballochney Road. The route then turns northwest and crosses Ballochney Road again, north of Airdriehill Road junction.

6.1.37. The route continues northward crossing a watercourse and Dykehead Road before continuing across Drumshangie Moss. The route then continues in a northwest direction and then finished at the A73/Raebog Road Roundabout.

***Option B4***

6.1.38. Option B4 is approximately 7.18 km in length. The route commences at the existing Lancaster Avenue/A73 roundabout and terminates at the A73 south of Dalmacoulter Landfill Site.

6.1.39. The route exits the Lancaster Avenue/A73 roundabout in a northeast direction and passes over a watercourse (running north-south) to the west of Bud Shaw Farm, and an area of ancient woodland after 150m. The route continues northwards and passes over another watercourse (running east-west) to the west of Bud Shaw Farm, and another area of ancient woodland.

6.1.40. The route continues northeast and crosses Gartness Road, Craigens Road and Roughrigg Road where a new Roundabout is proposed. The route exits this proposed roundabout, at Roughrigg Road, to the north before travelling in a north west direction and crossing Stepends Road.

6.1.41. The route continues northwest over farmland and then crosses over North Calder Water. The route then turns northwards and crosses over the Glasgow to Edinburgh via Bathgate railway line.

6.1.42. The route continues north crossing the A89 (Forrest Street/Airdrie Road) and then heads northwest towards Airdriehill Road. The route then continues northwest crossing a watercourse and Dykehead Road. The route finishes at the A73 between the Dykehead Junction and Dalmacoulter Landfill Site.

# 7. SEA Approach and Methodology

## 7.1. Guidance

7.1.1. This SEA has primarily followed the Scottish Government (2013) SEA Guidance and guidance for SEA themes, where relevant, as described in Section 7.4 (Theme-specific Methodology). Cognisance has also been given to 'A Practical Guide to the Strategic Environmental Assessment Directive' (ODPM, 2005).

7.1.2. The approach for the SEA for the project also broadly aligns with the SEA for North Lanarkshire Council's Proposed Local Development Plan (LDP) due to the relationship of these strategies.

## 7.2. Assessment Overview

7.2.1. Schedule 3 of the Environmental Assessment (Scotland) Act 2005 requires that the following be identified when undertaking a SEA:

- an outline of the contents and main objectives of the plan or programme (as described in Section 6 'Description of Options' above);
- the relationship (if any) of the plan or programme with other qualifying plans and programmes (as described in Section 3 'Legislative and Policy Context' above);
- relevant aspects of the current state of the environment and its likely evolution without the implementation of the plan or programme;
- environmental characteristics of areas likely to be affected;
- relevant existing environmental problems;
- relevant environmental protection objectives at the international, European or national level (as described in Section 3 'Legislative and Policy Context' above);
- the likely significant effects on the environment;
- the measures envisaged to prevent, reduce and as fully as possible offset any significant adverse effects on the environment;
- an outline of the reasons for selecting the alternatives deal with (as described in Section 5 'Development of Options' and Section 7.3 'Alternatives Considered').
- a description of the measures envisaged concerning monitoring; and,
- a non-technical summary.

7.2.2. Accordingly Appendix C (Baseline Information and Assessment) sets out under each theme the relevant legislation, policy and plans, the current state of the environment and the environmental characteristics of the area and its likely evolution without the implementation of the Scheme ('Future Baseline').

7.2.3. Appendix C builds on the baseline information by setting out the likely significant effects of the Scheme on the environment as assessed against the SEA objectives and summarised ('Assessment') and the potential effect interactions between themes will then be set out ('Inter-relationships with Other SEA Themes').

7.2.4. The next section of the report, Section 8 (Environmental Assessment), builds on the baseline information set out in Appendix C by setting out the relevant existing environmental problems ('Key Sustainability Issues') and providing a summary of the environmental impacts and assessment of each theme.

7.2.5. Following the environmental assessment undertaken under each SEA theme, the mitigation, enhancement and monitoring measures will also be set out under each theme, in Appendix C, ('Design Development, Mitigation and Enhancement Recommendations') and summarised in Section 11 (SEA Mitigation and Monitoring).

## 7.3. Alternatives Considered

7.3.1. It is considered that the previous work undertaken for the DMRB Stage 1 Preliminary Assessment appropriately addresses the requirement of the Environmental Assessment (Scotland) Act 2005, Schedule 3 to consider *"reasonable alternatives to the plan or programme"*. The environmental impacts set out at the preliminary assessment stage in relation to the eight strategies were considered as part of the initial sifting stage and again at the options appraisal stage particularly through Appraisal Criteria AC4 ('Reduce levels of traffic-related air pollution within the Chapelhall AQMA') and AC5 ('Minimise intrusion of works on natural environment, cultural heritage and people whilst enhancing the local environment where opportunities arise').

7.3.2. As set out in Section 5 'Development of Options' above, following the initial assessment work, the emerging recommendation was to retain Strategy 4 as the preferred strategy, as it would:

- Improve journey times, reliability and resilience between Cumbernauld and M8.
- Support development opportunities for existing businesses and assist in unlocking stalled development sites.
- Improve road safety for all users.
- Reduce levels of traffic-related air pollution within the Chapelhall AQMA.
- Facilitate improvements to public transport infrastructure and reliability, encouraging modal shift.
- Facilitate improved connectivity between residential areas and centres of economic activity, improving access to employment, education and training opportunities.
- Provide active travel infrastructure linking to existing networks, encouraging modal shift.

## 7.4. Methodology

***Study Area***

7.4.1. As shown on Figure 1 'Key Environmental Constraints', the Study Area for this SEA is located to the south, east and north of the town of Airdrie, North Lanarkshire. The Study Area starts just north of the M8 Junctions 6 and 6A (at the Lancaster Avenue/A73 Roundabout and the B799/B802 Roundabout respectively) and ends north of Riggend where the A73 becomes a dual carriageway. A general Study Area has been defined as a 500m boundary from the

Scheme Options. Where additional sources have been used, they have been further detailed in the table below.

***Baseline***

7.4.2. Online mapping and publicly available resources have been used to identify environmental constraints and inform the 'Current Baseline' and 'Future Baseline'. Sources used include:

- Ordnance Survey (OS) Maps;
- Scotland's Environment website;
- SEPA Water Classification Hub;
- SEPA Flood Maps;
- NatureScot SiteLink;
- National Soil Map of Scotland;
- Historic Environment Scotland website;
- Scottish Forestry Open Data; and
- North Lanarkshire Council GIS data.

7.4.3. Where additional sources have been used, they have been further detailed in the table below.

***Theme-specific Methodology***

7.4.4. Details of the assessment approach and methodology for all SEA themes are outlined in Table 7.1 below.

**Table 7.1 Theme-specific Approach and Methodology**

| SEA Theme | Guidance | Approach and Methodology |
|---|---|---|
| **Biodiversity, Flora and Fauna** | • DMRB LA 108 'Biodiversity' (Highways England, et al., 2020)<br>• 'Guidelines for Ecological Impact Assessment in the United Kingdom and Ireland: Terrestrial, Freshwater and Marine' (CIEEM, 2018) | <u>Desk Study</u><br>A stratified approach was taken when defining the desk study area, based on the likely 'zone of influence' of the Stage 2 Options on different ecological features and an understanding of the maximum distances typically considered by statutory consultees. Accordingly, the desk study sought to identify:<br>• international nature conservation designations within 10 km of the options<br>• national nature conservation designations within 2 km of the options<br>• local sites for nature conservation within 1 km of the options; and,<br>• records of protected and/or notable habitats and species within 1 km of the options.<br><br><u>Phase 1 Habitat Survey</u><br>A Phase 1 habitat survey was carried out in accordance with the standard survey method published by the Joint Nature Conservation Committee (JNCC, 2010), by which areas of land are assigned standard habitat types and ecological notes are recorded. Notes were made for each habitat of dominant, typical and notable plant species, and any relevant ecological characteristics, and these reflect conditions at the time of survey.<br>The surveyors recorded and mapped all habitat types in the Study Area and any relevant ecological features. The Phase 1 habitat survey was extended to search for evidence of protected and/or notable species and to assess the suitability of the habitat present to support such species, including breeding birds. |
| **Population and Human Health** | • DMRB LA 112 'Population and Human Health' | <u>Desk Study</u><br>For the land use and accessibility assessment, the desk study sought to identify: |

| SEA Theme | Guidance | Approach and Methodology |
|---|---|---|
| | (Highways England, et al., 2020) | • Private property;<br>• Community land and assets;<br>• Development and business land;<br>• Agricultural land holdings; and,<br>• Walking, cycling and horse-riding (WCH) provision.<br>For the human health assessment a Community Health Profile Study Area was defined. To present a Community Health Profile Study Area, data at both an Intermediate Zone and Local Authority Area level was used depending on the dataset that was available. Once the Community Health Profile was set it was used to consider weather the options would have positive or negative impacts on specific human health indicators. |
| **Water** | • DMRB LA 113 'Road drainage and the Water Environment' (Highways England, et al., 2020)<br>• Water Framework Directive (WFD) 2000/60/EC. | Desk Study<br>For the water assessment, the desk study gathered the following information (as necessary):<br>• Water quality (surface water);<br>• Water quality (groundwater);<br>• Groundwater level and flow;<br>• Groundwater dependent terrestrial ecosystems (GWDTE's);<br>• Hydromorphology of surface water bodies;<br>• Flood risk (to the Scheme Options);<br>• Flood risk (resulting from the Scheme Options);<br>• Construction phase impacts; and<br>• Compliance with the Water Framework Directive (WFD) 2000/60/EC.<br>This will identify any constraints to be considered in the option analysis and provide an understanding of the key issues and potential impacts associated with the route options. |
| **Soil** | • DMRB LA 109 'Geology and Soils' (Highways England, et al., 2019)<br>• Strategic Environmental Assessment SEPA Guidance Note 2 – Guidance on Consideration of Soil in Strategic Environmental Assessment (SEA) (SEPA, 2019) | The assessment considers the potential for significant effects relating to the disturbance of carbon rich soils, in particular peat; loss of organic matter; soil sealing and soil loss; structural degradation of soils; and soil biodiversity.<br>Professional judgement is used during the assessment in consideration of the baseline, available information on route options, the assessment scoring criteria, and the SEA objective and guide questions. |
| **Air** | • DMRB LA 105 'Air Quality' (Highways England, et al., 2019)<br>• Defra, Air Quality Management Technical Guidance (TG16) (Department for Environment, Food and Rural Affairs, 2018) | For each Scheme Option, the assessment includes the following elements:<br>• construction dust assessment to identify areas that could be adversely affected by construction-phase activities;<br>• local air quality assessment for the operation of the Scheme Option for public exposure receptors and designated habitats sites; and<br>• compliance risk assessment for NO2.<br>The overall aim of the assessment of the elements listed above is to identify potential likely significant air quality effects and the effect of the Scheme Options on the UK's ability to comply with the Air Quality Directive |
| **Climatic Factors** | • DMRB LA 114 'Climate' (Highways England, et al., 2019)<br>• Environmental Impact Assessment Guide to: Assessing Greenhouse Gas Emissions and Evaluating their Significance (IEMA, 2017)<br>• EU Directive 2014/52/EU on the assessment of the effects of certain public and private projects on the environment (European Parliament, 2014) | In the absence of any widely accepted guidance on assessing the significance of the impact effect of GHG emissions, the EIA Guidance published by IEMA in 2017 will be used to guide the Lifecycle GHG Impact Assessment. This provides a framework for the consideration of GHG emissions in the EIA process, in line with the 2014 European Union (EU) Directive. The guidance sets out how to:<br>• Identify the GHG emissions baseline in terms of GHG current and future emissions;<br>• Identify key contributing GHG sources and establish the scope and methodology of the assessment;<br>• Assess the impact of potential GHG emissions and evaluate their significance; and |

| SEA Theme | Guidance | Approach and Methodology |
|---|---|---|
| | • The Climate Change Act 2008 (UK Parliament, 2008) | • Consider mitigation in accordance with the hierarchy for managing project related GHG emissions (avoid, reduce, substitute, and compensate). |
| **Material Assets** | • DMRB LA 110 'Material Assets and Waste' (Highways England, et al., 2019). | The methodology for establishing the material assets and waste baseline has considered:<br>Material assets:<br>• The types and quantities of material use associated with operation of the existing road / site.<br>• The location of mineral safeguard sites and peat resources in relation to the project.<br>• Information on availability of key construction materials required for the project, including the production and use of aggregates, including recycled and secondary aggregates.<br>• Information on the recycling of non-hazardous construction and demolition waste.<br>Waste:<br>• The types and quantities of waste arisings associated with operation of the existing road / site.<br>• The types and quantities of waste generated by the construction industry in Scotland.<br>• Local, regional and national presence and capacity of waste management facilities, including landfill. |
| **Cultural Heritage** | • LA 106 'Cultural Heritage Assessment' (Highways England, et al., 2020) | A study area of 1km around the options was used to identify designated heritage assets in close proximity to the Proposed Scheme. The study area takes account of the sensitivity of the receiving environment and the potential impacts of the options. Designated heritage assets are defined as World Heritage Sites, scheduled monuments, conservation areas, listed buildings, and sites on the Inventory of Gardens and Designed Landscapes and the Inventory of Battlefields. |
| **Landscape** | • DMRB LA 107 'Landscape and Visual Effects' (Highways England, et al., 2020)<br>• Guidelines for Landscape and Visual Impact Assessment (GLVIA), Third Edition, (Landscape Institute and the Institute of Environmental Management and Assessment, 2013)<br>• Fitting Landscapes: securing more Sustainable Landscapes (Transport Scotland, 2014) | A desk-based assessment was undertaken, focussing on nationally and regionally important landscapes and key visual receptors.<br>The options were assessed against the SEA Objective for Landscape and Visual Amenity using professional judgement and best practice.<br>The likely significant effects of the project on the individual landscape and visual receptors were assessed informed by the sensitivity of the receptors (susceptibility to change combined with the value of the receptors) ad the magnitude of change (scale, extent, reversibility and duration). |

## 7.5. SEA Objectives

7.5.1. This SEA has utilised a set of SEA objectives that cover each of the environmental themes scoped into the assessment, as outlined in Table 7.2 below. The SEA objectives were developed following a comprehensive review of both the baseline issues and policy requirement as part of the SEA scoping stage. The SEA objectives have also been developed to align with the High-Level Objectives and relevant Sub-Objectives set out in North Lanarkshire Council's Proposed Local Development Plan (LDP) SEA Environmental Report. They also responded to feedback received from the statutory Consultation Authorities.

## Table 7.2 SEA Framework

| Theme | Proposed LDP High Level Objective | SEA Objective | Assessment Questions |
|---|---|---|---|
| **Biodiversity, Flora and Fauna** | • Safeguard and enhance the environment through the protection of biodiversity<br>• Protect enhance and where necessary restore species and habitat<br>• To ensure the importance of aquatic habitats and resources is recognised and protected | Protect and enhance the natural environment (including the aquatic environment), wildlife, its habitats and other natural features, including internationally and nationally designated sites. | **Will the option/proposal help to:**<br>• Avoid, or if not minimise impacts of new transport infrastructure on designated sites?<br>• Avoid, or if not minimise impacts of new transport infrastructure on nationally important habitats in the wider countryside, such as ancient woodland and Class 1 peatland?<br>• Will the option/proposal protect, or minimise impacts of new transport infrastructure on, wider biodiversity interests, including ecological networks?<br>• Deliver net gains for biodiversity, including restored or improved biodiversity networks? |
| **Population and Human Health** | • Protect the environment from pollution (this includes air, water and land pollution)<br>• Protect and enhance green spaces for recreation and biodiversity<br>• Protect, enhance and create green spaces important for recreation and biodiversity | Improve the health and wellbeing of residents within the Study Area. | **Will the option/proposal help to:**<br>• Avoid and minimise impacts on human health and wellbeing including increased disturbance (noise and light pollution)?<br>• Protect, or minimise impacts on, existing green infrastructure and access to it?<br>• Deliver enhanced green network provision and access to it? |
| | • Reduce the need to travel and journey length | Promote sustainable transport use and reduce the need to travel. | **Will the option/proposal help to:**<br>• Encourage modal shift to more sustainable forms of travel?<br>• Reduce the need to travel? |
| | • To achieve balanced, sustainable land use<br>• Respect landform, natural processes and systems<br>• To promote sustainable communities<br>• To improve quality of life<br>• Regenerate degraded environments, both urban and rural<br>• Respect urban form, settlement pattern and identity<br>• To create a prosperous society where regeneration supports long term sustainable growth<br>• To promote community regeneration | Delivery of a transport infrastructure to meet the foreseeable needs of the varied communities within the Study Area. | **Will the option/proposal help to:**<br>• Maintain and enhance accessibility for all people within the Study area?<br>• Maintain or enhance the quality of life of residents?<br>• Improve accessibility to employment opportunities? |
| **Water** | • To protect and enhance the water environment | Promote the efficient and effective use of natural water resources and protect and enhance the water environment. | **Will the option/proposal help to:**<br>• Support improvements to water quality? |

| Theme | Proposed LDP High Level Objective | SEA Objective | Assessment Questions |
|---|---|---|---|
| | • Protect and enhance the water environment including coastal and river systems<br>• To promote sustainable resource use | | • Support enhancements to the status and/or potential of waterbodies under WFD Directives and successor legislation?<br>• Protect groundwater resources? |
| **Soil** | • To protect the geological resource<br>• To protect the most valuable soils<br>• Protect and use soils in a sustainable way | Promote the efficient and effective use of natural soil resources | **Will the option/proposal help to:**<br>• Assist in facilitating the use of previously developed land?<br>• Avoid the development of the best and most versatile agricultural land?<br>• Protect, or minimise, impacts on carbon rich soils, in particular peat? |
| **Air** | • To ensure air quality meets all legislative and regulatory requirements<br>• Protect the environment from pollution (this includes air, water and land pollution) | Improve air quality within the Study Area | **Will the option/proposal help to:**<br>• Improve air quality within the Chapelhall Air Quality Management Area (AQMA)?<br>• Promote the use of sustainable modes of transport, including walking, cycling and public transport?<br>• Promote the use of low emission vehicles? |
| **Climatic Factors** | • To promote energy efficiency<br>• Assist in the sustainable development of renewable energies | Support climate change mitigation in the Study Area through limiting the contribution of transport to greenhouse gas emissions. | **Will the option/proposal help to:**<br>• Promote the use of sustainable modes of transport, including walking, cycling and public transport?<br>• Promote the use of alternative fuel and/or electric vehicles? |
| | N/A | Support the resilience of the Study Area to the potential effects of climate change, including flooding. | **Will the option/proposal help to:**<br>• Ensure that inappropriate development does not takes place in areas at higher risk of flooding, considering the likely future effects of climate change?<br>• Improve and extend green infrastructure networks in the plan area to support adaptation to the potential effects of climate change?<br>• Sustainably manage water run-off, reducing surface water runoff (either within the Study Area or downstream)?<br>• Ensure the potential risks associated with climate change are considered through new development in the Study Area?<br>• Increase the resilience of biodiversity to the effects of climate change, including through enhancements to ecological networks? |
| **Material Assets** | • To reduce waste<br>• To promote sustainable resource use | Promote the efficient and the efficient and effective use of material resources. | **Will the option/proposal help to:** |

| Theme | Proposed LDP High Level Objective | SEA Objective | Assessment Questions |
|---|---|---|---|
| | • To promote recycling and recovery | | • Encourage recycling of materials and minimise consumption of resources during construction, operation and maintenance of new transport infrastructure? |
| **Cultural Heritage** | • To preserve and interpret cultural heritage resources | Protect and enhance the significance of the historic environment, heritage assets and their settings. | **Will the option/proposal help to:**<br>• Conserve and where possible, enhance buildings and structures of architectural or historic interest?<br>• Conserve, and where possible, enhance conservation areas?<br>• Conserve, and where possible, enhance Scheduled Monuments?<br>• Conserve, and where possible, enhance non-designated heritage assets?<br>• Conserve, and where possible, enhance local diversity and distinctiveness?<br>• Support the integrity of the historic setting of key buildings of cultural heritage interest?<br>• Support access to, interpretation and understanding of the historic environment? |
| **Landscape** | • To improve the quality of the urban and rural landscape<br>• Protect the landform of the area as defined in planning designations and Landscape Character Assessment for Glasgow and the Clyde Valley (GCV)<br>• Protect and where necessary restore landscape character especially those designated as have particular worth<br>• Protect, enhance and where necessary restore landscape character, local distinctiveness and scenic value | Protect and enhance the character and quality of the Study Area's landscapes and townscapes. | **Will the option/proposal help to:**<br>• Conserve the existing landscape and townscape features?<br>• Deliver measures which would enhance or restore the character of the existing landscape or townscape? |

## 7.6. SEA Scoring Criteria

7.6.1. SEA Guidance, primarily Scottish Government (2013), and the specific environmental theme guidance identified in Table 7.1 have been used in conjunction with the SEA Objectives to assess the likely significant effects associated with Scheme Options.

7.6.2. The assessment has been summarised for each SEA theme, with a colour-coded scoring, as shown in Table 7.3. This is accompanied by a narrative that provides the rationale to the scoring. Due to the strategic nature of the SEA and the absence of design details at DMRB Stage 1 and 2, the assessment and narrative is necessarily high-level. Table 7.3 presents a broad summary of the SEA scoring criteria across all SEA themes collectively.

### Table 7.3 Assessment Scoring Criteria

| Score | Description | Key |
|---|---|---|
| Significant positive effect | This Scheme Option has potential for significant environmental enhancement | + + |
| Minor positive effect | This Scheme Option has potential for positive environmental effects, for example by providing opportunities for enhancement. | + |
| Uncertain effect | This Scheme Option has potential for uncertain environmental effects. | ? |
| Neutral effect | This Scheme Option has potential for uncertain environmental effects. | 0 |
| Minor negative effect | This Scheme Option has potential for minor negative effects. | - |
| Significant negative effect | This Scheme Option has potential for significant negative environmental effects. | - - |

## 7.7. Duration of Effects

7.7.1. The SEA Directive requires consideration of the duration of effects, e.g. short-term, medium-term, or long-term effects. For the purposes of this SEA, these are defined in Table 7.4 below, and have been informed by DMRB guidance.

### Table 7.4 Duration of Effects

| Duration | Description |
|---|---|
| Short-term | Construction phase |
| Medium-term | Opening year to design year (Year 1 to Year 15) |
| Long-term | Design year onwards (year 15+) |

7.7.2. As per Schedule 3 of the Environmental Assessment (Scotland) Act 2005, all estimated environmental effect durations are also described as either temporary, permanent, or uncertain in their theme assessments.

# 8. Environmental Assessment

## 8.1. Introduction

8.1.1. This section sets out a summary of the environmental assessment for each of the SEA themes. The full environmental assessment is set out in Appendix C (Baseline Information and Assessment). The key sustainability issues relating to the theme are included below to provide context for the environmental assessment; however a detailed baseline is also provided in Appendix C (Baseline Information and Assessment).

## 8.2. Biodiversity, Flora and Fauna

**Key Sustainability Issues:**

There are **eleven protected ecological sites** with potential relationships within the Study Area; including a Local Nature Reserve (LNR), Sites of Special Scientific Interest (SSSI), Special Areas of Conservation (SAC), Special Protection Areas (SPA) and a Ramsar Wetland.

There are **42 non-statutory designated** Sites of Importance of Nature Conservation (SINC) across the Study Area.

There are large areas of **Ancient Woodland** present throughout the Study Area.

These protected sites support **important habitats**, such as bogs and ancient and native woodland, and important protected species, including otter, badger, bats, water vole and great crested newt.

The drive towards Biodiversity Net Gain (BNG), meeting United Nations (UN) sustainability targets in relation to biodiversity and consideration of Natural Capital in policy will be key to the future protection and enhancement of Scottish biodiversity and the wider natural environment.

8.2.1. This section summarises the potential impacts on biodiversity as a result of the Scheme Options. The full baseline and assessment of this theme can be found in Section C.1 of Appendix C (Baseline Information and Assessment).

8.2.2. As construction methods and working areas for the possible route options have yet to be developed, a precautionary approach has been taken to the potential impacts on biodiversity.

Designated Sites

8.2.3. There are no predicted effects on statutory nature conservation sites from any of the Scheme Options. However, all Scheme Options would likely result in **short-term**, **medium-term** and **long-term significant negative effects** on non-statutory Sites of Importance for Nature Conservation (SINCs), which are designated by North Lanarkshire Council and subject to local policy protection. This is because there are numerous SINCs in the Study Area, and, in addition to the intrinsic value of all the SINCs, several contain priority UK habitats that are also considered important in national policy, namely blanket bog (and associated deep peat) and semi-natural ancient woodland. Other notable habitats are also present in the Study Area, partly

within SINCs, including unimproved neutral grassland and ponds that may support great crested newt, a species known to be present in the Drumshangie Moss vicinity north-east of Airdrie.

Blanket Bog

8.2.4. All Scheme Options except Option B4 (which avoids all impacts on blanket bog) pass through the Drumshangie Moss area, in which blanket bog is the primary ecological interest causing **short-term**, **medium-term** and **long-term significant negative effects**. However, there appears (pending detailed Stage 3 survey) to be a potential pathway approximately 200m east of the current routing of all Scheme Options (other than B3) that would minimise direct impacts on blanket bog. It is likely that it will be impossible for any Scheme Option to completely avoid adverse effects on blanket bog, even if micro-sited favourably. Option B3 takes a different north-westwards route through the Drumshangie Moss area that appears less likely to be able to avoid impacts on blanket bog to the same degree.

Woodland

8.2.5. For all Scheme Options, the effect on ancient woodland is **significant negative** in the **short-term, medium-term** and **long-term** while the effect on other semi-natural woodland and plantation woodland is **minor negative**, this depends on whether bridging of woodland is possible with at least shrub/ground flora retained, and in the case of non-ancient woodland whether compensatory planting is sufficient. Note that for semi-natural ancient woodland, tree planting cannot compensate for loss, hence statements in national policy that such woodland is irreplaceable and of national importance. Scheme Options only affect semi-natural ancient woodland in Fairy Glen (Shotts Burn Glen) SINC, and there may be potential to avoid some of the latter impact by moving the very southern end of the route slightly eastwards.

Protected Species

8.2.6. Of those protected species that are known or considered likely or potentially present (otter, bats, badger, water vole, great crested newt, birds and fish), **significant negative effects** in the **short-term, medium** and **long-term** would likely be rendered neutral with due implementation of licensing and associated mitigation, all of which would likely be standard. Option B4 would likely have the least impact on great crested newt, if any since it avoids all direct impacts on ponds. Similarly, **short-term significant negative effects** arising from unavoidable disturbance of Japanese knotweed, and potentially other invasive plants, is likely also to be rendered neutral through production and implementation of a Biosecurity Management Plan.

8.2.7. The Scheme Options assessment in relation to biodiversity, flora and fauna considers the options against the SEA Objectives and guide questions. Where there are notable differences in effects between the Scheme Options, these are stated.

## 8.3. Population and Human Health

**Key Sustainability Issues:**

**Air quality** and **noise** from transport could result in significant impacts on human health on the population, particularly the more urban areas affected by the East Airdrie Link Road scheme.

There are a number of **areas of high deprivation** within the North Lanarkshire Council area, and these areas would be more vulnerable to changes in the environment.

New transport infrastructure should seek to **improve economic vitality**, **reduce congestion**, and **improve overall quality of life** for residents in the local population centres (Plains, Airdrie, Calderbank and Chapellhall) and **avoid severance** of these communities.

**Access to services** is an important consideration for communities and improved connectivity can reduce health inequalities.

8.3.1. This section summarises the potential impacts on population and human health as a result of the Scheme Options. The full baseline and assessment of this theme can be found in Section C.2 of Appendix C (Baseline Information and Assessment). Each of the options involves the construction of a new road to the south and east of Airdrie. These have been sited primarily through rural areas with fewer people and fewer residential, business and community assets.

8.3.2. The key population and human health effects relate to the presence of Walking, Cycling and Horse Riding (WCH) routes including National Cycling Route 75, Local Development Plan allocations for residential and business uses, and human health effects resulting from changes to landscape amenity

Land-Use and Accessibility

8.3.3. In the **short-term**, all Scheme Options will likely see disruption to land-use and accessibility receptors as a result of temporary land-take to accommodate construction compounds and temporary diversions which may cause delays for local businesses, communities and residential receptors. All options will result in land-take during construction which may be slightly larger than the operational land-take, however the extent of this is not known at present so for the purposes of this assessment options have been assessed as having the same impact during both construction and operation.

8.3.4. In the **medium-term** and **long-term**, Options B, E and B2 will result in a permanent **minor negative effect** on private property and housing as a result of partial acquisition of designated housing land (Site 0001/07 as designated in the Proposed LDP) and a permanent **significant negative effect** on development land and businesses as a result of the partial acquisition of a site designated in the Proposed LDP for a Potato Processing Factory (Site NLC00585)

8.3.5. While all of the Scheme Options will require acquisition of agricultural land, they are primarily situated in moorland and brownfield land with sections in non-prime agricultural land (Class 4.1 and 4.2). This land can be regarded as of low sensitivity resulting in an overall **neutral** on agricultural holdings in the **medium-term** and **long-term**

8.3.6. All of the Scheme Options will impact National Cycle Route (NCR) 75, Core Paths and Rights of Way (RoW) at several points throughout their routes. Due to the lack of detail at this stage it is assumed any impact on WCH provision will be result in a moderate change to journey length (i.e. a change of between 250m and 500m).

8.3.7. NCR75 due to its national designation is of very high sensitivity as a result all Scheme Options will have a **significant negative effect** in the **medium-term** and **long-term** on the route.

8.3.8. All options will have a **significant negative effect** in the **medium-term** and **long-term** on two RoW (along the Edinburgh-Glasgow Railway and the Plains to Airdrie route), while Option B4 will have additional impact on a RoW linking the Plains to Airdrie route with Airdriehill Road.

8.3.9. Core paths are of high sensitivity due to their regional designation, as a result, all options will have **significant negative effect** in the **medium-term** and **long-term** on core paths in the area. Option B4 will impact three core paths (201, 162, and 178). Options E, B2 and B3 will all impact four core paths (201, 162, 178, and 159 [at two separate points]). Option B will impact six core paths (201, 162, 178, and 159 [at two separate points] and 157 and 158).

Human Health

8.3.10. Due to the high COPD incidence, the high percentage of the population claiming incapacity benefit/severe disability allowance and the high percentage of the population who are income deprived the community within the Study Area are assessed as being of high sensitivity.

8.3.11. All Scheme Options will result in a **minor negative effect** on the transport network in the **short-term** due to construction activity; however, in the **medium** and **long-term** the Scheme Options would result in a **minor positive effect** as a result of improvements to the transport network including the spatial characteristics and the usage of the network.

8.3.12. All options will have a permanent **minor negative effect** on health as a result of significant changes to the landscape amenity.

8.3.13. A qualitative construction noise assessment has been undertaken using available information. Owing to the relatively close proximity of the nearest residential receptors to the construction works, there is potential for construction related noise and vibration to have a **short-term minor negative effect** at the small number of properties near the Scheme Options.

8.3.14. Noise modelling has been undertaken to predict the operational road traffic noise levels for the Study area both with and without the Scheme Options in place. The potential short term and long-term operational noise impacts at properties within a 600m study area around the combined extent of all route options has been quantitatively assessed with **medium** to **long-term** positive and **negative significant effects** have been predicted as a result of all options. For the purposes of scoring this impact the worst-case scenario has been taken.

8.3.15. During both daytime and night-time, Options B2, B3 and B4 are predicted to result in the least number of significant negative effects, with Options B and E being predicted to result in a slightly greatest number. This is based upon the scheme option alignments and traffic data currently available.

## 8.4. Water

**Key Sustainability Issues:**

Scotland's Water Environment is **essential** for all life and activity, ranging from drinking water to maintaining habitats and supporting a significant part of the economy.

**Waterbodies** across the Study Area experience pressures from different sources such as industry, pollution and man-made barriers, as well as unknown sources.

The scheme provides an opportunity to implement **sustainable drainage systems** where none currently exist and would likely ensure that the road network remains fully functional at times of flood through design that accounts for climate change adaptability requirements.

8.4.1. This section summarises the potential impacts on water as a result of the Scheme Options. The full baseline and assessment of this theme can be found in Section C.3 of Appendix C (Baseline Information and Assessment).

8.4.2. This section sets out the potential for impact from a range of defined Scheme Options under consideration upon the water environment of the River Clyde catchment, in line with the Design Manual for Roads and Bridges (DMRB) LA 113 Road Drainage and the Water Environment , which sets out the requirements associated with the assessment and management of potential environmental impacts on the water environment from highway construction, operation, improvement and maintenance, and aligns with the requirements of the Water Framework Directive (WFD) (2000/60/EC) as amended by Directives 2008/102/EC, 2013/19/EU and 2014/101/EU. The WFD introduced a holistic approach to the management of water quality, and requires the protection and enhancement of all aspects of the water environment including rivers, lakes, estuaries, coastal waters and groundwater.

8.4.3. All watercourses in the Study Area are located in the River Clyde catchment and flow in a western direction towards the Firth of Clyde. The principal watercourses include the Luggie Water, South Burn, Shotts Burn, North Calder Water and Monkland Canal. There are several named watercourses which are tributaries to the principal watercourses and include the Clattering Burn, Cameron Burn, and North Burn.

Surface Water Quality

8.4.4. In the **short-term**, the Scheme Options would result in **minor negative effects** on surface water quality at the Luggie Water (includes Shank Burn and Cameron Burn), the South Burn, the Shotts Burn (including the Clattering Burn), and the North Calder Water (including the Kennel Burn and the North Burn) as a result of soil disturbance and contamination. While in the **medium-term** and **long-term**, the Scheme Options would result in **minor negative effects** on surface water quality at the Luggie Water (includes Shank Burn and Cameron Burn), the South Burn, the Shotts Burn (including the Clattering Burn), and the North Calder Water (including the Kennel Burn and the North Burn) as a result of outfalls from road drainage networks and road maintenance works causing a reduction in surface water quality due to the introduction of particles and pollutants.

Flood Risk

8.4.5. In the **short-term**, temporary localised increases in runoff rates and volumes may be caused by excavations, exposure of bare ground, construction of less permeable surfaces and potentially by compaction of soils caused by movement of construction machinery and traffic. While in the **medium-term** and **long-term**, permanent increases in impermeable surface areas within river catchments can lead to increased runoff volume and rates and can cause downstream flooding. Road schemes built within the natural floodplain of a watercourse can cause downstream flooding due to loss of flood storage area. Further, the effects of climate change may lead to increased surface run off and flooding in the future. These increases in runoff rates and volumes can accumulate and lead to increased risk of downstream flooding (as well as adverse impacts on water quality as outlined above) resulting in **minor negative effects** on flooding at the Luggie Water (includes Shank Burn and Cameron Burn), the South Burn, the Shotts Burn (including the Clattering Burn), and the North Calder Water (including the Kennel Burn and the North Burn).

Groundwater Quality and Flow

8.4.6. Alterations in surface flow characteristics and the presence of less permeable areas have the potential to impact infiltration rates and therefore groundwater recharge rates. All options are assessed to have a **short-term**, **medium-term** and **long-term minor negative effect** on groundwater quality and flow of the Glasgow and Motherwell Aquifer. While Options B and E are assessed to have a permanent **short-term**, **medium-term** and **long-term minor negative effect** on groundwater quality and flow of the Glenboig Aquifer and the Slamannan Aquifer.

## 8.5. Soil

**Key Sustainability Issues:**

Soil is a key part of our environment and **soil degradation** can have major implications for air and water quality as well as our climate, biodiversity, and economy.

Soils in Scotland are rich in organic matter and account for over 50% of the UK's soil carbon.

Within the Study Area the soils are predominantly clayey and sandy loam. **Peat and locally peaty soil** types are also present at various points across the Study Area appearing in small deposits. Large deposition of peat and peaty soil can be found in the Drumshangie Moss area and north of Plains.

Scotland's soils are under pressure from the effects of **climate change and changes in land-use and land management**.

8.5.1. Soil type is a major determining influence on the agricultural worth of an area of land. Soils and geology play an important part in determining the environmental character of an area. The nature and alignment of soils and rocks has a major influence on landforms and subsequent road development. It is therefore important that the potential impacts of development on these environmental factors are considered fully.

8.5.2. This section summarises the potential impacts on soil as a result of the Scheme Options. The full baseline and assessment of this theme can be found in Section C.4 of Appendix C (Baseline Information and Assessment).

Designated Sites

8.5.3. There are no designated or non-designated sites such as Sites of Special Scientific Interest (SSSI) or Regionally Important Geological Sites (RIGS) in the Study Area.

Superficial Geology

8.5.4. All of the Scheme Options will involve construction of earthworks in the form of embankments placed on existing ground or cuttings excavated through superficial deposits. Where excavated materials are considered suitable for re-use, superficial deposits may be excavated to provide material for embankment construction. During construction of embankments and cuttings, the earthworks would temporarily be exposed and vulnerable to erosion and ground movements until vegetation establishes. The superficial geology within the Study Area is of low value; however due to the large volume of earthworks required the Scheme Options would result in a **short-term minor negative effect** on the superficial geology of the area. Similar to the construction phase, the presence of compressible soils and soils with inadequate performance characteristics may lead to localised failure which could be possible during the operation phase of the scheme resulting in **medium-term** and **long-term minor negative effect**.

Soil

8.5.5. All of the Scheme Options will result in the loss of mixed agricultural land across the Study Area. The agricultural land within the Study Area is Class 4.2 land (Mixed Agriculture land) and considered low value. Compaction as a result of construction machinery activity would occur in the vicinity of the construction works. Soil compaction would result in impeded drainage and subsequent waterlogging. This, combined with the 'ploughing' effect caused by construction machinery, would inhibit vegetation growth, both during and immediately after the construction phase. However, affected land should be restored during the next ploughing season. Overall, this would result in a **minor negative effect** in the **short** to **medium-term**.

Contamination

8.5.6. Remediation of disused mine works and shafts will potentially require stabilisation using sub-surface grouting. This would have further implications on the groundwater regime in the area and potential contamination of the water environment would have to be mitigated. Construction process controls for potentially contaminated mine gases and mine waters are also likely to be necessary. At this stage, treatment areas have not been confirmed and migration pathways for contaminated water and gas are unknown, however, there is a potential for these to impact on ground and surface water quality, local ecology and human health. As the Coal Measures bedrock is classed as a moderately productive aquifer, it is considered to be of medium value. Due to the presence of various watercourses this may result in **short-term minor negative effects**. During operation, in areas where grouting has been undertaken there would be **medium-term** and **long-term minor negative effects**.

Human Health

8.5.7. A review of available historical maps has confirmed that within the Study Area, both former and present land uses may have resulted in the presence of potentially contaminated material which

may in turn, pose a threat to human health, controlled waters of other sensitive receptors resulting in a **short-term significant negative effect** on human health. These areas of potentially contaminated land may also impose constraints on the construction and operational phases of the road should require excavation or avoidance. Once the road has been constructed, the majority of the potential pollutant linkages will be broken by the road construction either acting as a barrier or due to the removal of identified contaminated materials encountered during the construction works. This may result in **medium-term** and **long-term minor positive effects**.

Mine Workings and Minerals

8.5.8. The Study Area is underlain by bedrock containing economic minerals and has been subject to extensive historical mineral extraction, in the form of underground and opencast mining of coal, ironstone and fireclay. Options B, B2, B3 and B4 would result in a short-term minor negative effect on any remaining mineral resources due to the localised sterilisation of potential future opencast coal workings. During the medium and long-term, Options B, B2, B3 and B4 would offer improved connectivity to the road network for future mineral extraction sites resulting in a minor positive effect.

8.5.9. Construction activities associated with stabilisation of underground mine workings, mine entries and backfilled opencast workings can be considered to have an overall **medium-term** and **long-term minor positive effect**, improving land otherwise considered 'marginal' for development. However, the potential for **short-term minor negative effects** associated with bulk/pressure grouting of mine workings and mine entries will require careful management through site specific method statements addressing factors such as grout run off/migration and the control of mine gases and mine waters.

## 8.6. Air

**Key Sustainability Issues:**

Poor air quality can have detrimental impacts on **human health** and **quality of life**.

The transport sector is the most significant source of **air pollution** in the UK.

Air Quality Management Areas (AQMA) are designated by local authorities in areas where Air Quality Objectives (AQOs) are not (or are unlikely to be met). There are currently **four designated AQMAs** within North Lanarkshire including one within the Study Area (Chapelhall AQMA).

8.6.1. This section summarises the potential impacts on air as a result of the Scheme Options. The full baseline and assessment of this theme can be found in Section C.5 of Appendix C (Baseline Information and Assessment). A construction phase assessment of dust emissions and a local operational phase assessment have been undertaken, based on the Design Manual for Roads and Bridges (DMRB).

Construction Air Quality Impacts

8.6.2. During the construction phase mitigation controls have been identified to minimise the effect of dust so the overall significance of the construction phase assessment will be negligible and not

significant for all options. Taking into consideration the number of receptors located within 200m of the options which have the potential to be adversely affected by dust, the options were ranked as B4 (most preferable), B3, B2, E, B (least preferable).

8.6.3. The construction dust assessment determined that there are **minor negative** air quality effects during the **short-term** for human health of designated habitats during the construction of the Scheme Options with appropriate best practice mitigation measures. Taking into consideration the number of sensitive receptors located within 200m of the boundary of the scheme options, the options have been ranked as follows: B4 (most preferable), B3, B2, E, B.

Operational Air Quality Impacts

8.6.4. The operational phase impacts have been predicted at human receptors and designated habitats for each Scheme Option. At human receptors the impact was considered to be not significant for $NO_2$ $PM_{10}$ and $PM_{2.5}$ for all Scheme Options. A compliance risk assessment concluded there is no risk to the reported date of compliance with the Air Quality Directive with any option. For the operational phase the options were ranked B (most preferable), E, B3 and B4 were similar followed by B2 (least preferable).

8.6.5. The operational phase assessment determined that there is no likely significant air quality effect for human health or designated habitats during the operation of the Scheme. The conclusion of the compliance risk assessment is that the Scheme Options will not affect the UK's reported ability to comply with the Air Quality Directive in the shortest timescale possible due to either the construction of the operation of the Scheme Options. Therefore, the effect of the Scheme Options on human receptors is considered to be **minor negative** during the **medium** and **long-term** for air quality.

8.6.6. For all Scheme Options, the large decreases in annual mean $PM_{10}$ and $PM_{2.5}$ are anticipated within the Chapelhall AQMA. This is due to vehicles re-routing onto the Scheme, in preference of the A73 through Chapelhall and Airdrie, thus resulting in a decrease in vehicles using Main Road (A73) through the Chapelhall AQMA. The largest decrease in concentration was predicted at Main Street, Chapelhall, for all Options. Decreases of between 1.0µg/m$^3$ (Option B) and 0.9µg/m$^3$ (Option B2) in annual mean $NO_2$ concentration were predicted. The reduction in AADT on this road due to the Scheme were predicted to be between approximately 3,500 (Option B) and 2,500 (Option B2). This leads to a reduction of annual mean $PM_{10}$ and $PM_{2.5}$ concentrations in an existing area of concern. Therefore, the effect of the Scheme Options on the Chapellhall AQMA is considered to be **minor positive** during the **medium** and **long-term** for air quality.

8.6.7. Predicted $NO_X$ concentrations and nitrogen deposition rates, and changes in $NO_X$ concentrations and nitrogen deposition rates attributable to the Scheme Options for designated habitats has been carried out. At all sites the air quality effect is not significant because *"the change in nitrogen deposition associated with the proposed scheme will not lead to the loss of one species"* LA105 (Highways England, 2019). Therefore, a conclusion of **minor negative** during the **medium** and **long-term** air quality effects for designated habitats sites is recorded.

## 8.7. Climatic Factors

**Key Sustainability Issues:**

The Climate Change (Emissions Reduction Targets) (Scotland) Act 2019 amended the **greenhouse gas emissions targets** in the Climate Change (Scotland) Act 2009, and set a 'net zero' target emissions year of 2045.

Transport is estimated to account for 25% of Scotland's total **energy use**, contributing to climate change.

Scotland's annual rainfall has increased approximately 13% above the average for the early 1900s, and increased precipitation, and intense periods of rainfall may result in **flooding** events (fluvial and surface water) and disrupt operation of the Scheme.

Key long-term **climate change** trends for Scotland are that weather may become more variable, typical summers will be hotter and drier, winter and autumn will be milder and wetter and sea levels will continue to rise.

8.7.1. This section summarises the potential impacts on climatic factors as a result of the Scheme Options. The full baseline and assessment of this theme can be found in Section C.6 of Appendix C (Baseline Information and Assessment). The climate assessment considers the potential impacts of the proposed set of Scheme Options on the climate and the vulnerability of the options to climate change.

Construction GHG Emissions

8.7.2. When considering the greenhouse gas (GHG) emissions from construction, due to their shorter routes, Option B3 is considered the best performing option in relation to this SEA theme, followed by B4 and then B2. Although suggested mitigation measures will minimise GHG emissions, there will be unavoidable GHG emissions resulting from the construction of any of the Scheme Options. This would result in a **minor negative effect** on **short-term** GHG emissions.

Operational GHG Emissions

8.7.3. When considering GHG emissions from vehicle use, Option B3 is the best performing option in relation to this SEA theme of the five options assessed and Option E is likely to generate the greatest emissions. For other GHG emissions from operations and maintenance (including repair, replacement and refurbishment), Option B4 is considered the best performing option in relation to this SEA theme followed by B2 and B3. However, it is noted that it is likely that the majority of GHG emissions during operation will come from road users. Option E is likely to generate the greatest emissions. This would result in a **minor negative effect** on **medium-term** and **long-term** GHG emissions from vehicles.

8.7.4. For other GHG emissions from operations and maintenance (including repair, replacement and refurbishment), B4 is considered the best performing option in relation to this SEA theme followed by B2 and B3. However, it is noted that it is likely that the majority of GHG emissions during operation will come from vehicles. This would result in a **minor negative effect** on **medium-term** and **long-term** GHG emissions from operations and maintenance.

Climate Change Resilience

8.7.5. All Scheme Options have the potential to impact the climate and be impacted by a changing climate during construction and operation; however, with the information available at this stage, it is anticipated that these will not be significant. At this stage, based on the detail of information available, it is assumed that climate change will have a **minor negative effect** in the **medium** and **long-term** on the Scheme Options. However, this will be reviewed during subsequent assessments.

## 8.8. Material Assets

**Key Sustainability Issues:**

The road network plays an essential role in **enabling mobility** in the North Lanarkshire Council area.

Other key transport assets in the region include the **Glasgow to Edinburgh via Bathgate railway line** (providing a rail link from Airdrie to Glasgow and Edinburgh) and **National Cycle Network Route 75**.

The primary mineral resources extracted include **hard rock**, **peat** and **coal**.

There are **79 waste management sites** in the North Lanarkshire Council area, five of which are located within the Study Area.

The **changing climate** is expected to affect material assets in future years due to the predicted increase in annual rainfall for Scotland and more frequent, higher intensity rainfall events.

8.8.1. This section summarises the potential impacts on material assets as a result of the Scheme Options. The full baseline and assessment of this theme can be found in Section C.7 of Appendix C (Baseline Information and Assessment). The material assets assessment considers the potential impacts of the Scheme Options on both the built environment (infrastructure) and natural environment (watercourses, forestry, minerals, and agricultural land), and the usage of raw materials and energy required to construct the scheme and the waste produced by the scheme.

Built Environment

8.8.2. During construction there is likely to be disruption on the existing road network due to construction activities. This would affect the operation of the route, causing delays to road users travelling in the vicinity of the scheme. This effect would be a **short-term minor negative effect**.

Natural Environment

8.8.3. The key geological environmental effects relate to the historic mining industry that was prevalent within the Study Area. The Study Area is underlain by bedrock containing economic minerals and has been subject to extensive historical mineral extraction, in the form of underground and opencast mining of coal, ironstone and fireclay. Options B, B2, B3 and B4 would result in a **short-term minor negative effect** on any remaining mineral resources due to the localised sterilisation of potential future opencast coal workings. During the **medium** and **long-term**, Options B, B2, B3 and B4 would offer improved connectivity to the road network for future mineral extraction sites resulting in a **minor positive effect**.

8.8.4. The presence of shallow underground workings and associated mine entries and backfilled opencast workings is anticipated beneath and/or within influencing distance of the Scheme Options, with all options affected to a similar degree. In particular the presence of opencast mining is noted within the area known as Drumshangie Moss. It is likely that all of the Scheme Options, except Option B4, will encounter opencast mining within this area. Construction activities associated with stabilisation of underground mine workings, mine entries and backfilled opencast workings can be considered to have an overall **medium-term** and **long-term minor positive effect**, improving land otherwise considered 'marginal' for development. However, the potential for short-term minor negative effects associated with bulk/pressure grouting of mine workings and mine entries will require careful management through site specific method statements addressing factors such as grout run off/migration and the control of mine gases and mine waters.

8.8.5. As set out in Section 8.5 (Soils), all of the Scheme Options will result in the loss of mixed agricultural land across the Study Area. The agricultural land within the Study Area is Class 4.2 land (Mixed Agriculture land) and considered low value. Compaction as a result of construction machinery activity would occur in the vicinity of the construction works. Soil compaction would result in impeded drainage and subsequent waterlogging. This, combined with the 'ploughing' effect caused by construction machinery, would inhibit vegetation growth, both during and immediately after the construction phase. However, affected land should be restored during the next ploughing season. Overall, this would result in a neutral effect in the short and medium-term.

8.8.6. There are no known active peat extraction sites within 1km of any of the Scheme Options.

8.8.7. As set out in Section 8.4 (Water), the scheme would be expected to create additional impermeable road surface area, reducing the area for natural flood management. Removal of soils could also alter the natural hydrology within the Study Area.

Materials

8.8.8. Construction of the elements that make up the project such as the carriageway, viaducts and road junctions would have significant raw material and manufactured material requirements. Raw materials used in road construction include aggregates and manufactured materials including steel, concrete and tarmacadam. Manufacture of these materials would have an embodied carbon content from consumption of finite materials and energy consumption in the manufacturing process. The construction of the project would also consume energy from the activities on site, causing emissions from hydrocarbon combustion in plant and machinery.

8.8.9. Table 8.1 'Potential Material Use and Waste Arisings from the Construction of the Scheme' below summarises the likely types of materials used and wastes that may potentially be generated during construction of the Proposed Scheme. Future design development will enable further quantification of material use and waste arising from the selected option.

### Table 8.1 Potential Material Use and Waste Arisings from the Construction of the Scheme

| Project Activity | Material Resources Used | Potential Waste Arisings |
|---|---|---|
| Site remediation/ preparation/ earthworks | Fill material for construction purposes.<br>Primary/secondary/recycled aggregates for ground stabilisation.<br>Topsoil and subsoil for landscaping and restoration. | Surplus excavated materials.<br>Surplus topsoil and subsoil.<br>Unsuitable and contaminated soils and excavated materials.<br>Vegetation/wood from site clearance.<br>Clearance of redundant highway infrastructure. |
| Demolition | Materials are not required for demolition works | Waste arisings from the demolition of any existing buildings or structures and alterations to infrastructure |
| Site construction | Construction materials including:<br>- aggregates;<br>- asphalt and bituminous materials;<br>- in-situ cast concrete;<br>- precast concrete products;<br>- structural steelwork;<br>- steel reinforcing bar;<br>- timber and timber products;<br>- geotextile;<br>- drainage systems;<br>- fencing and barriers. | Packaging from materials delivered to site.<br>Excess, offcuts and broken/ damaged construction materials.<br>Existing highway infrastructure and technology removed during works.<br>Construction worker wastes from offices and rest areas/canteens.<br>Waste oils from construction plant. |

8.8.10. Scheme Options design includes limited information on the quantities of the main materials to be used in construction and estimates of waste arisings to inform the assessment of environmental effects.

8.8.11. Estimates of the earthworks cut and fill balance for each Scheme Option are set out in Table 8.2 'Estimated Earthworks Cut and Fill Balance' below.

### Table 8.2 Estimated Earthworks Cut and Fill Balance

| Option | Total volume of cut required (m3) | Total volume of fill required (m3) | Suitable cut reused onsite (m3) | Cut exported (m3) | Fill imported (m3) |
|---|---|---|---|---|---|
| B | 778,925 | 658,903 | 634,670 | 144,255 | 24,232 |
| E | 841,408 | 813,064 | 679,007 | 162,400 | 134,057 |
| B2 | 756,968 | 620,868 | 620,868 | 135,378 | 0 |
| B3 | 687,659 | 588,551 | 554,445 | 133,214 | 34,105 |
| B4 | 773,496 | 560,209 | 560,209 | 213,287 | 0 |

8.8.12. Data available on the quantity of materials required for construction of each Stage 2 Options is limited to the main pavement materials, as set out in Table 8.3 'Estimated Pavement Construction Materials' below.

### Table 8.3 Estimated Pavement Construction Materials

| Option | Subbase | | Pavement (flexible) | | | | | |
|---|---|---|---|---|---|---|---|---|
| | Type 1, granular material | | Dense Bitumen Macadam Base course | | Dense Bitumen Macadam Binder course | | Rolled Asphalt Surface Course | |
| | Density: 1.9t/m$^3$ | | Density: 2.4t/m$^3$ | | Density: 2.4t/m$^3$ | | Density: 2.4t/m$^3$ | |
| | m$^3$ | tonnes | m$^3$ | tonnes | m$^3$ | tonnes | m$^3$ | tonnes |
| B | 14,870 | 28,254 | 21,810 | 52,344 | 9,914 | 23,793 | 3,965 | 9,517 |

| Option | Subbase | | Pavement (flexible) | | | | | |
|---|---|---|---|---|---|---|---|---|
| | Type 1, granular material | | Dense Bitumen Macadam Base course | | Dense Bitumen Macadam Binder course | | Rolled Asphalt Surface Course | |
| | Density: 1.9t/m$^3$ | | Density: 2.4t/m$^3$ | | Density: 2.4t/m$^3$ | | Density: 2.4t/m$^3$ | |
| | m$^3$ | tonnes | m$^3$ | tonnes | m$^3$ | tonnes | m$^3$ | tonnes |
| E | 18,283 | 34,737 | 26,815 | 64,355 | 12,188 | 29,252 | 4,875 | 11,701 |
| B2 | 13,110 | 24,909 | 19,228 | 46,146 | 8,740 | 20,976 | 3,496 | 8,390 |
| B3 | 12,135 | 23,057 | 17,798 | 42,715 | 8,090 | 19,416 | 3,236 | 7,766 |
| B4 | 10,268 | 19,510 | 15,060 | 36,144 | 6,845 | 16,429 | 2,738 | 6,572 |

*Source: Material density assumptions sourced from Waste & Resources Action Programme (WRAP), Designing Out Waste Tool for Civil Engineering.*

8.8.13. Overall, all Scheme Options would lead to a **short-term minor negative effect** as a result of the consumption of finite primary aggregate resources. However, encouraging the use of recycled and secondary aggregates would reduce waste disposal to landfill and reduce the consumption of finite primary aggregate resources.

Waste

8.8.14. Landfill capacity is a finite resource and is the least preferred management option in the waste hierarchy. Scheme Options may result in significant reduction in Scottish landfill capacity if mitigation measures are not viable.

8.8.15. The Scheme Options design does not include estimates of construction and demolition waste. All of the Scheme Options are expected to require only limited demolition of buildings and infrastructure and a high proportion of any inert waste generated from such demolition is likely to be recycled for use within the Proposed Scheme. Indicative estimates of total non-hazardous construction waste arisings have been determined by using an industry benchmark, based on the estimated construction cost for each of the Scheme Options, of 16 tonnes per £100,000[6], as shown in Table 8.4 'Estimated Construction Waste Arising'.

### Table 8.4 Estimated Construction Waste Arising

| Option | Construction cost estimate (£million)[7] | Non-hazardous construction waste arising estimate (tonnes) |
|---|---|---|
| B | 110 | 17,555 |
| E | 134 | 21,513 |
| B2 | 103 | 16,400 |
| B3 | 97 | 15,478 |
| B4 | 82 | 13,169 |

[6] Standard practice (Infrastructure) non-hazardous construction waste (excluding demolition and excavation) generation targets, from Resource Efficient Scotland, January 2017. Procuring Resource Efficient Construction Projects: Model procurement wording for public and private sector clients and contractors on construction projects. Available at https://www.zerowastescotland.org.uk/sites/default/files/Procuring%20resource%20efficient%20construction%20projects_0_0.pdf

[7] Construction cost estimate conservatively applies the worst-case cost estimate

8.8.16. Overall, all Scheme Options would lead to a **short-term significant negative effect** as a result of the reduction or alteration of landfill capacity.

## 8.9. Cultural Heritage

**Key Sustainability Issues:**

There are a number of designated heritage assets present within the Study Area, including eight **listed buildings** and four **Scheduled Monuments**. New transport infrastructure proposed through the East Airdrie Link Road scheme has the potential for beneficial or adverse effects on these designated heritage assets and the wider historic environment.

8.9.1. This section summarises the potential impacts on cultural heritage as a result of the Scheme Options. The full baseline and assessment of this theme can be found in Section C.8 of Appendix C (Baseline Information and Assessment).

8.9.2. Potential impacts to heritage assets were assessed using available online resources and the North Lanarkshire Historic Environment Record. There are 12 designated assets recorded within the 1km of the Scheme Options. This includes four scheduled monuments and eight listed buildings.

8.9.3. Option B4 has the potential to physically impact two non-designated assets (25 and 26) during the construction of the route. Further evaluation would include undertaking archaeological surveys, such as geophysical survey, to identify the extent of surviving buried features.

8.9.4. Options B, E, B2 and B3 will not have a direct impact on any know archaeological heritage assets; however, all options will have the potential to physically impact previously unrecorded archaeology.

8.9.5. All options will result in a **short-term, medium-term and long-term minor negative effect** on cultural heritage assets.

## 8.10. Landscape

**Key Sustainability Issues:**

Landscapes are a significant part of the country's **cultural** and **natural heritage**, contributing to the economy and the wellbeing of the population.

The Scheme Options have the potential to result in **both direct** and **indirect change** to the **landscape character** of the Study Area.

The main pressures that influence the character of the landscape are land use intensification, incremental development, climate change and climate change adaptation, and biosecurity threats.

8.10.1. This section summarises the potential impacts on landscape as a result of the Scheme Options. The full baseline and assessment of this theme can be found in Section C.9 of Appendix C (Baseline Information and Assessment).

Landscape Character

8.10.2. Each of the route options would result in both direct and indirect change to the landscape character of the Study Area. No landscape designations were identified within the Study Area and therefore the assessment of landscape character effects is based on the following five Local Landscape Units (LLUs): Incised Valley: North Calder Water; Fragmented Farmland: Area East of Airdrie; Northern Plateau Farmland; Southern Plateau Farmland; and Plateau Moorlands.

8.10.3. Each of the Scheme Options would result in a **minor negative effect** in the **short** to **long-term** on the Area East of Airdrie LLU and the Northern Plateau Farmlands LLU. However, given the existing context of road infrastructure, influence of adjacent settlement and low sensitivity of this landscape the effect would be reduced.

8.10.4. Options B, E, B2 and B3 would result in a **minor negative effect** in the **short** to **long-term** on the Plateau Moorlands LLU. This is partially as a result of an existing context of road infrastructure or other development within these landscapes, the underlying scale and pattern of the landscape and/or the small extent of change relative to the wider extent of the LLUs.

Visual Amenity

8.10.5. In general, each of the Scheme Options would result in significant visual effects on one or more visual receptor groups.

8.10.6. Options B and E would give rise to **short-term** to **long-term significant negative effects** on four of the receptor groups, including Riggend, Plains, rural properties east of Airdrie and rural properties east of Chapelhall receptor groups. Although Option E variations (Options E1, G and H) would result in reduced negative effects on the receptor groups at Riggend there would be increased effects on receptor groups at Brankenhirst Road (Mosshouse) and properties in the south of this group, including Rigghead.

8.10.7. While Options B2, B3 and B4 would also give rise to **short-term** to **long-term significant negative effects** they would impact the fewest number of receptor groups, in part due to their shorter length. Options B2 and B3 would result in significant negative effects on the following three receptor groups: Plains, rural properties east of Airdrie and rural properties east of Chapelhall receptor groups. While Option B4 would result in significant negative effects on the Northeast of Airdrie, rural properties east of Airdrie and rural properties east of Chapelhall receptor groups.

## 8.11. Summary

8.11.1. A summary of the environmental effects by Scheme Option as set out in Appendix C (Baseline Information and Assessment) is provided in Table 8.5 below.

## Table 8.5 Summary of Environmental Effects

**Biodiversity, Flora and Fauna**

**Impacts across all Options**

- Significant negative effect on non-statutory Sites of Importance for Nature Conservation (SINCs) during construction and operation.
- Minor negative on non-statutory Sites of Importance for Nature Conservation (SINCs) through pollution/hydrological effects during operation.
- Significant negative effect on ancient woodland during construction and operation.
- Minor negative effect on commercial conifer plantation and on additional woodland across the North Calder Water during construction and operation.
- Minor negative effect on North Calder Water with one crossing, and one crossing of the small Shotts Burn and upper part of Clattering Burn during construction and operation.
- Significant negative effect arising from unavoidable disturbance of Japanese knotweed, and potentially other invasive plants during construction (likely also to be rendered neutral through production and implementation of a Biosecurity Management Plan).
- Significant negative effect on protected species that are known or considered likely or potentially present (otter, bats, badger, water vole, great crested newt and fish) during operation (likely be rendered neutral with due implementation of licensing and associated mitigation).
- Minor negative effect on bats during construction (likely be rendered neutral with due implementation of licensing and associated mitigation).
- Significant negative effect on otter, badger or water vole refuges during construction (likely be rendered neutral with due implementation of licensing and associated mitigation).
- Minor negative effect on bats during construction (likely be rendered neutral with due implementation of licensing and associated mitigation).
- Significant negative effect due to potential breeding disturbance of Schedule 1 bird species during construction such as kingfisher, peregrine falcon, or barn owl, if present in suitable habitat in the Study Area.
- Minor negative effect due to potential breeding bird suppression near operational road through noise effects.
- Significant negative effect on the fish population during construction (likely be rendered neutral with due implementation of licensing and associated mitigation).

**Impacts specific to…**

| Option B | Option E | Option B2 | Option B3 | Option B4 |
|---|---|---|---|---|
| • Significant negative effects on blanket bog habitat; however, with favourable rerouting this impact could be reduced to a minor adverse effect.<br>• Minor negative effect on blanket bog due to airborne traffic pollution during operation.<br>• Significant negative effect on great crested newt during construction (likely be rendered neutral with due implementation of licensing and associated mitigation).<br>• Minor negative effect on mature damp birch (willow) woodland and areas of non-ancient semi-natural woodland during construction and operation. | • Significant negative effects on blanket bog habitat; however, with favourable rerouting this impact could be reduced to a minor adverse effect.<br>• Minor negative effect on blanket bog due to airborne traffic pollution during operation.<br>• Significant negative effect on great crested newt during construction (likely be rendered neutral with due implementation of licensing and associated mitigation).<br>• Minor negative effect on mature damp birch (willow) woodland and areas of non-ancient semi-natural woodland during construction and operation. | • Significant negative effects on blanket bog habitat; however, with favourable rerouting this impact could be reduced to a minor adverse effect.<br>• Minor negative effect on blanket bog due to airborne traffic pollution during operation.<br>• Significant negative effect on great crested newt during construction (likely be rendered neutral with due implementation of licensing and associated mitigation).<br>• Minor negative effect on areas of non-ancient semi-natural woodland during construction and operation. | • Significant negative effects on blanket bog habitat.<br>• Minor negative effect on blanket bog due to airborne traffic pollution during operation.<br>• Significant negative effect on great crested newt during construction (likely be rendered neutral with due implementation of licensing and associated mitigation).<br>• Minor negative effect on mature damp birch (willow) woodland and areas of non-ancient semi-natural woodland during construction and operation. | • Minor negative effect on areas of non-ancient semi-natural woodland during construction and operation. |

**Impacts across all Options**

<table>
<tr><td>Population and Human Health</td><td colspan="5">
<ul>
<li>Significant negative effect on National Cycle Route (NCR) 75.</li>
<li>Significant negative effect in the medium-term and long-term on two Rights of Way (along the Edinburgh-Glasgow Railway and the Plains to Airdrie route).</li>
<li>Significant negative effect on three core paths (201, 162, and 178).</li>
<li>Minor negative effect on the transport network in the short-term due to construction activity; however, in the medium and long-term the Scheme Options would result in a minor positive effect as a result of improvements to the transport network including the spatial characteristics and the usage of the network.</li>
<li>Minor negative effect on health as a result of significant changes to the landscape amenity</li>
<li>Significant negative effects and positive operational noise impact as a result of both increases and decreases in road traffic noise levels at various locations within the Study Area, with significant beneficial and adverse effects in the medium and long term.</li>
</ul>
Impacts specific to…
<table>
<tr><th>Option B</th><th>Option E</th><th>Option B2</th><th>Option B3</th><th>Option B4</th></tr>
<tr><td><ul><li>Significant negative effect on development land and businesses during construction and operation as a result of the partial acquisition of a site designated in the Proposed LDP for a Potato Processing Factory (Site NLC00585).</li><li>Minor negative effect on designated residential land (Site NLC00585) during construction and operation as a result of the partial acquisition of a site designated for housing.</li><li>Significant negative effect on three additional core paths (157, 158 and 159).</li></ul></td><td><ul><li>Significant negative effect on development land and businesses during construction and operation as a result of the partial acquisition of a site designated in the Proposed LDP for a Potato Processing Factory (Site NLC00585).</li><li>Minor negative effect on designated residential land (Site NLC00585) during construction and operation.</li><li>Significant negative effect on an additional core path (159).</li></ul></td><td><ul><li>Significant negative effect on development land and businesses during construction and operation as a result of the partial acquisition of a site designated in the Proposed LDP for a Potato Processing Factory (Site NLC00585).</li><li>Minor negative effect on designated residential land (Site NLC00585) during construction and operation.</li><li>Significant negative effect on an additional core path (159).</li></ul></td><td><ul><li>Significant negative effect on an additional core path (159).</li></ul></td><td><ul><li>Significant negative effect in the medium-term and long-term on additional Right of Way (route linking the Plains to Airdrie route with Airdriehill Road).</li></ul></td></tr>
</table>
</td></tr>
<tr><td>Water</td><td colspan="5">
Impacts across all Options
<ul>
<li>Minor negative effects on surface water quality at the Luggie Water (includes Shank Burn and Cameron Burn), the South Burn, the Shotts Burn (including the Clattering Burn), and the North Calder Water (including the Kennel Burn and the North Burn).</li>
<li>Minor negative effects on surface water quality at the Luggie Water (includes Shank Burn and Cameron Burn), the South Burn, the Shotts Burn (including the Clattering Burn), and the North Calder Water (including the Kennel Burn and the North Burn).</li>
<li>Minor negative effects on flooding at the Luggie Water (includes Shank Burn and Cameron Burn), the South Burn, the Shotts Burn (including the Clattering Burn), and the North Calder Water (including the Kennel Burn and the North Burn).</li>
<li>Minor negative effect on groundwater quality and flow of the Glasgow and Motherwell Aquifer</li>
</ul>
Impacts specific to…
<table>
<tr><th>Option B</th><th>Option E</th><th>Option B2</th><th>Option B3</th><th>Option B4</th></tr>
<tr><td><ul><li>Minor negative effect on groundwater quality and flow of the Glenboig Aquifer and the Slamannan Aquifer.</li></ul></td><td><ul><li>Minor negative effect on groundwater quality and flow of the Glenboig Aquifer and the Slamannan Aquifer.</li></ul></td><td>N/A</td><td>N/A</td><td>N/A</td></tr>
</table>
</td></tr>
</table>

| | | | | | |
|---|---|---|---|---|---|
| **Soil** | **Impacts across all Options** | | | | |
| | • Minor negative effect on the superficial geology of the area.<br>• Minor negative effect on soil in the area.<br>• Minor negative effect on areas where grouting has been undertaken.<br>• Minor positive effect due to the removal of identified contaminated materials encountered during the construction works.<br>• Minor positive effect due to stabilisation of underground mine workings. | | | | |
| | **Impacts specific to…** | | | | |
| | **Option B** | **Option E** | **Option B2** | **Option B3** | **Option B4** |
| | N/A | N/A | N/A | N/A | N/A |
| **Air** | **Impacts across all Options** | | | | |
| | • Minor negative effect on air quality as a result of construction dust.<br>• Minor negative effect on air quality with is no likely significant air quality effect for human health or designated habitats during the operation of the Scheme.<br>• Minor positive effect on air quality at the Chapellhall Air Quality Management Area due to the large decreases in annual mean PM10 and PM2.5.<br>• Minor negative effect on air quality at designated habitats. | | | | |
| | **Impacts specific to…** | | | | |
| | **Option B** | **Option E** | **Option B2** | **Option B3** | **Option B4** |
| | N/A | N/A | N/A | N/A | N/A |
| **Climatic Factors** | **Impacts across all Options** | | | | |
| | • Minor negative effect on greenhouse gas emissions during construction.<br>• Minor negative effect on greenhouse gas emissions from vehicles during operation.<br>• Minor negative effect on greenhouse gas emissions as a result of operating and maintaining the option.<br>• Minor negative effect on the option as a result of a changing climate during construction and operation. | | | | |
| | **Impacts specific to…** | | | | |
| | **Option B3** | **Option B4** | **Option B2** | **Option B3** | **Option B4** |
| | N/A | N/A | N/A | N/A | N/A |
| **Material Assets** | **Impacts across all Options** | | | | |
| | • Minor negative effect on the existing road network due to construction activities. | | | | |
| | **Impacts specific to…** | | | | |
| | **Option B** | **Option E** | **Option B2** | **Option B3** | **Option B4** |
| | • Minor negative effect on any remaining mineral resources due to the localised sterilisation of potential future opencast coal workings.<br>• Minor positive effect due to improved connectivity to the | • Minor positive effect due to improving land otherwise considered 'marginal' for development.<br>• Minor negative effects associated with bulk/pressure | • Minor negative effect on any remaining mineral resources due to the localised sterilisation of potential future opencast coal workings.<br>• Minor positive effect due to improved connectivity to the | • Minor negative effect on any remaining mineral resources due to the localised sterilisation of potential future opencast coal workings. | • Minor negative effect on any remaining mineral resources due to the localised sterilisation of potential future opencast coal workings. |

| | | | | | |
|---|---|---|---|---|---|
| | road network for future mineral extraction sites.<br>• Minor positive effect due to improving land otherwise considered 'marginal' for development.<br>• Minor negative effects associated with bulk/pressure grouting of mine workings and mine entries. | grouting of mine workings and mine entries. | road network for future mineral extraction sites.<br>• Minor positive effect due to improving land otherwise considered 'marginal' for development.<br>• Minor negative effects associated with bulk/pressure grouting of mine workings and mine entries. | • Minor positive effect due to improved connectivity to the road network for future mineral extraction sites.<br>• Minor positive effect due to improving land otherwise considered 'marginal' for development.<br>• Minor negative effects associated with bulk/pressure grouting of mine workings and mine entries. | • Minor positive effect due to improved connectivity to the road network for future mineral extraction sites. |
| **Cultural Heritage** | **Impacts across all Options** | | | | |
| | • Minor negative effect on cultural heritage assets. | | | | |
| | **Impacts specific to…** | | | | |
| | **Option B3** | **Option B4** | **Option B2** | **Option B3** | **Option B4** |
| | N/A | N/A | N/A | N/A | N/A |
| **Landscape** | **Impacts across all Options** | | | | |
| | • Minor negative effect on the Area East of Airdrie LLU and the Northern Plateau Farmlands LLU | | | | |
| | **Impacts specific to…** | | | | |
| | **Option B** | **Option E** | **Option B2** | **Option B3** | **Option B4** |
| | • Minor negative effect on the Plateau Moorlands LLU.<br>• Significant negative effects on four of the receptor groups, including Riggend, Plains, rural properties east of Airdrie and rural properties east of Chapelhall receptor groups. | • Minor negative effect on the Plateau Moorlands LLU.<br>• Significant negative effects on four of the receptor groups, including Riggend, Plains, rural properties east of Airdrie and rural properties east of Chapelhall receptor groups. | • Minor negative effect on the Plateau Moorlands LLU.<br>• Significant negative effects on the following three receptor groups: Plains, rural properties east of Airdrie and rural properties east of Chapelhall receptor groups. | • Minor negative effect on the Plateau Moorlands LLU.<br>• Significant negative effects on the following three receptor groups: Plains, rural properties east of Airdrie and rural properties east of Chapelhall receptor groups. | • Significant negative effects on the Northeast of Airdrie, rural properties east of Airdrie and rural properties east of Chapelhall receptor groups |

# 9. Inter-relationships and Cumulative Effects

## 9.1. Inter-relationships

9.1.1. As set out in the Scottish Government's SEA Guidance (2013), the inter-relationship of environmental effects between the themes has been considered within the SEA. The Guidance states that *'When considering interrelationships and secondary effects, the assessment would only have to consider the effects that can reasonably be attributed to the plan. Interactions arising from external factors, beyond the control of the plan, do not need to be included'*. Table 8.1 sets out the inter-relationship of environmental effects that could reasonably arise as a result of the project and which have been explored in the detailed theme assessments in Appendix C (Baseline Information and Assessment). These interrelationships have been tailored to consider only what are considered significant interrelationships for the project. For example, air quality may be expected to have a significant inter-relationship with cultural heritage in other projects, where pollutant deposition could affect historic buildings, but this is not considered a significant issue for this project due to the rural nature of the scheme. Some interrelationships identified in Table 9.1 have the potential to result in a cumulative effect, which are discussed in Section 9.2.

**Table 9.1 Inter-relationships between SEA themes**

| | Biodiversity, Flora and Fauna | Population and Human Health | Water | Soil | Air | Climatic Factors | Material Assets | Cultural Heritage | Landscape |
|---|---|---|---|---|---|---|---|---|---|
| Biodiversity, Flora and Fauna | | | ✓ | ✓ | ✓ | ✓ | | | ✓ |
| Population and Human Health | ✓ | | | | ✓ | ✓ | ✓ | ✓ | ✓ |
| Water | ✓ | ✓ | | ✓ | | ✓ | | ✓ | ✓ |
| Soil | ✓ | ✓ | ✓ | | | ✓ | ✓ | ✓ | ✓ |
| Air | ✓ | ✓ | | | | ✓ | | | |
| Climatic Factors | ✓ | | ✓ | ✓ | | | ✓ | | |
| Material Assets | | | ✓ | ✓ | | ✓ | | | |
| Cultural Heritage | ✓ | | | ✓ | | ✓ | | | ✓ |
| Landscape | ✓ | ✓ | ✓ | ✓ | | ✓ | ✓ | ✓ | |

## 9.2. Cumulative Effects

***Overview***

9.2.1. Annex I of the SEA Directive requires that the assessment of effects include secondary, cumulative, and synergistic effects. Scottish SEA Guidance (2013) states that 'Cumulative effects can be considered in terms of synergistic effects[8], additive impacts and secondary effects[9].' For the purposes of this SEA, the term 'cumulative effects' also encompasses synergistic effects. Secondary effects are discussed in the SEA theme appendices (Appendix C - Baseline Information and Assessment).

9.2.2. As stated in the UK Government SEA Guidance, 'Cumulative effects arise, for instance, where several developments each have insignificant effects but together have a significant effect; or where several individual effects of the plan (e.g. noise, dust and visual) have a combined effect.' (Office of the Deputy Prime Minister, 2005). The assessment of cumulative effects can therefore be considered as two separate components, referred to as 'types' for the purposes of this SEA:

- Type 1 Cumulative Effects: Cumulative effects on a single resource/receptor that can arise as the result of an accumulation of impacts of the project across multiple themes. While these effects may be minor in isolation, together they could result in a significant effect on an environmental resource/receptor. Examples of SEA themes with inter-relationships which could combine to result in cumulative effects are outlined in Section 9.1.
- Type 2 Cumulative Effects: Cumulative effects on an SEA theme that can arise from the combined effects of plans or projects. For example, proposals along a linear route, such as a transport corridor, may cumulatively affect the landscape qualities experienced along that route (Scottish Government, 2013).

9.2.3. Separate methodologies were employed for the two types of cumulative assessment and are set out in the following sections. It should be noted that the cumulative assessment is concerned with potentially negative effects only.

***Type 1 Cumulative Effects Methodology***

9.2.4. To consider the potential for a combined effect of different SEA theme impacts on a single receptor/resource, a three-step process has been followed:

<u>Step 1: Review of SEA Potential Effects Summaries and Identification of Receptors/Resources</u>

9.2.5. A list of all the receptors/resources considered in the SEA was compiled and a review of the potential effects from the individual themes was undertaken and, using professional judgement, the potential for interaction with other theme areas was identified. The spatial boundary of the receptor/resource with the potential to be affected by cumulative effects are defined in the study area for each environmental parameter as explained in Appendix C (Baseline Information and Assessment).

[8] Synergistic effects interact to produce a total effect greater than the sum of the individual effects.
[9] Secondary or indirect effects are effects that are not a direct result of the plan, but occur away from the original effect or as a result of a complex pathway.

9.2.6. ‘Climatic factors’ is not considered within the Type 1 assessment as this theme does not consider specific receptors/resources, although there is potential for the other themes to have a cumulative effect on climate and vice-versa (as shown in Table 8.1). The climatic factors assessment presented in Appendix C (Section 1: Climatic Factors) presents the overall effect on climate from multiple factors, including embodied carbon required to construct the project, and vehicle emissions during operation.

Step 2: Identification of Potential Cumulative Effects

9.2.7. Where the same receptor/resource was identified in relation to two or more individual themes, professional judgement was used to determine where multiple effects could combine to result in a cumulative effect.

Step 3: Identification of Significant Cumulative Effects and Proposed Mitigation

9.2.8. Where cumulative effects were identified, the nature of these combined effects were considered, taking account of likely duration (temporary or permanent), extent, frequency and sensitivity of the receptor, and the significance of the effect determined using professional judgement.

9.2.9. It is possible to have multiple significant effects which in combination do not constitute an additional significant (cumulative) effect. However, it is also acknowledged that there is potential that multiple nonsignificant effects (minor or uncertain) in combination could result in a significant cumulative effect, and therefore non-significant residual effects reported in the theme-specific sections in Appendix C (Baseline Information and Assessment) of this SEA were also reviewed.

9.2.10. Recommendations have been made to reduce the potential for cumulative effects.

***Type 2 Cumulative Effects Methodology***

9.2.11. The ‘Type 2’ cumulative effects assessment considered known and expected projects and other expected changes which are likely to form the future baseline for the SEA themes assessed for the project. General/underlying trends (e.g. changes in air quality over time, likely effects of climate change) and projections (e.g. of increasing population in North Lanarkshire) have been included within the SEA theme assessments in Appendix C (Baseline Information and Assessment).

9.2.12. As stated in the Royal Town Planning Institute (RTPI) SEA Guidance, cumulative effects ‘are all of the effects on components of sustainability: from the plan plus all other actions including people’s behaviour and other underlying trends. The “nibbling” effects of a wide range of actions that cause climate change and habitat fragmentation are examples. Assessment of cumulative effects therefore requires a change of focus, from the plan to the sustainability components.’ (RTPI 2018, p.25).

9.2.13. To consider the potential for a combined effect on the SEA themes from the East Airdrie Link Road Scheme, a three-step process has been followed.

Step 1: Identification of Plans

9.2.14. Cumulative effects between the project and other relevant projects are considered in relation to the nature and extent of the effects rather than set boundaries. However, with consideration of the likelihood of significant Type 2 cumulative effects arising, the search was focused according to the following parameters:

- development proposals identified within the North Lanarkshire Council local development plans within 5km of the route corridor with a clear identified programme for delivery;
- other development projects with valid planning permission or consent orders, and for which EIA is a requirement; and,
- road projects which have been confirmed for delivery within a similar timeframe.

9.2.15. Relevant developments were identified through online research and consultation with North Lanarkshire Council.

9.2.16. There are no confirmed trunk road or motorway projects within the 1 km of the Scheme.

9.2.17. Professional judgement was used to 'scope out' any developments that were not considered likely to have in combination significant cumulative impacts. This allowed the assessment to focus on those that may potentially result in significant cumulative impacts in combinations with the Proposed Scheme. This assessment was carried out based on a review of all the findings of this SEA and available information regarding other committed developments.

9.2.18. Wider plans and strategies in the region – such as the Glasgow City Region City Deal - have been scoped out of the cumulative assessment due to the lack of detail and certainty available on specific project proposals. Plans, policies, and strategies and how they are related to the EALR project is set out in detail in Appendix B (Plans, Policies, and Strategies Review). A full review of the project's compliance with plans and policies will be undertaken at subsequent DMRB stages.

Step 2: Potential for Significant Cumulative Effects

9.2.19. Once the projects were identified and agreed, they were reviewed based on their location, type or status of development. Relevant environmental information included within planning applications and published environmental assessments was also considered where available.

9.2.20. Key Type 2 cumulative effects were identified where the plan is considered likely to have a significant negative effect, considering the Type 1 cumulative effects and when considered with other plans, projects and underlying trends.

9.2.21. Professional judgement was used to rate the potential cumulative effects in a matrix, with colours indicating positive, minor negative or uncertain, or significant negative effects, in accordance with the assessment scoring criteria set out in Section 7 (SEA Approach and Methodology).

Step 3: Proposed Mitigation

9.2.22. Where potentially significant Type 2 cumulative effects were identified, recommendations have been included for mitigation measures which could reduce these effects.

9.2.23. Recommendations have been made to reduce the potential for cumulative effects.

***Limitations to Assessment***

9.2.24. The Type 1 cumulative effect assessment is based on a high-level, strategic assessment of likely significant effects on receptors/resources as reported in Appendix C (Baseline Information and Assessment). The actual significance of effects would be assessed once the design has been developed further, at subsequent DMRB stages. A degree of uncertainty regarding the conclusions is therefore acknowledged.

9.2.25. The Type 2 cumulative effect assessment has utilised available information on projects which is often not sufficiently detailed to quantify cumulative effects. As such, professional judgement was used where necessary to qualitatively ascertain the effects of the EALR Scheme in combination with the likely future without the scheme, in relation to each SEA theme. There may subsequently be additional projects which come to the fore with the potential for cumulative effects. A degree of uncertainty regarding the conclusions is therefore acknowledged.

***Type 1 Cumulative Effects Assessment***

9.2.26. Table 9.2 sets out the receptors/resources that were identified as overlapping between two or more SEA themes and the likely significant effect reported in the assessment.

**Table 9.2 Type 1 Cumulative Effects**

| Receptor | SEA Themes | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | Biodiversity, Flora and Fauna | Population and Human Health | Water | Soil | Air | Material Assets | Cultural Heritage | Landscape |
| Population receptors | | - - | | | - | | - | - - |
| Blanket bog/ peat | - - | | | - | | 0 | | |
| Water courses | - | | - | | | | | |
| Woodland (Ancient, native and plantation) | - - | 0 | | | | 0 | | - |

***Type 1 Cumulative Effects Conclusions***

Population Receptors (Residential, Business, road users, WCH users, etc.)

9.2.27. During construction of any large-scale infrastructure it is recognised that there are likely to be unavoidable effects on people living nearby, or passing through the construction site. The potential cumulative effects on the population during construction of the project are summarised as follows:

- the population within the route corridor may be subject to several types of temporary disturbance such as changes to noise and vibration, air quality, visual amenity and access to/from properties.

- WCHs using the National Cycle Route (NCR) 75, Core Paths and Rights of Way (RoW) within the corridor may also experience noise and vibration, air quality, and visual effects, as well as potential disruption due to diversions.

9.2.28. At DMRB Stages 3, during the design development, the significance of these potential effects will be assessed in more detail. It is good practice for the construction of large infrastructure projects to implement mitigation measures through a Construction Environmental Management Plan (CEMP), which would include subsidiary plans relating to, for example, flooding and pollution; soil management and erosion control; landscape and visual; waste management; ecology; air quality; and noise and vibration. A traffic management plan is also likely to be required to be produced by the appointed contractor to avoid or reduce disruption to the road traffic network and to WCHs. These mitigation measures are proposed at SEA level in the relevant theme sections of Appendix C (Baseline Information and Assessment), and would be carried forward to implementation at the construction stage. It is expected that these measures would reduce the effects on the population within the corridor; however, as it is not possible to entirely mitigate negative effects during this phase, due to the nature of construction activities, it is likely there would still be a short-term, significant cumulative effect.

9.2.29. Population receptors may experience similar cumulative effects during operation of the project. Local air quality could be affected, and noise and vibration levels could increase, depending on the traffic levels using the route during operation (as outlined in Appendix C, Section C.5 Air Quality and Section C.2 Population and Human Health respectively); however, details of future traffic flows are unknown at this stage. Additionally, as the preferred route option within the corridor has not yet been chosen, it is not possible to determine the significance of effects on residents, WCHs or road users during operation. Design development and measures would be outlined during DMRB Stages 3 once the preferred route option has been selected and design has been further developed. The extent to which mitigation measures would avoid or reduce the effects on individual receptors is unknown, therefore the overall significance of cumulative effects on the population during operation is **uncertain** at SEA level. Recommendations for reducing the potential for Type 1 cumulative effects on population receptors are outlined in Table 9.3.

<u>Blanket Bog/ Peat</u>

9.2.30. It is likely that peat would be impacted by the project, due to high coverage of peat soils within the corridor. The loss of peat under the footprint of the project could result in the following effects:

- degradation of peatlands and loss of high-value carbon sink and sequestration land;
- loss of blanket bog/peat habitats under the footprint of the project could result in a reduction in habitat availability or habitat fragmentation; and
- changes in soil biodiversity.

9.2.31. The full extent of potential cumulative effects on peat would be dependent on the option alignment and unknown until the design is further developed. It is considered that the SEA recommendations and specific mitigation measures to be developed in subsequent DMRB

stages would reduce the potential for cumulative effects on peat; however, the overall significance of cumulative effects remains **minor negative** or **uncertain** at SEA level. Recommendations for reducing the potential for Type 1 cumulative effects on peat are outlined in Table 9.3.

Watercourses

9.2.32. There are several notable watercourse and pond habitats located within the Study Area. These are particularly important to support populations of great crested newt. Potential direct impacts on the North Calder Water, the smaller Shotts Burn and the upper part of Clattering Burn and on ponds could lead to a loss of these important habitats.

9.2.33. As a result of outfalls from road drainage networks and road maintenance works causing a reduction in surface water quality due to the introduction of particles and pollutants all of the Scheme Options would have the potential to result in impacts on surface water quality at the Luggie Water (includes Shank Burn and Cameron Burn), the South Burn, the Shotts Burn (including the Clattering Burn), and the North Calder Water.

9.2.34. The full extent of potential cumulative effects on watercourses would be dependent on the option alignment and unknown until the design is further developed. It is considered that the SEA recommendations and specific mitigation measures to be developed in subsequent DMRB stages would reduce the potential for cumulative effects on watercourses; however, the overall significance of cumulative effects remains **minor negative** or **uncertain** at SEA level. Recommendations for reducing the potential for Type 1 cumulative effects on peat are outlined in Table 9.3.

Woodland (Ancient, Native and Plantation)

9.2.35. For the purposes of the cumulative assessment, effects on AWI, native, and plantation woodland/forestry have been considered together due to the similarity of the cumulative effects predicted.

9.2.36. Woodland/forestry would be impacted by the project due to the felling required for its construction and operation. The loss of woodland/forestry as a natural resource could have the following effects:

- reduction in sequestration land and carbon sink value for climate change mitigation under the footprint of the project;
- reduction in woodland/forestry used for tourism and recreational purposes, resulting in reduced opportunities for outdoor access;
- reduction in woodland/forestry which can remove or reduce types of vehicle emissions;
- loss of habitat to accommodate construction, resulting in reduced habitat quality and availability and fragmentation; and
- reduction in woodland/forestry, resulting in negative effects on landscape elements and features.

9.2.37. The full extent of potential cumulative effects on woodland would be dependent on the project route alignment and is unknown until the design is further developed. It is considered that the SEA recommendations and specific mitigation measures to be developed in subsequent DMRB stages would reduce the potential for cumulative effects on woodland, however the overall significance of cumulative effects remains minor negative or uncertain at SEA level. Recommendations for reducing the potential for Type 1 cumulative effects on woodland/forestry are outlined in Table 9.3.

***Type 1 Cumulative Effects Mitigation Recommendations***

**Table 9.3 Type 1 Cumulative Effects Assessment Mitigation Recommendations**

| Receptor | Mitigation/ Enhancement Measure | Stage of Implementation | Responsible Party | Consultation/ Approvals Required | Monitoring |
|---|---|---|---|---|---|
| Population receptors | The alignment of the preferred route option shall be developed with cognisance of the potential for cumulative effects - from changes in noise and vibration, air quality, visual, access and recreation - on population receptors and should seek to avoid and reduce these where possible. | • DMRB Stage 2<br>• Pre-construction<br>• Construction | Designer and contractor | n/a | To be monitored by North Lanarkshire Council during subsequent stages |
| Blanket bog/ peat | The alignment of the preferred route option shall be developed to minimise direct impacts on Drumshangie Moss or other potential areas of peat. | • DMRB Stage 2<br>• | Designer | n/a | n/a |
| Watercourses | The alignment of the preferred route option shall be developed to minimise direct impacts on watercourses and ponds | • DMRB Stage 2 | Designer | n/a | n/a |
| Woodland (Ancient, native and plantation) | Monitoring potential cumulative effects on receptors/ resources identified in the SEA throughout design development and adjusting design/ mitigation measures accordingly. | • DMRB Stage 2<br>• Pre-construction<br>• Construction | Designer and contractor | n/a | To be monitored by North Lanarkshire Council during subsequent stages |

***Type 2 Cumulative Effects Assessment***

9.2.38. Known and expected projects with the potential for cumulative effects with the EALR Scheme by virtue of their characteristics, scale, location, or timing have been identified in Table 9.4.

**Table 9.4 Projects identified for inclusion in Type 2 Cumulative Effects Assessment**

| Project Name | Details | Status |
|---|---|---|
| Land at Stirling Rd/ Greengairs Rd Stand Airdrie (01/07 P) | Proposed housing development site (520 units total) | Permitted (18/01785/PPP) |
| Land at Stirling Rd/ Greengairs Rd Stand Airdrie (NLC00585) | Existing business development site - Proposed potato processing factory | Permitted (19/01016/S42) |
| Proposed Energy Plant Greengairs Road (NLC00519) | Existing business development site - Proposed Drumshangie Waste Plant | Permitted (19/01408/S42) |
| Proposed Data Centre Greengairs Road (NLC00520) | Existing business development site - Proposed Greenhills (formally Drumshangie) Data Centre | Permitted (09/00865/PPP) |
| Europark | Mixed Use Housing Development (2,600 units total) | Pending consideration (18/00890/PPP) |
| New Monklands Hospital | New hospital at Wester Moffat, Airdrie | Awaiting application (22/00198/PAN) |

9.2.39. The Type 2 cumulative effects assessment is presented in Table 9.5 below.

## Table 9.5 Type 2 Cumulative Effects Assessment

| SEA Theme | Type 2 Cumulative Effects | Proposed Mitigation |
|---|---|---|
| **Biodiversity, Flora and Fauna** | It is expected that most of the projects outlined in Table 9.4 would lead to effects on biodiversity to some degree, due to disturbance from construction activities and/or loss of habitat under the project footprint.<br>There are no predicted effects on statutory nature conservation sites from any of the projects. However, there are likely to be cumulative impacts non-statutory Sites of Nature Conservation Importance (SINCs) (including the Drumshangie Moss SINC), which are designated by North Lanarkshire Council and subject to local policy protection.<br>While species population decline and/or loss of habitat may not be considered significant from a single project outlined in Table 9.4 in isolation, when these effects are considered together there is potential for a significant effect on biodiversity at a strategic level. | • Further assessment is required at DMRB Stage 3 to determine extent of potential cumulative effects on the biodiversity.<br>• Cognisance of the principle of securing positive effects for biodiversity and national biodiversity goals to be considered at all stages of the EALR project lifecycle. |
| **Population and Human Health** | It is expected that Major infrastructure works outlined in Table 9.4 such as the Monklands Hospital and Proposed Drumshangie Waste Plant projects will have some impacts on human health during construction and operation as a result of impacts on noise and landscape amenity. These effects are likely to be localised and therefore no additional cumulative effects on population receptors are anticipated. | • Short-term construction impacts would already be mitigated at a project level by measures such as Construction Management Plans and Traffic Management Plans. |
| **Water** | It is expected that most of the projects outlined in Table 9.4 would lead to construction impacts on watercourses to some degree.<br>Major infrastructure works outlined Table 9.4 such as the Monklands Hospital and Proposed Drumshangie Waste Plant projects would have greater impacts on the water environment than the smaller projects (e.g. housing developments) due to the scale and extent of construction activities.<br>Cumulative effects on water are not anticipated to be significant. | • Further assessment is required at DMRB Stage 3 to determine extent of potential cumulative effects on the water environment. |
| **Soil** | It is expected that most of the projects outlined in Table 8.4 would lead to construction impacts on soils to some degree. Major infrastructure works outlined above such as the Monklands Hospital and Proposed Drumshangie Waste Plant projects would have greater impacts on soils than the smaller projects (e.g. housing developments) due to the scale and extent of construction activities and disturbance/movement of soils required. | • Further assessment is required at DMRB Stage 3 to determine extent of potential cumulative effects on the soil environment. |
| **Air** | It is expected that most of the projects outlined in Table 9.4 would lead to changes in air quality during construction to some degree.<br>Major infrastructure works outlined above such as the Monklands Hospital and Proposed Drumshangie Waste Plant projects would have greater impacts air quality during construction and operation than the smaller projects, in the short to medium term ahead of the gradual shift towards electric vehicles as outlined in Scottish Government policy.<br>In the long-term, cumulative effects on air quality are not anticipated to be significant. | • No significant cumulative effect is predicted therefore no additional mitigation is proposed. |
| **Climatic Factors** | Major infrastructure works outlined Table 9.4 such as the Monklands Hospital and Proposed Drumshangie Waste Plant projects would have greater impacts on climate than the smaller projects (e.g. housing developments) due to the large quantities of materials required.<br>These projects would also result in an increased number of operational vehicle emissions in the short to medium term ahead of the gradual shift towards electric vehicles as outlined in Scottish Government policy.<br>There is potential for a significant cumulative effect on climatic factors in the short to medium term from the projects outlined in Table 9.4 in combination with the EALR scheme, though it is recognised | • Best practice measures should be implemented to avoid/prevent or reduce the number of new materials required for development. If this isn't possible then measures should be taken to remediate the impact on the climate by identifying, assessing and integrating measures to further reduce carbon through on or off-site offsetting or sequestration.<br>• It is considered that Scottish Government policies in relation to net-zero emissions by 2045 would mitigate effects in the long-term. |

| SEA Theme | Type 2 Cumulative Effects | Proposed Mitigation |
|---|---|---|
| | that the scheme would provide increased access to these developments reducing the potential for increased emissions due to congestion. | |
| **Material Assets** | Major infrastructure works outlined Table 9.4 such as the Monklands Hospital and Proposed Drumshangie Waste Plant projects would have greater impacts on material assets than the smaller projects (e.g. housing developments) due to the large quantities of materials required.<br>There is potential for a significant cumulative effect on climatic factors in the short to medium term from the projects outlined in Table 9.4 in combination with the EALR scheme. | • Best practice measures should be implemented to avoid/prevent or reduce the number of new materials required for development. If this isn't possible then measures should be taken to remediate the impact on the climate by identifying, assessing and integrating measures to further reduce carbon through on or off-site offsetting or sequestration. |
| **Cultural Heritage** | There are no anticipated to be any cumulative effects on cultural heritage assets as there are only are 12 designated assets recorded within the 1km Study Area none of which are near to the developments listed in Table 9.4 above. | • No significant cumulative effect is predicted therefore no additional mitigation is proposed. |
| **Landscape** | It is expected that most of the projects outlined in Table 9.4 would have landscape and visual impacts to some degree.<br>Major infrastructure works outlined in Table 9.4 such as the Monklands Hospital and Proposed Drumshangie Waste Plant projects would have greater landscape and visual effects than the smaller projects (e.g. housing developments) due to the scale and extent of construction activities and the permanent change to the landscape during operation, though effects would reduce following establishment of landscape planting proposals.<br>Changes to the landscape and views across Scotland as a result of the projects outlined in Table 9.4 in combination with the EALR scheme may result in the potential for a significant cumulative effect. | • Further assessment is required at DMRB Stage 3 to determine extent of potential cumulative effects on landscape receptors. |

***Type 2 Cumulative Effects Conclusions***

9.2.40. Potential significant negative cumulative effects were predicted for the Biodiversity, Flora and Fauna, Climatic Factors, Material Assets and Landscape SEA themes.

9.2.41. It is expected that most of the projects outlined in Table 9.4 would lead to temporary changes in air quality during construction to some degree. Similarly, there could be construction-stage effects on the population and human health SEA theme, related to traffic volumes and noise, air quality and disturbance. However, in the long-term, cumulative effects on Air Quality and Population and Human Health are not anticipated to be significant.. It should be noted though that if new road infrastructure is not built to the east of Airdrie, the additional traffic in the area accessing the proposed new hospital at Wester Moffat, may result in a significant impact on the air quality in Chapelhall and Airdrie due to increased congestion.

9.2.42. Mitigation measures have been proposed for all significant cumulative effects identified in Table 9.5. Mitigation and enhancement measures for each SEA themes are described in more detail in Section 10 (SEA Findings and Recommendations).

# 10. SEA Findings and Recommendations

## 10.1. Summary of Key Findings

10.1.1. Five Scheme options, described in Section 6, have been considered as part of this SEA. This section summarises the likely significant effects and opportunities of the project in relation to the SEA themes in Section 8 (Environmental Assessment). The following SEA themes were assessed to have no significant adverse effects at SEA level:

- Water;
- Soil;
- Air;
- Climatic Factors; and,
- Cultural Heritage.

10.1.2. Table 10.1 below sets out the likely significant effects reported in this SEA. Likely significant effects were reported for the following SEA themes:

- Biodiversity, Flora and Fauna,
- Population and Human Health;
- Material Assets; and,
- Landscape.

10.1.3. The SEA has found that all five possible route options would need further survey and assessment at DMRB Stage 3 to effectively mitigate the potential negative environmental effects described in this Environmental Report.

10.1.4. The potential significant effects reported in Table 10.1 are at a strategic level and it is expected that through design development and mitigation measures at subsequent DMRB stages it would be possible to avoid or reduce these effects.

## Table 10.1 Significant Impacts and Effects

| Receptor | | Potential Impact | Effect Duration |
|---|---|---|---|
| **Biodiversity, Flora and Fauna** | | | |
| Non-statutory Designated Sites | Construction | All Scheme Options would result in temporary loss of areas of multiple SINCs. | Short to medium-term, temporary |
| | Operation | All Scheme Options have potential direct and indirect impacts on multiple SINCs. | Long-term, permanent |
| Blanket Bog | Construction | Options B, E, B2 and B3 would result in temporary loss of areas of blanket bog at Drumshangie Moss.. Options, B, B2 and E have the potential to be rerouted more favourably reducing the effect to minor adverse. | Short to medium-term, temporary |
| | Operation | Options B, E, B2 and B3 will have potential direct and indirect impacts on areas of blanket bog at Drumshangie Moss. Options, B, B2 and E have the potential to be rerouted more favourably reducing the effect to minor adverse. | Long-term, permanent |
| Ancient Woodland | Construction | All Scheme Options would result in temporary loss of areas of semi-natural woodland at Fairy Glen (Shotts Burn Glen) | Short to medium-term, temporary |
| | Operation | All Scheme Options have potential direct impact on semi-natural woodland at Fairy Glen (Shotts Burn Glen) | Long-term, permanent |
| Invasive Non-native Species | Construction | All Scheme Options will have the potential to spread of invasive plants (including Japanese knotweed) elsewhere along the North Calder Water or within the numerous SINCs. | Short-term, temporary/ reversable |
| Bats | Operation | All Scheme Options will have a potential impact on bat fatalities as a result of crossing or following road. | Long-term, temporary/ reversable |
| Great Crested Newt | Construction | Options B, E, B2 and B3 have the potential to result in loss or impacts on great crested newt breeding ponds/fatalities. | Short to Medium-term, temporary |
| | Operation | All Scheme Options will have a potential impact on newt fatalities crossing the road. | Long-term, temporary/ reversable |
| Otter, Water Vole and Badger | Construction | All Scheme Options will have a potential direct impact on otter, badger or water vole refuges. | Short to Medium-term, temporary |
| | Operation | All Scheme Options will have a potential impact on otter, badger or water vole fatalities crossing the road. | Long-term, temporary/ reversable |
| Birds | Construction | All Scheme Options will have the potential to result in the breeding disturbance of Schedule 1 bird species such as kingfisher, peregrine falcon, or barn owl, if present in suitable habitat in the Study Area.<br>All Scheme Options will have the potential to impact on general breeding bird through habitat loss/nest destruction. | Short to Medium-term, temporary |
| Fish | Construction | All Scheme Options will have potential pollution impact/habitat loss on fish population. | Short to Medium-term, temporary |
| | Operation | All Scheme Options will have the potential to result in operational run-off pollution of fish habitat. | Long-term, temporary/ reversable |
| **Population and Human Health** | | | |
| Development Land and Businesses | Construction | Options B, E and B2 will result in temporary land-take of designated residential land (Site NLC00585). | Short-term, temporary |

| Receptor | | Potential Impact | Effect Duration |
|---|---|---|---|
| | Operation | Options B, E and B2 will require the partial acquisition of designated residential land (Site NLC00585). | Medium to Long-term, permanent |
| Walking, Cycling and Horse Riding (WCH) Provision | Construction | All Scheme Options will have temporary impacts on National Cycle Route (NCR) 75. | Short-term, temporary |
| | | All Scheme Options will have temporary impacts on Rights of Way (RoW) in the area. | Short-term, temporary |
| | | Option B4 will have temporary impacts on three core paths (201, 162 and 178).<br>Options E, B2 and B3 will have temporary impacts on four core paths (201, 162, 178 and 159).<br>Option B will have temporary impacts on six core paths (201, 162, 178, 157, 158 and 159). | Short-term, temporary |
| | Operation | All Scheme Options will have permanent impacts on National Cycle Route (NCR) 75. | Medium to Long-term, permanent |
| | | All Scheme Options will have permanent impacts on Rights of Way (RoW) in the area. | Medium to Long-term, permanent |
| | | Option B4 will have permanent impacts on three core paths (201, 162 and 178).<br>Options E, B2 and B3 will have temporary impacts on four core paths (201, 162, 178 and 159).<br>Option B will have temporary impacts on six core paths (201, 162, 178, 157, 158 and 159). | Medium to Long-term, permanent |
| Human Health | Operation | All Scheme Options will result in both increases and decreases in road traffic noise levels at various locations within the study area, with significant beneficial and adverse effects in the medium and long term. | Medium to Long-term, permanent |
| **Material Assets** | | | |
| Waste | Construction | Landfill capacity is a finite resource and is the least preferred management option in the waste hierarchy. Scheme Options may result in significant reduction in Scottish landfill capacity if mitigation measures are not viable. | Short-term, temporary |
| **Landscape** | | | |
| Riggend | Construction | Option B has the potential for noticeable change to visual amenity due to the introduction of a road corridor and traffic in the foreground of views. | Short-term, temporary |
| | Operation | Option B has the potential for noticeable change to visual amenity due to the introduction of a road corridor and traffic in the foreground of views. | Medium to long-term, permanent |
| North East Airdrie | Construction | Option B4 will have close range views from many properties in this receptor group, particularly along the settlement edge. | Short-term, temporary |
| | Operation | Option B4 will have close range views from many properties in this receptor group, particularly along the settlement edge. | Medium to long-term, permanent |
| Rural Properties east of Airdrie | Construction | All Scheme Options would have potential for construction activity and associated traffic to occupy the foreground or wide extent of views from select receptors in this group | Short-term, temporary |
| | Operation | All Scheme Options would have potential for road corridor and associated traffic to occupy the foreground or wide extent of views from select receptors in this group | Medium to long-term, permanent |

| Receptor | | Potential Impact | Effect Duration |
|---|---|---|---|
| Plains | Construction | Options B, E, B2 and B3 have the potential for midrange views of construction activity across a wide extent of the view from properties on the settlement edge. | Short-term, temporary |
| | Operation | Options B, E, B2 and B3 have the potential for midrange views of operational stage traffic across a wide extent of the view from properties on the settlement edge. | Medium to long-term, permanent |
| Rural properties east of Chapelhall | Construction | All Scheme Options would have potential noticeable change to visual amenity due to the introduction of a new road corridor and associated traffic across a relatively wide extent of the view. | Medium to long-term, permanent |
| | Operation | All Scheme Options would have potential noticeable change to visual amenity due to the introduction of a new road corridor and associated traffic across a relatively wide extent of the view. | Medium to long-term, permanent |

Table 10.2 below sets out the potential environmental opportunities identified at SEA level.

### Table 10.2 Potential Opportunities

| SEA Theme | Potential Opportunities |
|---|---|
| Biodiversity, Flora and Fauna | The iterative design process provides opportunities to protect the integrity of existing habitat, green/blue networks and other wildlife corridors.<br>Where appropriate, Enhancement opportunities should be considered at DMRB Stage 3 to help produce a net gain for biodiversity and meet the SEA objective. |
| Population and Human Health | The project provides a potential opportunity to enhanced linkages and for the provision of additional access (and enhanced parking facilities) to the National Cycle Route (NCR) 75, Core Paths and Rights of Way (RoW) improving access to the green infrastructure within the Study Area. This could provide enhanced access to the natural environment for those wishing to park and proceed via active modes. Improved access to the green infrastructure could potentially provide health and wellbeing benefits by encouraging local residents and visitors to the area to spend more time outdoors. |
| Water | Through the implementation of appropriate mitigation measures there may also be opportunity to provide improvements to enhance the status and/or potential of waterbodies under WFD Directives and successor legislation. |
| Air | The project provides the opportunity to improve air quality in the Chapelhall AQMA by providing an alternative north-south route for strategic traffic. The project provides the opportunity to promote the use of sustainable modes of transport, including walking, cycling and public transport through enhanced linkages to walking and cycling routes and core paths.. The project also has the potential to deliver an offline active travel route through Chapelhall and Airdrie further reducing the impact on air quality through modal change. |
| Climatic Factors | The project provides the opportunity to reduce climate impacts through the promotion of sustainable modes of transport, including walking, cycling and public transport and supporting the adaptation of existing habitat, green/blue networks and other wildlife corridors to the potential effects of climate change the improved integrity. |
| Cultural Heritage | Enhancement opportunities should be considered to provide wider access to the historic environment to enhance local diversity and distinctiveness. |
| Landscape | Consider opportunities for landscape, placemaking and public realm improvements to help the scheme tie into the surrounding landscape, urban realm and visual context. This is likely to be most applicable to locations close-by to settlement and along settlement edges or in locations which are used for recreation |

## 10.2. Key Recommendations

10.2.1. This section summarises the findings in relation to the possible route options and sets out the SEA recommendations for future design development and assessment.

10.2.2. The Scheme Options considered in the SEA are in the early stages of design development and as such, a detailed option comparison assessment has not been undertaken. However, the assessments undertaken for each SEA theme have considered each of the Scheme Options at a high-level, and where there is potential for a possible route option to present comparatively more environmental constraints than the other options, this has been highlighted in Section 8 (Environmental Assessment) and Appendix C (Baseline Information and Assessment).

10.2.3. The SEA finds that none of the possible Scheme Options should be discounted on environmental grounds and in many instances, due to the stage of assessment and lack of design detail, it is difficult to differentiate between the possible route options and their associated environmental effects. However, the assessment shows that overall, in many respects, Option B4 would have the most limited impact on the environment, followed closely by Options B3 and B2. Options B and E (including Options E1, G and H) are the worst performing option in relation to this SEA theme environmentally due to their increased impact on environmentally constrained areas. Options B2, B3 and B4 would result in more limited overall environmental effects and can be more easily delivered with environmental protection and enhancement as part of the project. This would also help to reduce the time required for additional iterative design and approvals, such as environmental licences.

10.2.4. Although the SEA has not indicated that any of the possible route options have significant negative effects which cannot be effectively avoided or mitigated, in some instances possible route options are considered to be more or less constrained than others in relation to the specific environmental themes considered within Appendix C (Baseline Information and Assessment) and summarised in Section 8 (Environmental Assessment). Table 10.3 provides a summary of these key environmental constraints. Where possible, differences in constraints between the possible route options are highlighted.

**Table 10.3 Key Constraints across Scheme Options**

| SEA Theme | Key Constraints |
|---|---|
| Biodiversity, Flora and Fauna | Of the five Scheme Options, Option B4 is considered the most preferable ecologically as it bypasses impacts on blanket bog. Options B, B2 and E have the potential to be rerouted to minimise impacts on blanket bog. Option B3 does not have the potential to avoid blanket bog impacts and therefore is the least preferable ecologically. |
| Population and Human Health | Of the five Scheme Options, Option B4 is considered the most preferable as it avoids land take of designed housing (Site 0001/07) as designated in the Proposed LDP) and business development land (Site NLC00585) and will impact the least number of core paths. Option B3 will also avoid housing and business development land; however, it will impact on an additional core path. Options B, B2 and E will all result in a loss of housing and business development land and will impact four core paths. Option B will also impact an additional two core paths, resulting in a total impact on six core paths. |
| Water | Scheme Options which minimise the hydrological pathway to surface waters and groundwater would be preferred. Particularly in the northern portion of the Study Area, this correlates with the shorter options such as B2, B3 and B4. In particular, these options would minimise the potential for adverse impact within the Luggie Water sub-catchment. Options B and E would be the least preferred due to their higher number of crossings. |
| Soil | All Scheme Options would result in similar impacts on soil. |

| SEA Theme | Key Constraints |
|---|---|
| Air | In terms of a route preference, taking into consideration the number of receptors located within 200 m of the options which have the potential to be adversely affected by dust, the options were ranked as B4 (most preferable), B3, B2, E, B (least preferable). With regards to NO2, PM10 and PM2.5 impacts during operation the options were ranked B (most preferable), E, B3 and B4 were similar followed by B (least preferable). |
| Climatic Factors | The impacts of climate change on all Scheme Options are likely to be similar. |
| Material Assets | The impacts of materials assets on all Scheme Options are likely to be similar. |
| Cultural Heritage | Enhancement opportunities should be considered to provide wider access to the historic environment to enhance local diversity and distinctiveness. |
| Landscape | Consider opportunities for landscape, placemaking and public realm improvements to help the scheme tie into the surrounding landscape, urban realm and visual context. This is likely to be most applicable to locations close-by to settlement and along settlement edges or in locations which are used for recreation |

# 11. SEA Mitigation and Monitoring

## 11.1. Proposed Mitigation, Enhancement and Monitoring Recommendations

11.1.1. Table 11.1 provides a preliminary framework based on the design development, mitigation and enhancement recommendations in the assessment of the SEA themes presented in Appendix C (Baseline Information and Assessment) and summarised in Section 8 (Environmental Assessment). It should be noted that this framework is an example only at this stage and may be subject to review following feedback from the public consultation process.

11.1.2. The framework will be updated to include any additional recommendations from the supporting strategic studies that are also being progressed, including the Habitats Regulations Appraisal and Natural Capital Assessment.

11.1.3. The final column of Table 11.1 is included to demonstrate that the framework could be used to record progress against recommendations at various stages throughout the project lifecycle.

## Table 11.1 SEA Mitigation and Monitoring Framework

| Measure | Stage of Implementation | Responsible Party | Consultation/ Approvals Required | Progress (to be completed at future stages) |
|---|---|---|---|---|
| **Biodiversity, Flora and Fauna** | | | | |
| The design of the project should be undertaken in line with best practice and relevant guidance, considering the requirements of The Water Environment (Controlled Activities) (Scotland) Regulations 2011 (as amended) (CAR) and in consultation with SEPA. | • DMRB Stage 3 | Designer | SEPA | |
| Prevent deterioration of the status of surface water bodies during construction through appropriate pollution control for all potentially polluting activities. | • Construction | Contractor | SEPA | |
| Incorporate effective Sustainable Drainage Systems (SuDS) to minimise impacts on water quality, informed by landscape and ecology specialists, such that SuDS features deliver other enhancement benefits where possible. | • DMRB Stage 3 | Designer | SEPA<br>NatureScot | |
| **Population and Human Health** | | | | |
| Pre-construction consultation with affected landowners (designated sites) to agree temporary access arrangements and land take requirements. | • Pre-Construction | Designer and contractor | n/a | |
| Pre-construction consultations to be undertaken with affected property owners and best practice construction methods employed to minimise temporary disruption of property access and operations at the affected site. | • Pre-construction | Designer and contractor | n/a | |
| Ensure the footprint of the option minimises land take requirements at affected sites. | • DMRB Stage 3<br>• Pre-construction | Designer and contractor | n/a | |
| Implementation of a communications strategy to<br>keep local communities informed of the progress of the project and to provide channels for input/ complaints/enquiries, (e.g. telephone helpline, website, email, postal address, etc) | • DMRB Stage 3<br>• Pre-construction<br>• Construction | Designer and contractor | n/a | |
| Design any permanent diversion in NMU routes to provide the same or improved standard of pathway. | • DMRB Stage 3<br>• Pre-construction | Designer and contractor | n/a | |
| Access along WCH networks should also be maintained during construction where possible and any diversions agreed with North Lanarkshire Council. Any temporary diversions should have advanced signage to minimise uncertainty of the route. Permanent diversions to long distance routes impacted by the road will be put in place as mitigation and a new offline active travel route will be created. | • Construction | Contractor | North Lanarkshire Council | |
| **Water** | | | | |
| The design of the project should be undertaken in line with best practice and relevant guidance, considering the requirements of The Water Environment (Controlled Activities) (Scotland) Regulations 2011 (as amended) (CAR) and in consultation with SEPA. | • DMRB Stage 3 | Designer | SEPA | |

| Measure | Stage of Implementation | Responsible Party | Consultation/ Approvals Required | Progress (to be completed at future stages) |
|---|---|---|---|---|
| Prevent deterioration of the status of surface water bodies during construction through appropriate pollution control for all potentially polluting activities. | • Construction | Contractor | SEPA | |
| Incorporate effective Sustainable Drainage Systems (SuDS) to minimise impacts on water quality, informed by landscape and ecology specialists, such that SuDS features deliver other enhancement benefits where possible. | • DMRB Stage 3 | Designer | SEPA<br>NatureScot | |
| **Soil** | | | | |
| Detailed ground investigation is recommended to determine the nature of the soils onsite and subsequent design of the Scheme to minimise impact on underlying soils.. | • DMRB Stage 3<br>• Pre-construction | Designer and contractor | n/a | |
| Implementation of standard mitigation measures during construction such as limiting soil strips in poor weather, temporary support to excavation to prevent soil slippage, limiting haul routes etc., | • DMRB Stage 3<br>• Pre-construction | Designer and contractor | n/a | |
| Ensure the footprint of the option minimises land take requirements of agricultural land | • DMRB Stage 3<br>• Pre-construction | Designer and contractor | n/a | |
| Mechanical stabilisation measures may be required for forming of steeper slopes in superficial deposits. | • Construction | Contractor | n/a | |
| After topsoils have been excavated under the footprint of the Scheme, they would be stored in managed temporarily in appropriately located stockpiles and re-used for covering verges, earthwork slopes and landscaping wherever possible. | • Construction | Contractor | n/a | |
| Restriction of haul routes on agricultural soils and location of stockpiles/compounds away from areas of prime agricultural land | • Construction | Contractor | n/a | |
| **Air** | | | | |
| The Scheme would be subject to measures and procedures as defined within the Construction Environmental Management Plan (CEMP) for the Scheme. These would include a range of Best Practicable Means (BPM) associated with mitigating potential environmental impacts. The measures detailed within the CEMP by the selected construction contractor which would be implemented for the duration of the Scheme construction phase.<br>The CEMP would include a range of industry standard good practice construction phase dust mitigation measures required during all works undertaken based on the level of construction dust risk at sensitive receptors. | • Pre-construction<br>• Construction | Contractor | n/a | |
| **Climatic Factors** | | | | |
| Avoid / prevent:<br>• Maximise potential for re-using and/or refurbishing existing assets to minimise the extent of new construction required, and/or,<br>• Explore alternative lower carbon options to deliver the project objectives; and,<br>• Identify through projects and delivery programmes opportunities to influence user GHG emissions. | • DMRB Stage 3<br>• Pre-construction<br>• Construction | Designer and contractor | n/a | |

| Measure | Stage of Implementation | Responsible Party | Consultation/ Approvals Required | Progress (to be completed at future stages) |
|---|---|---|---|---|
| Reduce:<br>• Apply low carbon and/or reduced resource consumption solutions (including technologies, materials and products) to minimise resource consumption during the construction, operation, and at end of life; and<br>• Energy efficient road lighting to minimise operational energy consumption. | • DMRB Stage 3<br>• Pre-construction<br>• Construction | | n/a | |
| Remediate:<br>• Identify, assess and integrate measures to further reduce carbon through on or off-site offsetting or sequestration. | • DMRB Stage 3<br>• Pre-construction<br>• Construction | Designer and contractor | n/a | |
| Taking into account the dangers associated with working in more extreme weather conditions during construction | • Construction | Contractor | n/a | |
| The materials used to construct the pavements should have superior properties (such as increased tolerance to fluctuating temperatures) | • DMRB Stage 3<br>• Pre-construction<br>• Construction | Designer and contractor | n/a | |
| Consider climate change projections within maintenance plans and drainage systems | • DMRB Stage 3<br>• Pre-construction<br>• Construction | Designer and contractor | n/a | |
| Appropriate emergency systems being in place (including user communications systems such as variable messaging systems) | • DMRB Stage 3<br>• Pre-construction | Designer and contractor | n/a | |
| **Material Assets** | | | | |
| Further assessment of minerals safeguarding is likely to be required at Stage 3 in order to further inform the assessment. | • DMRB Stage 3 | Designer and Contractor | n/a | |
| Further assessment will be required at Stage 3 based on construction and demolition waste forecasts. | • DMRB Stage 3 | Designer and Contractor | n/a | |
| Apply waste hierarchy and Designing Out Waste principals to reduce waste arising. | • DMRB Stage 3<br>• Pre-construction<br>• Construction | Designer and Contractor | n/a | |

| Measure | Stage of Implementation | Responsible Party | Consultation/ Approvals Required | Progress (to be completed at future stages) |
|---|---|---|---|---|
| Implement Environmental Management Plan (EMP) and Site Waste Management Plan (SWMP) throughout design and construction to plan for waste management. | • DMRB Stage 3<br>• Pre-construction<br>• Construction | Designer and Contractor | n/a | |
| Set project targets for the recycling of construction and demolition waste | • Pre-construction<br>• Construction | Contractor | n/a | |
| Identify sources / suppliers of suitable recycled and secondary aggregates. | • Pre-construction<br>• Construction | Contractor | n/a | |
| Identify suitable onsite and offsite reuse / recycling / recovery opportunities. | • Pre-construction<br>• Construction | Contractor | n/a | |
| **Cultural Heritage** | | | | |
| Given the potential for previously unrecorded archaeology and the potential to impact non-designated assets including the former colliery site and dismantled railway, a desk-based assessment and further research would be required for the Scheme. This would be followed by geophysical survey and trial trenching as required. | • DMRB Stage 3<br>• Pre-construction | Designer and contractor | n/a | |
| **Landscape** | | | | |
| Careful consideration of the alignment of new roads and the junction arrangements is required to help achieve the “best fit” with the existing landscape characteristics and forms that are present within the Study Area. Adjusting alignments to follow the existing field boundaries and other landscape elements and therefore avoiding fragmentation of the existing pattern would help to minimise landscape effects | • DMRB Stage 3 | Designer | n/a | |
| Minimise the need for removal of trees, woodland and other key landscape features through careful routeing, including consideration of the full extent of potential land take. Key areas of existing native woodland include along the wooded river corridors of the North Calder Water, Clattering Burn and Shotts Burn and other larger areas associated with the restoration of former opencast coal mining, to the northeast of Airdrie. | • DMRB Stage 3 | Designer | n/a | |
| Avoid an overall net loss of trees and woodland through firstly reducing the number that require to be removed (as above), and where unavoidable replacing with a like for like quantity of locally native tree/woodland planting, which may be either on or off site. It is important that the retention of existing mature and semi-mature vegetation is addressed at an early stage of route refinement and should be considered as a key mitigation resource; Make use of existing topographical features, landform and woodland to help restrict the visual envelope, and where appropriate use landform manipulation, such as false cuttings, to minimise landscape and visual effects, particularly in close proximity to sensitive receptors or the settlement edge. | • DMRB Stage 3 | Designer | n/a | |
| Minimise the need for structures and road furniture elements, such as signs or barriers as far as practical, and where possible rationalise existing elements. Lighting of proposed road corridors should be limited, particularly in more rural | • DMRB Stage 3 | Designer | n/a | |

| Measure | Stage of Implementation | Responsible Party | Consultation/ Approvals Required | Progress (to be completed at future stages) |
|---|---|---|---|---|
| areas. Adjust alignment of all Scheme Options to ensure secondary structures and road furniture elements are taken into account in defining the corridor and associated offsets for protection of existing trees and woodland | | | | |
| Including planting typologies which are in keeping with the surrounding landscape, for example hedgerows and tree lines along boundaries in areas with a smaller scale landscape pattern such as areas within the Southern Plateau Farmland and the Fragmented Farmland: Area East of Airdrie LLUs | • DMRB Stage 3 | Designer | n/a | |
| Construction programme to be kept to the minimum practicable time to reduce the duration of any landscape and visual impacts, with clearance of existing vegetation undertaken as close as possible to works commencing, and top-soiling, reseeding and planting undertaken as soon as practicable after sections of work are complete. | • DMRB Stage 3 | Designer | n/a | |
| A landscape mitigation design should be prepared by a Landscape Architect with input from an Ecologist and should follow guidance set out in Standards for Highways DMRB guidance LD 117 Landscape Design (Highways England, et al., 2020) | • DMRB Stage 3<br>• Pre-construction<br>• Construction | Designer and contractor | n/a | |
| Restoration of all areas temporarily disturbed by construction and not forming part of the permanent scheme | • Construction | Contractor | n/a | |
| The placement of mitigation tree and woodland planting should be sensitively located to tie-in with the existing landscape framework and may also be strategically located to provide screening. For example, it may be possible to strengthen, and join-up existing areas of fragmented woodland associated with areas of former opencast coal mining to the northeast of Airdrie to create a more robust landscape framework | • DMRB Stage 3<br>• Pre-construction<br>• Construction | Designer and contractor | n/a | |
| Soft landscaping should include UK native species and aim to support an overall Biodiversity Net Gain | • DMRB Stage 3<br>• Pre-construction<br>• Construction | Designer and contractor | n/a | |
| The design and finish of various structures and elements of the Proposed Scheme should be of a high quality and be sympathetic to the existing landform and surrounding context | • DMRB Stage 3<br>• Pre-construction<br>• Construction | Designer and contractor | n/a | |
| Consider opportunities for landscape, placemaking and public realm improvements to help the scheme tie into the surrounding landscape, urban realm and visual context. This is likely to be most applicable to locations close-by to settlement and along settlement edges or in locations which are used for recreation | • DMRB Stage 3<br>• Pre-construction<br>• Construction | Designer and contractor | n/a | |

# 12. Next Steps

## 12.1. Next Steps in the SEA Process

12.1.1. This SEA Environmental Report (and associated figures and appendices) will be published on the SEA Gateway for comment from the Consultation Authorities. The report will also be open for comment by key stakeholders and the general public. All comments received on this report will be considered and, where required, addressed prior to the commencement of the next stages of development for the preferred Scheme Option.

12.1.2. On implementation of the actions recommended in this Environmental Report (see Section 11 'SEA Mitigation and Monitoring') it will be ensured that the SEA influences the future implementation of the project to minimise adverse effects and maximise opportunities for environmental enhancements.

12.1.3. An SEA Post Adoption Statement will be published following the finalisation of the Scheme, outlining how the assessment and consultation responses relating to the SEA have been considered within the finalised East Airdrie Link Road scheme. It will also include the final environmental monitoring programme for the East Airdrie Link Road scheme implementation.

## 12.2. Environmental Report Consultation

12.2.1. This Environmental Report will be consulted on for a period of six weeks.

12.2.2. Comments on the Environmental Report can be provided by email to: nlccitydeal@northlan.gov.uk.

12.2.3. The SEA Scoping Report, Environmental Report and Post Adoption Statement will each be placed on Scotland's SEA Gateway website: https://www.gov.scot/policies/environmental-assessment/strategic-environmental-assessment-sea/.

## 12.3. Next Steps for Related Assessments

12.3.1. It will be necessary to undertake an HRA of the DMRB Stage 3 design to identify potential effects of the project on the conservation objectives of European/Ramsar sites. This would ensure that any changes during design development could not have an adverse effect on site integrity of these sites.

## 12.4. Consultation Feedback Review

12.4.1. All consultation feedback received on this Environmental Report will be added to a table which will be included in the SEA Post Adoption Statement. This table will describe how each of the consultation comments has been addressed in the SEA and PES and how they have influenced their development.

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